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# **VERIFICATION AND CERTIFICATION REPORT**

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**Celulosa Arauco y Constitución  
S.A.**

**Nueva Aldea Biomass Power Plant  
Phase 1**

**UN PA 0258**

**Second Crediting Period, Monitoring Period 1: 01/01/2012 – 31/12/2013  
(both days included)**

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<b>Date of Issue:</b>	<b>Project Number:</b>
18/05/2015	CDM.VER0122 CP2 MP1
<b>Project Title:</b>	
Nueva Aldea Biomass Power Plant Phase 1	
<b>Organisation:</b>	<b>Client:</b>
SGS United Kingdom Limited	Celulosa Arauco y Constitución S.A.
<b>Publication of Monitoring Report:</b>	
<b>Monitoring Period:</b>	01/01/2012 – 31/12/2013
First Monitoring Version and Date:	Version 1, dated 29/05/2014
Final Monitoring Version and Date:	Version 9, dated 13/04/2015
<b>Summary:</b>	
<p>SGS United Kingdom Ltd has performed the first verification of the second crediting period of the CDM project activity entitled "Nueva Aldea Biomass Power Plant Phase 1", bearing UNFCCC reference number 0258, with registration date of 31/03/2006 and crediting period (second) from 01/01/2012 – 31/12/2018. The verification includes confirming the implementation of the monitoring plan of the registered PDD version 2 dated 04/11/2013, the revised PDD version 4 dated 24/12/2014 and the application of the monitoring methodology as per ACM0006 version 12.1.1. dated 13/09/2012. A site visit was conducted to verify the data submitted in the monitoring report. SGS confirms the following has been reviewed:</p> <ul style="list-style-type: none"> <li>(a) The registered PDD, including the monitoring plan and the corresponding validation report;</li> <li>(b) The revised PDD submitted with this report;</li> <li>(c) Monitoring report, previous verification reports;</li> <li>(d) The applied monitoring methodology;</li> <li>(e) Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board;</li> <li>(f) All information and references relevant to the project activity resulting in emission reductions.</li> </ul> <p>The project comprises a renewable energy project activity with an installed capacity of 29.94 MW, supplying heat and power to the Nueva Aldea forestry industrial complex and exporting the surplus electricity to the grid. The plant uses biomass that comes from the production lines (sawmill, plywood and log processing mill) located inside the industrial complex where the project is located and also biomass acquired from outside the complex inside the defined project influence area. The biomass used in the cogeneration facility, would in the absence of the project activity, be used only for heat generation in less efficient boilers at the project site and the rest would be dumped, left to decay or burned in an uncontrolled manner without utilising it for energy generation purposes. SGS confirms that the project is implemented in accordance with the validated and registered Project Design Document and as per the revised PDD. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the projects GHG emissions and the resulting GHG emission reductions reported and related to the revised project baseline and monitoring and its associated documents. Based on the information seen and evaluated, SGS confirms that the implementation of the project has resulted in 217,280 tCO<sub>2</sub>e emission reductions during the period 01/01/2012 up to 31/12/2013 (both days included).</p>	
<b>Subject:</b>	
CDM Verification	
<b>Verification Team:</b>	
Alicia Fernández – Lead Assessor Paulina Kellenberger – Local Assessor Yi Liao – Technical Area Expert (TA1.1)	
<b>Technical Review:</b>	<input checked="" type="checkbox"/> No Distribution (without permission from the Client or responsible organisational unit)
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Name: Jonathan Hall Date: 01/06/2015	<input type="checkbox"/> Unrestricted Distribution

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## Abbreviations

BDt or BDT	BDt Bone dried tonne (BDT)
BE	Baseline Emissions
CAR	Corrective Action Request
CDEC-SIC	Central Grid System Load Economic Dispatch Center
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
CNE	Comisión Nacional de Energía (Chilean government authority in charge of energy issues)
DNA	Designated National Authority
EB	Executive Board
EF	Emission Factor
ER	Emission Reduction
FAR	Forward Action Request
GEF	Grid Emission Factor
GHG	Greenhouse Gas(es)
GWP	Global Warming Potential
INFOR	Forestry National Institute
IPCC	Intergovernmental Panel on Climate Change
LE	Leakage Emissions
LHV	Low heating value
HHV	High heating value
LPG	Liquefied Petroleum Gas
LNG	Liquefied Natural Gas
MP	Monitoring Plan
MR	Monitoring Report
NCV	Net Calorific Value
PDD	Project Design Document
PE	Project Emissions
PP	Project Participant
PS	Project Standard
QA/QC	Quality Assurance / Quality Control
RFO(IFO180)	Residual Fuel Oil (Industrial Fuel Oil 180)
RMP	Revised Monitoring Plan
SAP	Systems Applications and Products in data processing
SGS	Société Générale de Surveillance
SIC	Central grid of Chile (Sistema Interconectado Central)
S/N	Serial number
TA	Technical Area
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard

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## 1. Introduction

### 1.1 Objective

SGS United Kingdom Ltd has been contracted by Celulosa Arauco y Constitución S.A. (one of the project participants of the project) to perform an independent verification of its CDM project activity entitled "Nueva Aldea Biomass Power Plant Phase 1". CDM projects must undergo periodic audits and verification of emission reductions as the basis for issuance of Certified Emission Reductions (CERs).

The objectives of this verification exercise are, by review of objective evidence, to establish that:

- The emissions report conforms with the requirements of the monitoring plan in the registered & revised PDDs and the approved methodology; and
- The data reported are complete and transparent.

### 1.2 Scope

The scope of the verification is the independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the project activity. The verification is based on the validated and registered project design document (PDD), the revised PDD and the monitoring report. The project is assessed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures and related rules and guidance.

SGS has, based on the recommendations in the Validation and Verification Standard, employed a risk-based approach in the verification, focusing on the identification of significant reporting risks and the reliability of project monitoring.

Due professional care has been exercised and ethical conduct has been followed by the assessment team during the verification process. The verification report is a fair presentation of the verification activity.

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

### 1.3 Project Activity and Period Covered

This engagement covers emissions and emission reductions from anthropogenic sources of greenhouse gases included within the project boundary of the following project and period:

Title of Project Activity:	Nueva Aldea Biomass Power Plant Phase 1
UNFCCC Registration Number:	0258
Monitoring Period Covered in this Report:	01/01/2012 to 31/12/2013
Project Participants:	Host Country: Celulosa Arauco y Constitución S.A (Chile)  Other countries: United Kingdom of Great Britain and Northern Ireland, Celulosa Arauco y Constitución S.A
Location of the Project Activity:	Nueva Aldea Industrial complex Commune of Ranquil, in the province of Ñuble VIII Region (Bío-Bío Region), Chile

The project comprises of a renewable energy project with an installed capacity of 29.94 MW supplying heat and power to the Nueva Aldea forestry industrial complex and exporting the surplus of electricity to the grid. The plant uses biomass that comes from the production lines (sawmill, plywood and log processing mill) located inside the industrial complex where the project is located and also biomass acquired from outside the complex inside the defined project influence area. The biomass used in the cogeneration facility, would in the absence of the project activity, be used only for heat generation in less efficient boilers at the project site and the rest would be dumped, left to decay or burned in an uncontrolled manner without utilising it for energy generation purposes.

## 2. Methodology

### 2.1 General Approach

SGS performs the verification work using a Periodic Verification Checklist prepared following the VVS. The Periodic Verification Checklist describes the verification approach and the sampling plan.

The checklist gives the assessment team a full understanding of:

- Activities associated with all the sources contributing to the project emissions and emission reductions, including leakage if relevant;
- Protocols used to estimate or measure GHG emissions from these sources;
- Collection and handling of data;
- Controls on the collection and handling of data;
- Means of verifying reported data; and
- Compilation of the monitoring report.

Using the Periodic Verification Checklist, SGS verified the implementation of the monitoring plan and the data presented in the Monitoring Report for the period in question. This involved a site visit and a desk review of the monitoring report. This verification report describes the findings of this assessment.

Only verification activities undertaken after the publication of the monitoring report on the UNFCCC CDM website were used as a basis for SGS to conclude our verification and submit a request for issuance of CERs to the Board.

### 2.2 Verification Team for this Assessment

The following team has been selected to perform the verification of the data during the monitoring period:

Name	Role
Alicia Fernández	Lead Assessor
Paulina Kellenberger	Local Assessor
Yi Liao	Technical Area expert (TA 1.1)

### 2.3 Means of Verification

#### 2.3.1 Review of Documentation

The validated PDD, the revised PDD, the monitoring report submitted by the client and additional background documents related to the project performance were reviewed. A complete list of all documents reviewed is attached in section 15 of this report.



### 2.3.2 Site Visits

As part of the verification, the following on-site inspections have been performed by members of the assessment team:

<b>Location:</b> Arauco Bioenergía's office, Santiago, Chile, and The Nueva Aldea Industrial complex, VIII Region, Chile.	
<b>Date:</b> 24/06/2014, 25/06/2014 & 27/ 06/2014	
<b>Coverage:</b>	<b>Source of Information / Persons Interviewed</b>
<p>The onsite assessment at the Arauco Bioenergía's office involved the review of data and documentation, which is available in the internal information system of the project participant.</p> <p>The onsite assessment at the Trupan complex involved:  An assessment of the implementation and operation of the CDM project activity as per the registered PDD;  A review of information flows for generating, aggregating and reporting the monitoring parameters; Interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the registered and revised monitoring plan  A crosscheck of the relevant information provided in the Monitoring Report and other documents provided by the PP.  A check of the monitoring equipment, monitoring practices and quality control and quality assurance procedures.  And a review of the calculation and assumptions made to determine the emission reductions.</p> <p>The following parameters were checked:  - <math>BR_{PJ,n,y}</math>: Quantity of biomass residues of category <math>n</math> used in the CDM project activity in year <math>y</math> (tonnes on dry-basis).  - % Water content in mass basis in wet biomass residues (Moisture content of the biomass residues)  - <math>NCV_i</math> Net calorific value of biomass or fossil fuel type <math>i</math> (GJ/mass or volume unit).  - <math>D_{f,m}</math>, Return trip road distance between the origin and destination of freight transportation activity <math>f</math> in monitoring period <math>m</math>  - <math>FC_{i,Project\ Site,y}</math> Quantity of fuel type <math>i</math> combusted in process <math>j</math> during the year <math>y</math>  Quantity of fuel type <math>i</math> combusted in process <math>j</math> during the year <math>y</math>.  - <math>FC_{i,Biomass\ Processing,y}</math> Quantity of fuel type <math>i</math> combusted in process <math>j</math> during the year <math>y</math>  - <math>EL_{PJ,gross,y}</math>: Gross quantity of electricity generated in all power plants which are located at the project site and included in the project boundary in year <math>y</math> (MWh)  - <math>HC_{BL,y}</math> Baseline process heat generation in year <math>y</math>  - <math>EF_{grid,OM,y}</math>, CO2 Operating Margin emission factor of the grid.</p>	<p>Carla Seguel – Development Engineer, Arauco Bioenergía</p> <p>Felix Hernaiz, Manager, Nueva Aldea Mill</p> <p>Juan Manuel Castillo –Chief of Energy plant, Nueva Aldea Mill</p> <p>Catalina Montecinos – CDM engineer, Nueva Aldea Mill</p> <p>René Olate - Control room operator, Nueva Aldea Mill</p> <p>Pedro Ibarra - Control room operator, Nueva Aldea Mill</p> <p>Leonardo Sanhueza - Operations, Nueva Aldea Mill</p> <p>Sergio Cerda - Supplying, Nueva Aldea Mill</p> <p>Cesar Santos – Supervisor control room, Nueva Aldea Mill</p> <p>Anibal Placencio – Weighbridge operator, Nueva Aldea Mill</p>

## 2.4 Reporting of Findings

As an outcome of the verification process, the team can raise different types of findings.

In general, where insufficient or inaccurate information is available and clarification or new information is required the team shall raise a Clarification Request (CL) specifying what additional information is required.

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

- I. Non-compliance 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;
- II. Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;
- III. Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;
- IV. Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

The verification process may be halted until this information has been made available to comply with the requirements of the CDM Executive Board. Failure to address a CL may result in a CAR. Information or clarifications provided as a result of a CL may also lead to a CAR.

A clarification request (CL) will be raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met. All CARs and CLs raised during verification shall be resolved prior to submitting a request for issuance.

Corrective Action Requests and Clarification Requests are raised in the Periodic Verification Checklist. The Project Developer is given the opportunity to “close” outstanding CARs and respond to CLs.

Forward Action Requests (FARs) may be raised during verification for actions where the monitoring and reporting require attention and/or adjustment for the next verification period, which are for the benefit of future projects and future verification activities. These have no impact upon the completion of the verification activity.

All CARs, CLs and FARs for this verification period are included in section 10 of this report.

## 2.5 Internal Quality Control

Following the completion of the assessment process and a recommendation by the Assessment Team, all documentation is forwarded to a Technical Review Team. The task of the Technical Review Team is to check that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team.

### Technical Review Team

Name	Role
Michael Wu	Technical Reviewer
Jumson Fu	Technical Area expert TA 1.1

### 3. Verification Findings

#### 3.1 Project Implementation

The following has been checked to verify the applicability of the methodology to the project activity.

The project activity uses the methodology ACM0006, version 12.1.1: "Consolidated methodology for electricity and heat generation from biomass"<sup>/3.3/</sup>. The following are the applicability criteria:

The methodology is applicable to biomass (co-)fired power-and-heat plants. In this regard, it was verified that the project activity is a cogeneration plant that is connected to the Chilean Grid Central Interconnected System (SIC) and generates electricity using the following types of biomass:

- Sludge from industrial operations from Nueva Aldea complex (external);
- Mix of sawdust and bark from industrial operations (internal and external);
- Mix of sawdust and bark from forest operation (external).

The biomass comes from production lines (sawmills, plywood and log processing mill) linked to the Nueva Aldea Industrial complex and from forestry industry biomass residues acquired from outside the mill but inside the defined project influence area. All biomass residues used in the mill are generated from sustainable managed forest plantations (as required by the Chilean law DL701<sup>/25/</sup>) in the region where the project is located.

According to the definitions stated in the methodology ACM0006, version 12.1.1, "*Biomass is non-fossilized and biodegradable organic material originating from plants, animals and microorganisms. This shall include products, by-products, residues and waste from agriculture, forestry and related industries as well as the non-fossilized and biodegradable organic fractions of industrial and municipal wastes. Biomass also includes gases and liquids recovered from the decomposition of non-fossilized and biodegradable organic material*". Thus, it is clear that the sludge from the industrial operations and the mixture of bark and sawdust falls into the aforementioned definition since both are biodegradable organic materials, originated from the industrial operation or from the forestry residues.

In addition, it is required that the project activity falls under one of the following categories:

- 1) Green field power project:
- 2) Power capacity expansion projects
- 3) Energy efficiency improvement projects
- 4) Fuels switch projects.

Since the project activity was part of the initial project design of the Nueva Aldea Industrial Complex, it is concluded that it falls under the category of green field power project: "*the installation of a new biomass residue fired power plant at a site where currently no power generation occurs*".

In addition, the methodology is applicable under the following conditions:

- "*No biomass types other than biomass residues and/or biomass from dedicated plantations are used in the project plant*". During the site visit, by the interviews conducted and the review of records (on the system) in the access control point to the plant, it was verified that only biomass residues such as sludge, bark, sawdust and shavings resulting from industrial, pruning, thinning and harvesting operations are used in the project plant.
- "*Fossil fuels may be co-fired in the project plant. However, the amount of fossil fuels co-fired does not exceed 80% of the total fuel fired on an energy basis*"; Considering the fire that affected the Nueva Aldea Plywood mill and the fact that during 6 days (from 08/01/2012 until 13/01/2012) the power plant operated only with diesel, the PP was requested to clarify and provide additional information regarding the energy source used and operational records. **CL 11 was raised.**  
The PP provided power plant logbook records<sup>/21/</sup> from 31/12/2011 until 14/01/2012. It was verified that on 01/01/2012 the plant was operating with biomass, but later on 02/01/2012 the operation was stopped due to a fire. In addition to the logbook, it was verified that Arauco informed to the local authorities<sup>/22/</sup> that the plant was stopped on 02/01/2012 for security reasons. It was verified as well

that on 08/01/2012<sup>/21/</sup> the power plant operation resumed with diesel, which is consistent with the electricity generation records<sup>/8.9.1/</sup> which show that no generation was recorded from 02/01/2012 until 07/01/2012 (both days included). Finally, it was verified that the change from diesel to biomass, as fuel, started on 08/01/2012 at 15:30 hrs and on 14/01/2012 the boiler was burning only biomass<sup>/21/</sup>.

Based on the diesel and biomass consumption records it was verified that over the monitoring period the diesel consumed represent less than 80% of the total energy consumed. It was verified that even just considering the month of January 2012 the amount of diesel consumed was less than 80%, and considering the whole of 2012, the amount of diesel consumed (in terms of energy) will be even less. Finally, it was verified that for ER calculation, the PP deducted all the energy generated from 08/01/2012 until 13/01/2012<sup>/8.9.1.1b/</sup>, thus the amount of energy generated in January 2012 decreased from 11,491 (MWh)<sup>/5a/</sup> to 9,835 (MWh)<sup>/5b/</sup>. Similarly it was verified that the ER calculation<sup>/5b/</sup> following a conservative approach considers in the project emissions calculation the entire amount of diesel burned during the 6 days (08/01/2012 until 13/01/2012) that the power plant couldn't consume biomass.

Thus based on the information verified and the conservative approach followed by the PP, it is confirmed that the project operated in compliance with the methodology requirements. **CL 11 was closed.**

- *"For projects that use biomass residues from a production process (e.g. production of sugar or wood panel boards), the implementation of the project does not result in an increase of the processing capacity of raw input (e.g. sugar, rice, logs, etc.) or in other substantial changes (e.g. product change) in this process".* As per the registered and revised PDD<sup>/1 – 1.3/</sup> the project was created to swap out the electricity source from non-renewable (grid) to renewable (biomass), thus no increase of the capacity of the plant or any change in the plant processes was involved.
- *"The biomass used by the project facility are not stored for more than one year".* PP was requested to provide the supporting evidence in order to demonstrate that the biomass is not stored for more than 1 year. **CL 6 item 2 was raised.** Using the stock balance from the topographic reports, it was verified that biomass residues are not in storage for more than one year<sup>/8.5.9/</sup>. The PP provided the monthly topographic measurements carried out from December 2011 until December 2013<sup>/8.5.9/</sup>, the cited measurements are done and reported by a third independent party Serviad<sup>/8.5.9/</sup>. The measurements reports the volume of biomass stored in the plant, it was verified that the summary spreadsheets<sup>/8.5.7.b & 8.5.8.b/</sup> are consistent with the monthly information in the reports<sup>/8.5.9/</sup>. About the storage time of the biomass, according to the biomass volumetric balance, the amount biomass consumed is equivalent to the biomass stocked, so there is no accumulation, therefore it is not possible that the biomass is stored for more than one year. **Item closed**
- *"The biomass used by the project facility are not obtained from chemically processed biomass (e.g. through esterification, fermentation, hydrolysis, pyrolysis, bio- or chemical- degradation, etc.) prior to combustion. Moreover, the preparation of biomass-derived fuel do not involve significant energy quantities, except from transportation or mechanical treatment so as not to cause significant GHG emissions";* As per the observations done during the site visit and the information obtained from the plant operator interviewed, the assessment team confirms that once the biomass residues arrive to the power plant, they are already available to be burned in the power boiler. No significant energy is required to process the biomass other than transportation and some mechanical treatment from the biomass from forest.
- *"In the case of fuel switch project activities, the use of biomass or the increase in the use of biomass as compared to the baseline scenario is technically not possible at the project site without a capital investment in ....".* This is not applicable, since this is a Greenfield project activity.
- *"In the case that biogas is used in power and/or heat generation, this methodology is applicable under the following conditions....".* During the site visit it was confirmed that no biogas is used in this project activity, at the project site there are no process/installation to generate biogas.
- *"In the case of biomass from dedicated plantations:....".* This condition is not applicable, since the project activity does not consider dedicated plantations.

Finally, as per the methodology requirement, it “is only applicable if the most plausible baseline scenario, as identified per the “Selection of the baseline scenario and demonstration of additionality” section hereunder, is”:

- “For power generation: Scenarios P2 to P7, or a combination of any of those scenarios”; It was confirmed by the site visit and the document review<sup>1; 1.3/</sup> that the most plausible baseline scenarios for power generation is P7: “The generation of power in the power grid”.
- “For heat generation: Scenarios H2: to H7: or a combination of any of those scenarios”; It was confirmed by the site visit and the document review<sup>1; 1.3/</sup> that the most plausible baseline scenarios for heat generation is H5: The installation of new plants at the project site different from those installed under the CDM project activity.
- “If some of the heat generated by the CDM project activity is converted to mechanical power through steam turbines, for mechanical power generation: Scenarios M2 to M5”; This is not applicable since no mechanical power was generated before the project activity or will be generated without the implementation of the PA.
- “For biomass residue use: Scenarios B1: to B8: or any combination of those scenarios. For scenarios B5: to B8:; leakage emissions should be accounted for as per the procedures of the methodology”. It was verified by the document review, PDD and site visit that only the scenarios B1: “The biomass residues are dumped or left to decay mainly under aerobic conditions. This applies, for example, to dumping and decay of biomass residues on fields”; and B4: “The biomass residues are used for power or heat generation at the project site in new and/or existing plants”; are applicable for the baseline.
- “For the land use of the plantation area: Scenario L1 is the baseline”; This is not applicable because no plantation is considered in this PA.

In conclusion, the project activity meets all applicability criteria of the methodology ACM0006, version 12.1.1, which is in accordance with the VVS, version 7.0, paragraph 255. The project was implemented and equipment installed as described in the registered PDD<sup>01/</sup> and revised PDD<sup>1.3/</sup>.

The project was registered on 31/03/2006 (UNFCCC Project Ref 0258) and the crediting period was renewed on 01/03/2014. The second crediting period starts on 01/01/2012 and ends on 31/12/2018. The assessment team, by means of a site visit to the Nueva Aldea Phase 1 complex, where the project activity is located, assessed that all physical features of this CDM project activity in the registered PDD are in place, and that the project participant has operated the CDM project activity as per the registered PDD<sup>01/</sup> and revised PDD<sup>1.3/</sup>.

The Monitoring Report version 1<sup>4a/</sup> received from the PP was reviewed against the guidelines for “Completing the monitoring report form” (version 3.2) and later against the “Instructions for filling out the monitoring report form” (part of the MR template form version 04.0). During the review it was found that the MR<sup>4a/</sup> was not filled as per the required instructions, thus **CAR 1 was raised**. It was verified that information reported in MR version 9<sup>4i/</sup> is correct against the ER excel calculation file<sup>5h/</sup>. **Item closed**.

The registered PDD<sup>1/</sup> estimated emission reductions for this monitoring period (01/01/2012- 31/12/2013) are 387,816 tCO<sub>2</sub>eq, given the corrections introduced into the PDD<sup>1.3/</sup> the revised estimated emission reductions for this monitoring period (01/01/2012- 31/12/2013) are 402,331 tCO<sub>2</sub>eq. In the Monitoring Report version 1, the PP states that the emission reductions for this monitoring period are 205,061 tCO<sub>2</sub>eq. As indicated in Version 9 of the Monitoring report, the verified amount of emission reductions is 217,280 tCO<sub>2</sub>e, which means that the verified emissions are 46% lower than the estimated value.

The reasons why the verified emission reductions are lower than the estimated emission reductions are the following:

1. As verified by the assessment team, there was a fire at the Nueva Aldea Plywood, which had impact over the project operation as follow:
  - a. The conveyor belt that transport biomass from the cellulose mill was damaged.
  - b. The power plant didn't have biomass supply for a 6-day-period, where the power plant operated with diesel, increasing the project emissions.



2. The power plant was out of service from 13/11/2012 until 30/03/2013, therefore the project didn't generate electricity to inject to the grid and it was required to buy energy from the grid in order to supply the internal demand. It was verified that consistently with the power plant stop, the ER calculation file<sup>/5h/</sup>, tabs "2012 Data", line 15 reports a reduced amount of electricity generation in November and zero in December, while the electricity imports (line 16) increased in comparison with the previous months where the power plant was operative.  
Similarly for 2013, the same situation can be observed in tab "2013 Data", line 15 where there was no generation in January and February, and just a minimum amount was generated in March. In the same manner, the consumption (line 16) was high during the same months.  
As result of the power plant stop, it is correct to have a decrease in the ER because the baseline emission by the electricity generation diminishes and the project emissions by the electricity imports increased.
3. As it is stated in the Monitoring Report, section B.2.1. and as verified (details available in section 3.2.1 of this report), the project was not able to monitor two parameters as per the Monitoring Plan requirements, because the meters accuracy was not in compliance with the committed. As a result, a conservative correction was done in order to cover the gap between the committed accuracy and real one of the energy meters used until August 2013. Thus the PP followed Project Standard Version 7, Appendix 1, section 2, therefore the involved parameters were treated in such a way to minimize the ERs. For this reason it is correct to identify the temporary deviations as a cause of the decrease in the ER of this monitoring period.
4. The parameters whose monitoring equipment had delayed calibration were corrected using a conservative approach. Similarly the measurements related with electricity generation and consumption was corrected in order to address a difference in the equipment accuracy.

The aspects previously analyzed and verified are correct and provide a logical explanation of the differences between the estimated and verified emission reductions

It was verified that there are no other sources of GHG emission attributable to the project which are not mentioned / covered in the registered monitoring plan.

The final version of the MR (version 9)<sup>/4i/</sup> is dated 13/04/2015. This final version of the MR<sup>/4i/</sup> covers all the changes made to the previous versions of the MR. This report covers and details the different versions/stages of the MR where specific comments or requirements were addressed and closed (but not necessarily in the last version of the MR). This criterion applies for all the documents indicated throughout the report.

### **3.2 Post registration changes**

During this monitoring period it was found that the project presented some deviations against the Monitoring plan, all of them where assessed as per VVS version 7 paragraphs 286, 300 and 303. The detailed assessment is available in section 3.2.1 of this report.

Additionally a revised PDD is being presented in order to address corrections and a permanent change to the registered monitoring plan; they have been assessed as per VVS version 7 paragraphs 293, 294, 303, 308, 310 & 311.

#### **3.2.1 Temporary deviations from registered monitoring plan or applied methodology**

As per the monitoring report and the verified information, there are two temporary deviations from the registered and revised monitoring plan<sup>/1, 1.3/</sup>.

1. The amount of biomass -internal sawdust- was not monitored from January to December 2012 as per the Monitoring Plan requirements. It was verified that the PP didn't have operative the procedure to monitor the amount of internal sawdust (on site), thus the PP estimated the amount of internal sawdust combusted, while as per the monitoring plan the parameter has to be measured. Following PS version 7, appendix1, item 2, the PP reported as "0" all the internal sawdust (on site) that was combusted in the power plant. It was verified that in the ER excel file<sup>/5h/</sup>, tab "2012 Data", lines 39&40, only the measured amount of bark from on-site industrial operations is included; the figures

reported<sup>/5h/</sup> were crosschecked with the data reported in the original records<sup>/8.3.1/</sup>, where it is deducted the amount of sawdust from January to December 2012 because it was estimated instead of measured. Additionally, the amount of biomass –external bark- was not monitored in January 2012, and from June to September 2013 which was not meeting the Monitoring Plan requirements.

In accordance with the MR and the verified information<sup>/22/</sup>, a fire occurred in the region (started on 31/12/2011) which affected some areas related with the project. Thus the conveyor belt that transports this biomass was damaged, and therefore unable to measure the biomass in January 2012 with its corresponding measuring equipment. Later in June-September 2013, the integrator of the same meter presented a failure.

Following PS version 7, appendix 1, item 2, the PP reported as "0" the data on consumption of external bark. It was verified that in the ER excel file<sup>/5h/</sup>, tab "2013 Data", line 38, only the measured amount of external industrial biomass is included; the figures reported<sup>/5h/</sup> were crosschecked with the data reported in the original records<sup>/8.3.2/</sup>, where it is deducted the amount external industrial biomass of January 2012 and June to September 2013 due to the meter failure, which was calibrated on 05/09/2013. Thus the PP followed a conservative approach and deducted all the values corresponding to full month of September 2013, this can be observed in the ER excel file<sup>/5h/</sup>, tab "2012 Data", cell "F45" and tab "2013 Data", cell "K45:N45".

It has been verified that the approach followed is in compliance with VVS version 7 paragraph 298.

2. Two gaps in the measurement frequency of the parameter  $NCV_{BR,n,y}$ . The PP did not monitor the parameter every six months as required by the monitoring plan<sup>/1, 1.3/</sup> and the applicable methodology<sup>/3.3/</sup>. In this case the PP decided to use the minimum value published by IPCC 2006 during the gaps; however, even though this approach was considered conservative, it was not in line with the PS v 7 appendix 1 which considers that the baselines parameter has to be "0". **CL 2 was raised** requesting the PP to clarify how the deviation applied is in line with the PS, appendix 1, section 2 requirements.

It was verified that the two periods where the PP did not monitor the parameter  $NCV_{BR,n,y}$  were addressed following a conservative approach. The NCV had two delayed measurements, thus there are two gaps, the first one from 28/11/2012 – 27/12/2012 and the second one from 28/06/2013 – 27/10/2013.

As per the methodology, it was verified that the parameter is involved in the Baseline Emissions due to the aerobic decay or uncontrolled burning of the biomass and in the Project Emissions due to the biomass combustion. Thus considering that the same parameter is used in project and baseline emissions it was verified that the PP considers a conservative approach separately for BE and PE. Thus baseline emissions were considered zero for the deviated periods, it was verified that BE for December 2012 was considered zero in the ER spreadsheet<sup>/5b/</sup>, tab "2012 Emissions" cell F167, the same approach was followed from July to October 2013 tab "2013 Emissions" cell F167.

Regarding the period where the correction was applied it is deemed correct because for 2012 deviation, the whole month of December was considered in order to compensate the 3 days (28 to 30 November), it is deemed correct because December has one day more, thus it is conservative. The same approach was followed for the second deviated period, the correction was done for July to October.

It was verified as well that MR version 8<sup>/4h/</sup>, reports correctly the deviated period and correction applied.

Regarding PE, given that PE are as  $PE_{BR,y} = GWP_{CH4} * EF_{CH4,BR} * \sum BR_{PJ,n,y} * NCV_{BR,n,y}$  and  $EF_{CH4,BR} = 0$  (based on the measurements done), the application of a higher NCV value does not have impact because  $PE_{BR,y}$  was already zero. **Item closed.**

It has been verified that the approach followed is in compliance with VVS version 7 paragraph 298.

It has been verified that the deviations identified were correctly addressed by the PP following Project Standard Version 7, Appendix 1, section 2, and they do not require prior approval, therefore they are presented as part of the request for issuance following VVS version 7 paragraph 294a.

### 3.2.2 Corrections

During the verification assessment two issues that required correction were found:

1. It was found that a new Party (United Kingdom of Great Britain and Northern Ireland) has been linked to the project, thus the PP was requested to correct the MR. **CAR 1 was raised.**  
The PP provided the corrected MR<sup>4e/</sup> where section A.3. was properly updated according with the information available in the UNFCCC project web page. In order to keep consistency between the web page records and the PDD, the PP introduced this correction in a revised PDD<sup>1.3/</sup> in order to correct the information of the Parties related with the project. It was verified that MR version 8<sup>4h/</sup>, section A.4 was correctly filled. **CAR 1 was closed.**
2. Additionally, during the assessment it was noticed that the registered PDD<sup>1/</sup> only reported the GWP<sub>CH4</sub> for the first commitment period and it had omitted the value for the second commitment period. **CAR 16 was raised.** In order to overcome this situation the PP introduced this correction in a revised PDD (version 04)<sup>1.3/</sup> wherein section B.6. is correctly reporting GWP<sub>CH4</sub> as 21 for the first commitment period and 25 for the second commitment period. The correction is in compliance with PS version 7, Annex 1, Para 1.

Given the correction of GWP fixed ex-ante from 2013, a new estimation of the ex-ante emission reduction was done in the ER spreadsheet<sup>1.4/</sup> and included in the revised PDD<sup>1.3/</sup>. It was verified that the updated ER<sup>1.4/</sup> spreadsheet is equivalent to the one approved at the renewal of the crediting period, but the GWP has been corrected in tab "Emission reduction calculation", line 40 where the GWP is 21 for 2012 and 25 from 2013. This correction leads to have new annual estimation of emissions reduction equal to 208,424 tCO<sub>2e</sub> for the period 2013-2020, and an annual average over the crediting period equal to 206,350 tCO<sub>2e</sub>. It was verified that the revised PDD<sup>1.3/</sup> has included correctly this modification in sections B.6.2, B.6.3 and B.6.4.

The MR version 8<sup>4h/</sup>, in its cover page and sections E.5 & E.6, reports the estimated amount of GHG emission reductions according to the registered and revised PDD<sup>1.3/</sup>.  
**CAR 16 was closed.**

Additionally to the points mentioned above, the PP corrected the name of the methodology ACM0006 Version 12.1.1, from "Consolidated methodology for electricity and heat generation from biomass residues" to "Consolidated methodology for electricity and heat generation from biomass".

According to the UNFCCC guidance, the PP submitted the revised PDD using the latest format of the PDD template available at the CDM UNFCCC website (<http://cdm.unfccc.int/>) at the time when it was done (PDD template version 5). The original version of the registered PDD<sup>1/</sup> was transferred to the latest PDD VVS<sup>3.12/</sup> template available at the UNFCCC web site (version 05). The PP provided subsequent version of the revised PDD<sup>1.3/</sup> using version 5 of the template and addressing the previous corrections and including the permanent change assessed in section 3.2.3. of this report. In compliance with the VVS requirements the PP provided the revised PDD as track changes<sup>1.2/</sup> and clean<sup>1.3/</sup>. In order to comply with the template new requirements, the PP had to include additional information about the monitoring plan that was not reported before because it was not required by the previous template. The following corrections were made in order to comply with the new requirements of the PDD template version 5:

- As per the last PDD template, in Annex 1 only one table with contact information is required. Thus the PP deleted the second table with contact information that was included in PDD version 2.
- As per the last PDD template, the PP completed the section B.7.4. It was found that the information included in PDD version 4<sup>1.3/</sup> is correct against the template requirements.

All the corrections done are in compliance with PS version 7, annex1, para 1. and they do not have impact over: i) Additionality of the project activity; (ii) Scale of CDM project activity; (iii) Applicability and application of Approved Baseline Methodology.

The assessment team confirmed that the PDD was updated following the Project design document form for CDM project activities - "Instructions for filling out the project design document form for CDM project activities" version 5.0. Finally it is confirmed that all the changes introduced to the PDD do not require prior approval as per Appendix 1 of the Project Standard version 7. Moreover it can be confirmed as well that



none of the corrections threaten the applicability and application of the relevant methodologies, the additionality of the project or its scale.

### 3.2.3 Permanent changes from registered monitoring plan or applied methodology

During the verification assessment, it was found that the PP was unable to monitor the parameters  $EL_{PJ,gross,y}$ ,  $EL_{PJ,imp,y}$  and  $EL_{PJ,aux,y}$  as per the conditions stipulated in the registered Monitoring Plan<sup>/1/</sup>. According to the verified information from 01/01/2012 until 21/08/2013 and as per MR<sup>/ref 5a/</sup> section D.2, the accuracy of the meters installed in the cited period (PB-0401A161-11, PB-0607A312 and PB-0401A178-11) had an accuracy equal to  $\pm 0.5\%$ <sup>/9.18/</sup>, while the committed accuracy in the registered PDD<sup>/1/</sup> are meant to be  $\pm 0.3\%$ . The PP was requested to clarify how this is in compliance with the registered PDD. **CL 3 item 12 was raised.**

The PP acknowledged the non-compliance of the electricity meters accuracy (for period 01/01/2012 until 21/08/2013). As per the registered PDD, the committed accuracy was  $\pm 0.3\%$ , while the accuracy of meters installed in the cited period was  $\pm 0.5\%$ . It was verified that on 22/08/2013 the new meters with an accuracy of  $\pm 0.3\%$  were installed<sup>/9.36/</sup>. Thus in order to reflect this change in the monitoring plan and in compliance with VVS version 7 para 310 and Project Standard, appendix 1, item 4, the PP presented a revised PDD<sup>/1.3/</sup>. As per the Revised Monitoring Plan included in the PDD version 4<sup>/1.3/</sup>, the committed accuracy for the energy meters is  $\pm 0.3\%$ , but given that they could be changed the PP has committed a maximum acceptable accuracy equal  $\pm 0.5\%$ . The maximum acceptable value defined by the PP in the revised PDD<sup>/1.3/</sup> is deemed suitable, because it corresponds to the value of the meters used by the project before (previous crediting period) which are in compliance with the local regulation<sup>/25/</sup>.

It was verified that PDD version 4<sup>/1.3/</sup> states that if the meter installed has an accuracy change from 0.3% to 0.5%, the measurements has to be corrected as per PS version 7, appendix 1, paragraph 4. This is correct and ensures the commitment to correct data in cases the accuracy is different to the one indicated in the PDD.

In compliance PS version 7, appendix 1, paragraph 4, and as per revised PDD<sup>/1.3/</sup> it was verified that the ER calculation was corrected following a conservative approach. The electricity measurements from 01/01/2012 until 31/08/2013 were corrected in 0.2% (the difference between the meter accuracy 0.5% and the committed one 0.3%). Thus  $EL_{PJ,gross,y}$  was diminished in 0.2% while  $EL_{PJ,imp,y}$  and  $EL_{PJ,aux,y}$  were increased in 0.2%. It was verified that the correction was applied from 01/01/2012 until 31/08/2013 in the ER spreadsheet version 5<sup>/5e/</sup> reports the monitored data in tabs "2012 Data" and "2013 Data", and the application of the cited correction is done in tabs "2012 Emissions" and "2013 Emissions", cell E99, the correction was done in a conservative way because is applied for a longer period than the required. **Item closed.**

It has been verified that the approach followed is in compliance with VVS version 7 paragraphs 310-311 and PS version 7, appendix 1, paragraph 4, this post-registration change does not requires prior approval. Additionally the change to the MP does not have impact over: i) Additionality of the project activity; (ii) Scale of CDM project activity; (iii) Applicability and application of Approved Baseline Methodology.

### 3.2.4 Changes to project design of registered project activity

During the site visit it was verified that no permanent changes have been introduced to the Project Activity design during this monitoring period.

### 3.2.5 Changes to start date of crediting period

There were no changes to the start date of the crediting period.

## 3.3 Remaining Issues, CAR's, FAR's from Previous Validation or Verification

There is no remaining issues from the validation of the renewal of the crediting period<sup>/2/</sup>. The validation opinion can be found in the following link:

<http://cdm.unfccc.int/Projects/DB/DNV-CUK1138279173.34/view>

There are no pending issues, CARs or FARs, from the previous verification reports<sup>/13.1 – 13.6/</sup> which can be viewed on the following links:

- MP6, 01/01/2011 – 31/12/2011  
<http://cdm.unfccc.int/Projects/DB/DNV-CUK1138279173.34/iProcess/SGS-UKL1378303696.08/view>
- MP5, 01/01/2010 – 31/12/2010  
<http://cdm.unfccc.int/UserManagement/FileStorage/B5VITKOZN8LX1JESY69GQPFW3DR2AC>
- MP4, 01/10/2008 – 31/12/2009  
<http://cdm.unfccc.int/UserManagement/FileStorage/TB2P8CVNA7S6X0U913KGH5EYZJFIO4>
- MP3, 01/10/2007 – 30/09/2008  
<http://cdm.unfccc.int/UserManagement/FileStorage/XUAIHY9TBG6JFKCL4Z1N5MDW2VPR78>
- MP2, 01/10/2006 – 30/09/2007  
<http://cdm.unfccc.int/UserManagement/FileStorage/3LOBC88PY5VA749KW6SI8KSVP2F27K>
- MP1, 01/01/2005 – 30/09/2006  
<http://cdm.unfccc.int/UserManagement/FileStorage/T9G0JVVVMXENI2KEB8ZK6HUAFU9P39W>

### 3.4 Completeness and accuracy of Monitoring

#### 3.4.1 Verification of monitoring of parameters

Monitoring of reductions in GHG emissions to result from the registered CDM project activity have been implemented in accordance with the revised monitoring plan<sup>/1.3/</sup>. The monitoring mechanism, including the data collection system, is effective and reliable. The monitoring plan involves the monitoring of the following parameters:

- Parameter 1: Biomass residues categories and quantities used in the project activity.
- Parameter 2: Quantity of biomass residues of category n used in the CDM project activity in year y (tonnes on dry-basis) ( $BR_{PJ,n,y}$ )
- Parameter 3: Quantity of biomass residues of category k used in the Project activity in year y for which the baseline scenario is B4 (tonnes on dry-basis) ( $BR_{B4,n,y}$ )
- Parameter 4: Quantity of biomass residues of category n used in the project activity in year y for which the baseline scenario is B1 or B3 (tonnes on dry-basis) ( $BR_{B1/B3,n,y}$ )
- Parameter 5: Quantity of biomass residues of category n used in the project activity in year y for which the baseline scenario is B5:, B6:, B7, or B8 (tonnes on dry-basis) ( $BR_{B5/B8,n,y}$ )
- Parameter 6: Total mass of freight transported in freight transportation activity f in monitoring period m. ( $FR_{f,m}$ )
- Parameter 7: Return trip road distance between the origin and destination of freight transportation activity f in monitoring period m. ( $D_{f,m}$ )
- Parameter 8: Weight average CO<sub>2</sub> emission factor of fuel type i in year y.  $EF_{CO2,i,y}^*$
- Parameter 9: Quantity of fuel type i combusted in process j during the year y  $FC_{i, Project Plant,y}$
- Parameter 10: Quantity of fuel type i combusted in process j during the year y. ( $FC_{i, Project Site,y}$ )\*
- Parameter 11: Quantity of fuel type i combusted in process j during the year y ( $FC_{i, Biomass Processing,y}$ )\*
- Parameter 12: Project Emission Parameters: CH<sub>4</sub> emission factor for the combustion of biomass residues in the Project Plant ( $EF_{CH4,BR}$ )
- Parameter 13: Baseline process heat generation in year y ( $HC_{BL,y}$ )
- Parameter 14: Gross quantity of electricity generated in all power plants which are located at the project site and included in the project boundary in year y (MWh) ( $EL_{PJ,gross,y}$ )
- Parameter 15: Project electricity imports from the grid in year y (MWh) ( $EL_{PJ,imp,y}$ )
- Parameter 16: Total auxiliary electricity consumption required for the operation of the power plants at the project site in year y. (MWh)
- Parameter 17: Net calorific value of biomass residues of category n in year y (GJ/tonne of dry-basis) ( $NCV_{BR,n,y}$ )
- Parameter 18: % Water content in mass basis in wet biomass residues (Moisture content of the biomass residues)
- Parameter 19: Weight average net calorific value of fossil fuel type i in year y. ( $NCV_{FF,f,y}$ )\*

Parameter 20: CO2 emission factor for grid electricity during year y,  $EF_{grid,CM,y}^*$   
Parameter 21: CO2 Operating Margin emission factor of the grid,  $EF_{grid,OM,y}^*$   
Parameter 22: Amount of fossil fuel type I consumed per power plant,  $FC_{i,m,y} - F_{ci,k,y}^*$   
Parameter 23: Net calorific value of fossil fuel I in year y,  $NCV_{i,y}^*$   
Parameter 24: CO2 emission factor of fossil fuel type I used in power unit m in year y  $^*$   
Parameter 25: Net electricity generated by power plant/unit m and k in year y  $^*$

The parameters marked as \*, are included in section 3.10 of this report.

**Parameter 1: Biomass residues categories and quantities used in the project activity and  
Parameter 2: Quantity of biomass residues of category n used in the CDM project activity in year y  
(tonnes on dry-basis) ( $BR_{PJ,n,y}$ )**

In compliance with ACM0006 version 12.1.1.1 applicability conditions, the project activity burns a mix of biomass residues that is formed by:

- Sludge from offsite industrial operations (external)
- Mix of sawdust and bark from onsite industrial operations (internal)
- Mix of sawdust and bark from offsite industrial operations (external)
- Mix of sawdust and bark from offsite forest operations (external)

The biomass considered on-site (or internal) involves the residues that are generated inside the Nueva Aldea Complex, while the off-site (or external) refer to the residues that are generated outside of Nueva Aldea Complex; among the latter is found the sludge from the pulp mill, biomass residues from forest and industrial operations.

Based on the information reviewed (tickets<sup>/8.13&8.14/</sup> generated at the entrance of the Nueva Aldea Complex and biomass records<sup>/8.5.3b, 8.5.4b, 8.5.7b, 8.5.8c, 8.5.11, 8.5.12/</sup>) and during the site visit, it was verified all the biomass consumed in the project activity is one of the types defined in the PPD and identified above.

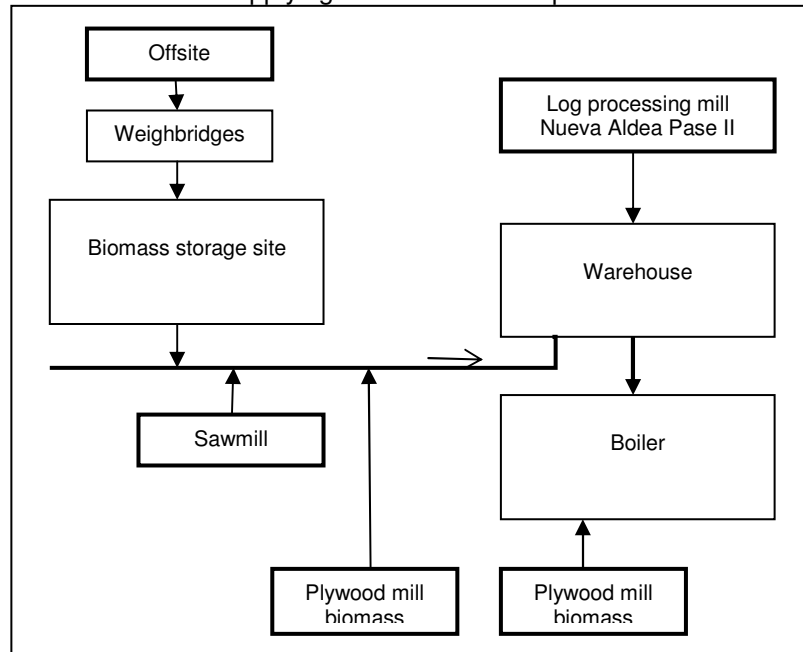
The amount of biomass residues used in the project activity is measured; the equipments involved in the monitoring are the following:

Monitoring equipment	Brand	S/N	Dates
463-FIQ-174	Sander Dust conveyor Belt weight meter KCM/SWB-600,	965691	Not operative during the monitoring period
531-WI-5518A	Pulp Mill Bark conveyor Belt weight meter KEPRO 2200	38711	Operative the whole monitoring period
431-FIQ-502	Log processing Bark conveyor belt weight meter BW500	PBD/W 1020545PJ	Operative the whole monitoring period
Weighbridge 1	Weighbridge 1 North entrance JAGXTREME	5437967-5GF	Operative until 24/01/2012
	Weighbridge 1 North entrance Rice Lake IQ+355	325078	Operative from 24/01/2012
Weighbridge 2	Weighbridge 2 South entrance JAGXTREME	5429421-5EF	Operative the whole monitoring period
Weighbridge 3	Weighbridge 3 Truck exit, JAGXTREME	5437969-5GF	Operative the whole monitoring period
Electronic Moisture Analyzer	Sartorius AG. Gotingen MA100H-000230V1	17302238	Operated until 07/12/2012
	Mettler Toledo HB43-S	B235265966	Operative from 07/12/2012)

The equipment involved in the monitoring system measures the 'wet' biomass weight and the biomass moisture content. The PP obtains the biomass consumed per type in 'dry' weight units (tonnes on dry-basis, 'DBt'), which is used for emission reduction calculations, using the moisture content that is monitored as per the Monitoring Plan<sup>/1, 1.3/</sup> and ACM0006 version 12.1.1. requirements.

All the biomass, exception of the sander dust, is fed to the power boiler by a conveyor belt that takes the mix of biomass from the warehouse. For security reasons, the sander dust is fed directly to the boiler. Biomass is brought to the warehouse by conveyor belts or by front loaders that move the biomass that is left by the trucks in the biomass storage area.

The diagram below describes the supplying of biomass to the power boiler:



According with the information reported in MR section B.2.1. and verified in the operative records of the biomass measured<sup>/8.5.7b – 8.5.8b/</sup> during this monitoring period the meter 463-FIQ-174 was not operative, thus the amount of sander dust was not monitored and is therefore not included in the ER calculation.

During the site visit and based on the biomass records<sup>/8.5.7b – 8.5.8b/</sup> it was verified that the sawdust and bark from industrial operations was measured using two belt conveyor weight meters (TAG 531-WI-5518A and 431-FIQ-502) and by the weighbridges at the entrance of the complex.

- The belt conveyor weight meter TAG 531-WI-5518A measures biomass mix composed by biomass residue (sawdust and bark) coming from the mill outside of the Nueva Aldea complex.
- The belt conveyor weight meter TAG 431-FIQ-502 measures biomass mix composed by biomass residue (sawdust and bark) generated inside the area of the Nueva Aldea complex.
- The weighbridges (1, 2 &3) measures all biomass transported by trucks that enter and leave the complex.

Weight meters TAG 531-WI-5518A and 431-FIQ-502 provides continuous measuring of the quantity of biomass burned at the power boiler. This information is read by the power boiler operator from the DCS terminal<sup>/8.5.10/</sup>. At the end of each operational shift, the operator records the total biomass consumption during that shift. The information along with other operational data is registered in an operational spreadsheet<sup>/8.5.7c – 8.5.8c/</sup>. Then values from both weight meters (TAG 531-WI-5518A and 431-FIQ-502) and the biomass moisture content are reported in the spreadsheet 'Planilla Integradores'<sup>/8.5.11-8.5.12/</sup>.

Regarding the sludge and the residues from forest operations, it was verified that it is brought to the plant by trucks, thus the amount of biomass is measured by the same weighbridges described above. The weight of each truck load is measured at the entrance of the complex before unloading the biomass residues at the power boiler feeding area. Weight is recorded automatically in the system throughout weight bridges. All deliveries can be traced by truck license, supplier name, biomass (bark, sawdust, shavings) and / or day. Each delivery has a unique code so the information can be traced back along the data system called SCR<sup>/8.6.2-8.6.3/</sup>.

In ER excel file<sup>/5h/</sup> tabs “2012 Data” and “2013 Data”, table 3, is recorded the amount wet biomass; similarly it is recorded the biomass moisture per type. The biomass moisture is recorded every eight hours for each biomass type in excel files<sup>/8.1.1, 8.1.2, 8.1.3b, 8.1.4b/</sup>, the information is later transferred into the ER excel file.

In order to assess the amount of biomass per type that is consumed by the project activity, the PP was requested to:

1. Clarify some differences found based on crosscheck done during the site visit for biomass type 1.
2. Provide the topographic measurements or other supporting evidence to demonstrate that the biomass is not stored for more than 1 year.
3. Provide the forms filled onsite to record the biomass consumption from the DCS (hourly records on days 1, 5, 10 & 15 of January, June and December).
4. Provide as sample of 4 days per month (1, 5, 10 & 15) of the records of the operational control of the power plant which is later transferred into the spreadsheet “Integradores”.

**CL 6 was raised.**

The PP provided the revised ER spreadsheet<sup>/5c/</sup> and the corresponding supporting documents<sup>/8.5.7b, 8.5.8b/</sup>, the information was found correct.

Regarding the storage time of the biomass the PP provided the monthly topographic measurements carried out from December 2011 until December 2013<sup>/8.5.9/</sup>, the cited measurements are done and reported by a third independent party Serviad<sup>/8.5.9/</sup>. The measurements reports the volume of biomass stored in the plant, it was verified that the summary spreadsheets<sup>/8.5.7.b & 8.5.8.b/</sup> are consistent with the monthly information in the reports<sup>/8.5.9/</sup>. About the storage time of the biomass, according to the biomass volumetric balance, the biomass consumed is equivalent to the biomass stock; since there is no accumulation, it is not possible that the biomass is stored for more than one year.

As part of the crosscheck of the data used for ER calculations, the updated ER excel file version 4<sup>/5d/</sup> was reviewed, it was verified that the amount of biomass reported is correct against data recorded “Folder Planilla Integradores 2013”<sup>/8.5.12/</sup> and the updated “01 Integradores Ene 2013.xlsx”<sup>/8.5.10/</sup> contained in folder ref. 8.5.12. Similarly the information recorded in operational control records<sup>/8.5.10/</sup> was crosschecked against information recorded in files named “0x Integradores Month 201X.xls”<sup>/8.5.11, 8.5.12/</sup>, it corresponded to an additional review done by the assessment team (not required by the monitoring plan) and the data was found consistent. **CL 6 was closed.**

The methodology ACM0006 version 12.1.1, does not specify the calibration frequency for the monitoring equipments, therefore it is done as per the commitments established in the Monitoring Plan<sup>/1/, 1.3/</sup>. As part of this assessment the following issues were found:

1. The calibration certificates corresponding to the moisture analyzer Mettler Toledo HB43-S was not provided.
2. The calibration certificate<sup>/10.28.3/</sup> of the equipment tag 531-WI-5518A is dated 11/12/2012, however the letter is dated 03/01/2012. PP was requested to clarify this inconsistency.
3. MR informs that weighbridge RICE Lake was calibrated on 27/07/2011, however such calibration certificate was not available.
4. The accuracy class indicated in section D.2 for the weighbridge Rice Lake s/n 325078 is not consistent with the information indicated on page 6, section B.1 of the Monitoring Report version 1.
5. Parameter BR<sub>PJ,n,Y</sub>, the accuracy indicated in section D.2 for the Weighbridge 2 S/N 5429421-5EF (south entrance) is Class III (+/- 30 kg). Calibration certificates only indicate Class III accuracy.
6. The serial number of the weighbridge 2 is incorrectly stated in the calibration certificate dated 24/01/2012.

**CL 3 items 1 to 6 were raised.**

Based on the additional information reviewed, the issues were solved as follow:



1. The PP provided the missing certificates<sup>/10.30.a, 10.30.b, 10.30.c/</sup>, it was verified that the calibration certificates reported in the MR version 2<sup>/4b/</sup> are correct against the certificates<sup>/10.30.a, 10.30.b, 10.30.c/</sup>. **Item closed.**
2. It was reviewed against the document previously available<sup>/10.28.3/</sup> and considered the PP's explanation, which clarified that the presentation letter attached with the certificate was wrong. The certificate provided<sup>/10.28.3.b/</sup> has been accepted. **Item closed.**
3. It was verified that MR version 2<sup>/4b/</sup> corrected the calibration date of the weighbridge RICE Lake (s/n 325078). **Item closed.**
4. It was verified that MR version 2<sup>/4b/</sup> was corrected, the accuracy class of the weighbridge Rice Lake s/n 325078 is now consistently reported in sections B1 and D.2. **Item closed.**
5. It was verified that class III is equivalent to +/-30 kg, this considering the information published by CESMEC (a certified national organization) and the capacity of each weighbridge. **Item closed.**
6. The PP provided the correct calibration certificate<sup>/10.1.6.b/</sup>, it was verified that it is correct considering the S/N of the equipment informed in the MR and verified on site. **Item closed.**

**CL 3 items 1 to 6 were closed.**

In order to have the whole set of information about calibrations and technical specifications of the involved equipments, the PP was requested to:

- Provide technical data sheets, including calibration frequency and accuracy, of the following equipment:

Equipment name	Serial number or Tag
Log processing Bark conveyor belt weight meter BW500	TAG 431-FIQ-502
Pulp Mill Bark conveyor Belt weight meter KEPRO 2200	TAG 531-Wi-5518A
Mettler Toledo HB43-S	S/N B235265966
Weighbridge Rice Lake IQ+355	325078

- Provide the supporting evidence that record the dates when the weighbridge and moisture analyzer were changed/replaced.

**CL 4 items 1 & 2 were raised.**

The PP provided the supporting evidence from the manufacturer<sup>/9.29, 9.30/</sup> of conveyor belt weight meter BW500 (TAG 431-FIQ-502), it was verified that the accuracy informed in MR version 2 is correct. About the calibration frequency, the provider recommends every two years, however the PP will follow a conservative approach every 1 year. The same information was reviewed for the belt weight meter KEPRO 2200<sup>/9.35/</sup>, it was verified that calibration frequency reported in the MR version 2<sup>/4b/</sup> is correct. Finally the calibration frequency of the moisture analyzer (Mettler Toledo) recommended by the manufacturer<sup>/9.34/</sup> is correctly reported in MR version 2<sup>/4b/</sup>.

About the equipments that were changed during this Monitoring Period, the PP provided the records when the weighbridge<sup>/9.37/</sup> and the moisture analyzer<sup>/10.31/</sup> were replaced, it was verified that the replacement dates reported in MR version 2<sup>/4b/</sup> sections B.1 and D.1. are correct.

**CL 4 items 1 & 2 were closed.**

Finally the accuracy and calibration frequency of all the equipments were reviewed, it was verified that the calibration frequencies are defined in the Monitoring Plan is in accordance with the manufacturer recommendation, which is in compliance with VVS version 7 paragraph 287. The table below summarises the specification, calibration and maintenance information of the monitoring equipment, which was duly verified.

Monitoring equipment	S/N	Type	Accuracy	Calibration frequency requirement	Calibration date	Are there delays in calibration?
463-FIQ-174	965691	Sander Dust conveyor Belt weight meter KCM/SWB-600,	+/- 1% /9.15/	6 months /9.8/	13/12/2011 /10.5.1/	No
531-WI-5518A	38711	Pulp Mill Bark conveyor Belt weight meter KEPRO 2200	+/- 1.5% /9.31/	Annual /9.32/	01/09/2011 /10.28.1/ 07/06/2012 /10.28.2/ 14/11/2012 /10.28.3b/ 05/09/2013 /10.28.4/	No
431-FIQ-502	PBD/W 1020545PJ	Log processing Bark conveyor belt weight meter BW500	+/- 1% /9.29/	Annual /9.30/	13/12/2011 /10.2.1/ 26/06/2012 /10.2.2/ 26/12/2012 /10.2.3/ 04/06/2013 /10.2.4/	No
Electronic Moisture Analyzer	17302238	Sartorius AG. Gotingen MA100H-000230V1	Class I /9.19/	Annual /9.11/	15/07/2011 /10.30.a/ 21/06/2012 /10.32/	No
	B235265966	Mettler Toledo HB43-S	Class I, +/- 0.001 gr /9.5/	Annual /9.34/	07/12/2012 /10.30.b/ 31/12/2013 /10.30.c/	Yes from 07/12/2013 – 31/12/2013. Data corrected as per VVS para 283.
Weighbridge 1	5437967-5GF	Weighbridge 1 North entrance JAGXTREME (operated until 24/01/2012)	Class III /9.16/	Biannual /9.6/	27/07/2011 /10.1.1/	No
	325078	Weighbridge 1 North entrance Rice Lake IQ+355 (in operation from 24/01/2012)	+/- 30 Kg Class III /9.27/	Biannual /9.35/	24/01/2012 /10.1.2/ 25/07/2012 /10.1.15/ 30/01/2013 /10.1.3/ 31/07/2013 /10.1.4/	No
Weighbridge 2	5429421-5EF	Weighbridge 2 South entrance JAGXTREME	Class III (+/- 30 kg) /9.16/	Biannual /9.6/	27/07/2011 /10.1.5/ 24/01/2012 /10.1.6b/ 25/07/2012 /10.1.7/ 30/01/2013 /10.1.8/ 31/07/2013 /10.1.9/	No
Weighbridge 3	5437969-5GF	Weighbridge 3 Truck exit, JAGXTREME	Class III (+/- 30 kg) /9.16/	Biannual /9.6/	27/07/2011 /10.1.10/ 24/01/2012 /10.1.11/ 25/07/2012 /10.1.12/ 30/01/2013 /10.1.13/ 31/07/2013 /10.1.14/	No

Considering the assessment done of the calibration certificates, the following issues were found:

- The calibration frequency specified for Weighbridge 1 North entrance Rice Lake IQ+355 is twice a year, however it was calibrated only once in the year 2012.
- According to the information reported in the MR version 1<sup>4a/</sup>, the calibration frequency for the moisture analyzer Sartorius S/N 17302238 is annual but no calibration is reported in 2012.
- Additionally the PP was requested to clarify and provide the accuracy of the new moisture analyzer.
- The "Moisture analyzer" (Mettler Toledo, S/N B235365966) had a delayed calibration in December 2013.

**CAR 5 items 2 to 4 & 6 were raised.**

Based on the additional information reviewed, the issues were solved as follow:

2. The PP provided the missing certificate corresponding to the second calibration of the Weighbridge Rice Lake IQ+355 performed in 2012<sup>10.1.15/</sup>, it was calibrated on 25/07/2012. The PP updated the MR accordingly. Thus the calibration was performed in accordance with the calibration frequency defined by the provider<sup>9.35/</sup> and there is no gap in the calibration.

3. The PP provided the missing certificate corresponding to the calibration of the Moisture Analyzer Sartorius performed in 2012<sup>/10.32/</sup>, it was on 21/06/2012. Thus the calibration was performed in accordance with the committed calibration frequency defined by the provider<sup>/9.19/</sup> and there is no gap in the calibration.

4. It was verified that the new moisture analyzer (Mettler Toledo Class II) has the same accuracy class and permissible error than the previous one (Sartorius). Based on the technical sheet<sup>/9.45/</sup> obtained from the provider (Mettler Toledo), it was verified that accuracy class of the moisture analyzer HB-43 is class I, which is equivalent to  $\pm 0.001$  gr, which is the value committed in the registered PDD. Additionally it was reviewed the complementary information supplied by the PP<sup>/9.46, 9.47, 9.48/</sup>, it was verified that accuracy classification of the moisture analyzer is consistent with the international regulations.

6. The PP acknowledges the delay in the calibration of the Moisture analyzer "Mettler Toledo, S/N B235365966". Thus following VVS version 7, para 283a, the PP applied the maximum permissible error for the moisture content of the biomass of December 2013. The approach followed is correct because the error found in the delayed calibration<sup>/10.30c/</sup> is lower than the maximum permissible<sup>/1, 1.3/</sup> error. On the other hand the PP applied the error in a conservative way in the ER spreadsheet calculation version 5<sup>/5e/</sup>, tab "2013 Data", cells Q51:Q54 for the whole month, i.e. from 01/12/2013 to 31/12/2013, which is conservative as well. The error is applied in such way to reflect the error in the measurement of the wet and dry biomass.

**CAR 5 items 2 to 4 & 6 were closed.**

All spreadsheets<sup>/5h/</sup> and calculations associated with the quantity of biomass combusted in the project plant were checked against data sources and the Monitoring Report Version 9<sup>/4i/</sup>, as requirement of the VVS, version 7.0, paragraph 290.c.

Through the review of the documents (spreadsheets<sup>/8.5.3b, 8.5.4b, 8.5.7b, 8.5.8c, 8.5.11, 8.5.12/</sup> and the ER calculation spreadsheets<sup>/5h/</sup>) and the on-site inspection, it can be confirmed that the implementation of the monitoring system and procedures for this parameter comply with the monitoring system and procedures described in monitoring plan of the registered and revised PDD<sup>/1, 1.3/</sup> and the applied methodology ACM0006 version 12.1.1<sup>/3.3/</sup>.



Registered/revise Monitoring Plan & Approved Methodology	Data/ Parameter	Description	Measured/ /Default	Calculated	Source of data	Monitoring equipment	Measuring/ Reading/ Recording frequency	Calculation method (if applicable)	QA/QC procedures
Monitoring Report, onsite checks									
Requirement in the applicable methodology and relevant EB Documents	BR <sub>PJ,n,y</sub>	Biomass categories and quantities used in the CDM project activity & BR <sub>PJ,n,y</sub> = Quantity of biomass residues of category n used in the CDM project activity in year y (tonnes on dry-basis)	Measured		On-site measurements	Use weight meters.	Continuously	Adjust for the moisture content in order to determine the quantity of dry biomass	Crosscheck the measurements with an annual energy balance that is based on purchased quantities and stock changes
Requirement in the registered and revised monitoring plan	BR <sub>PJ,n,y</sub>	Biomass categories and quantities used in the CDM project activity & BR <sub>PJ,n,y</sub> = Quantity of biomass residues of category n used in the CDM project activity in year y (tonnes on dry-basis)	Measured		On-site measurements	Use weight meters.	Continuously	Adjust for the moisture content in order to determine the quantity of dry biomass	Crosscheck the measurements with an annual energy balance that is based on purchased quantities and stock changes
Implementation of the project	BR <sub>PJ,n,y</sub>	Biomass categories and quantities used in the CDM project activity & BR <sub>PJ,n,y</sub> = Quantity of biomass residues of category n used in the CDM project activity in year y (tonnes on dry-basis)	Measured		On-site measurements	Use weighbridges and conveyor belt meters.	Continuously	Adjusted with the moisture content in order to determine the quantity of dry biomass	Crosscheck the measurements with an annual energy balance that is based on purchased quantities and stock changes
Conclusion on the compliance of the implementation with the monitoring plan & applicable methodology.	In compliance	In compliance	In compliance		In compliance	In compliance	In compliance	N/A	In compliance

**Parameter 3: Quantity of biomass residues of category k used in the Project activity in year y for which the baseline scenario is B4 (tonnes on dry-basis) ( $BR_{B4,n,y}$ )**

As per ACM0006 version 12.1.1. requirements, the PP reports the amount of biomass that was consumed for which the baseline scenario is B4.

The parameter is based on on-site measurements. As it was described in the previous parameters (1 & 2) all the types of biomass that are fed to the boiler are monitored. To see the full assessment of the monitoring equipment involved, please refer to parameters 1 & 2.

As per ACM0006 version 12.1.1, the PP defined in the registered and revised PDD<sup>/1, 1.3/</sup> the manner how the biomass residues are allocated in the baseline scenarios. As per registered and revised PDD<sup>/1, 1.3/</sup>, for B4, the sludge and the mix of sawdust and bark from onsite production will be allocated. It was verified that information reported in MR<sup>/4i/</sup> is correct against the criteria defined in the PDD<sup>/1, 1.3/</sup> and based on the values of the monitored information<sup>/5h, 8.5.2, 8.5.3.b, 8.5.4b, 8.5.5, 8.5.7c, 8.5.8c/</sup>.

Through the review of the documents (spreadsheets<sup>/8.5.3b, 8.5.4b, 8.5.7b, 8.5.8c, 8.5.11, 8.5.12/</sup> and the ER calculation spreadsheets<sup>/5h/</sup>) and the on-site inspection, it can be confirmed that the implementation of the monitoring system and procedures for this parameter comply with the monitoring system and procedures described in monitoring plan of the PDD<sup>/1, 1.3/</sup> and the applied methodology ACM0006 version 12.1.1<sup>/3.3/</sup>.

Registered/ revised Monitoring Plan & Approved Methodology  Monitoring Report, onsite checks	Data/ Parameter	Description	Measured/ Calculated /Default	Source of data	Monitoring equipment	Measuring/ Reading/ Recording frequency	Calculation method (if applicable)	QA/QC procedures
<b>Requirement in the applicable methodology and relevant EB Documents</b>	BR <sub>B4,n,y</sub>	Quantity of biomass residues of category n used in the CDM project activity in year y for which the baseline scenario is B4 (tonne on dry-basis)	Measured	On-site measurements	Use weight meters.	Continuously	Adjust for the moisture content in order to determine the quantity of dry biomass	Crosscheck the measurements with an annual energy balance that is based on purchased quantities and stock changes
<b>Requirement in the registered and revised monitoring plan</b>	BR <sub>B4</sub>	Quantity of biomass residues of category n used in the CDM project activity in year y for which the baseline scenario is B4 (tonne on dry-basis)	Measured	On-site measurements	Use weight meters.	Continuously	See table describing measurement procedures under variable "Biomass residues categories and quantities used in the Project activity" for further information.  Biomass residues type of category 2 will be determined from the heat demanded by the facility processes using equation 14 of the ACM0006.	Crosscheck the measurements with an annual energy balance that is based on purchased quantities and stock changes
<b>Implementation of the project</b>	BR <sub>B4</sub>	Quantity of biomass residues of category n used in the CDM project activity in year y for which the baseline scenario is B4 (tonne on dry-basis)	Measured	On-site measurements	Use weighbridges and conveyor belt meters.	Continuously	The amount of dry biomass residues is determinate adjusting for the corresponding moisture content by each type of biomass.  Adjusted with the moisture content in order to determine the quantity of dry biomass demanded by the facility processes using equation 14 of the ACM0006.	Crosscheck energy balance.
<b>Conclusion on the compliance of the implementation with the monitoring plan &amp; applicable methodology.</b>	In compliance	In compliance	In compliance	In compliance	In compliance	In compliance	In compliance	In compliance

**Parameter 4: Quantity of biomass residues of category n used in the project activity in year y for which the baseline scenario is B1 or B3 (tonnes on dry-basis) ( $BR_{B1/B3,n,y}$ )**

As per ACM0006 version 12.1.1. requirements, the PP reports the amount of biomass that was consumed for which the baseline scenario is B1/B3.

The parameter is based on on-site measurements. As it was described in the previous parameters (1 & 2) all the types of biomass that are fed to the boiler are monitored. To see the full assessment of the monitoring equipment involved, please refer to parameters 1 & 2.

As per ACM0006 version 12.1.1, the PP defined in the registered and revised PDD<sup>/1, 1.3/</sup> the manner how the biomass residues are allocated in the baseline scenarios. As per PDD<sup>/1, 1.3/</sup>, for B1/B3 the mix of sawdust and bark from industrial operation, mix of sawdust and bark from forest operations will be allocated. It was verified that information reported in MR<sup>/4g/</sup> is correct against the criteria defined in the PDD<sup>/1, 1.3/</sup> and based on the values of the monitored information<sup>/5h 8.5.2, 8.5.3.b, 8.5.4b, 8.5.5, 8.5.7c, 8.5.8c/</sup>.

Through the review of the documents (spreadsheets<sup>/8.5.3b, 8.5.4b, 8.5.7b, 8.5.8c, 8.5.11, 8.5.12/</sup> and the ER calculation spreadsheets<sup>/5h/</sup>) and the on-site inspection, it can be confirmed that the implementation of the monitoring system and procedures for this parameter comply with the monitoring system and procedures described in monitoring plan of the PDD<sup>/1, 1.3/</sup> and the applied methodology ACM0006 version 12.1.1<sup>/3.3/</sup>.

Registered/revise Monitoring Plan & Approved Methodology  Monitoring Report, onsite checks	Data/ Parameter	Description	Measured/ Calculated /Default	Source of data	Monitoring equipment	Measuring/ Reading/ Recording frequency	Calculation method (if applicable)	QA/QC procedures
<b>Requirement in the applicable methodology and relevant EB Documents</b>	BR <sub>B1/B3,n,y</sub>	Quantity of biomass residues of category n used in the CDM project activity in year y for which the baseline scenario is B1 or B3 (tonnes on dry-basis)	Measured	On-site measurements	Use weight meters.	Continuously	Adjust for the moisture content in order to determine the quantity of dry biomass	Crosscheck the measurements with an annual energy balance that is based on purchased quantities and stock changes
<b>Requirement in the registered and revised monitoring plan</b>	BR <sub>B1/B3,n,y</sub>	Quantity of biomass residues of category n used in the CDM project activity in year y for which the baseline scenario is B1 or B3 (tonnes on dry-basis)	Measured	On-site measurements	Use weight meters.	Continuously	See table describing measurement procedures under variable "Biomass residues categories and quantities used in the Project activity" for further information.	Cross-check the measurements with an annual energy balance that is based on purchased quantities and stock variations.
<b>Implementation of the project</b>	BR <sub>B1/B3,n,y</sub>	Quantity of biomass residues of category n used in the CDM project activity in year y for which the baseline scenario is B1 or B3 (tonnes on dry-basis)	Measured	On-site measurements	Use weighbridges and conveyor belt meters.	Continuously	The amount of dry biomass residues is determined adjusting for the corresponding moisture content by each type of biomass	Crosscheck with energy balance.
<b>Conclusion on the compliance of the implementation with the monitoring plan &amp; applicable methodology.</b>	In compliance	In compliance	In compliance	In compliance	In compliance	In compliance	In compliance	In compliance

**Parameter 5: Quantity of biomass residues of category n used in the project activity in year y for which the baseline scenario is B5:, B6:, B7, or B8 (tonnes on dry-basis) ( $BR_{B5/B8,n,y}$ )**

As per the PDD<sup>/1, 1.3/</sup>, the baseline scenarios B5, B6, B7 and B8 are not possible scenarios for the project activity therefore the value reported in the MR<sup>/4i/</sup> is zero.

**Parameter 6: Total mass of freight transported in freight transportation activity f in monitoring period m. ( $FR_{f,m}$ )**

The parameter  $FR_{f,m}$  is required to calculate the project emissions due to transport of biomass to the project plant using option B defined by the tool to calculate "Project or leakage emissions from road transportation of freight" (Version 01.1.0)<sup>/3.6/</sup>.

When a truck arrives to the complex, it is registered by the receptionist who checks the dispatch order of raw material, the reception form and delivery form. The truck load is then measured using one of the weighbridges. During the site visit, it was verified that, for the current monitoring period (CP2 MP1: 01/01/2012 – 31/12/2013), the parameter was monitored as per the Monitoring Plan<sup>/1, 1.3/</sup> requirements. The table below shows the monitoring equipment used in the current monitoring period:

Monitoring equipment	Brand	S/N	Dates
Weighbridge 1	Weighbridge 1 North entrance JAGXTREME	5437967-5GF	Operative until 24/01/2012
	Weighbridge 1 North entrance Rice Lake IQ+355	325078	Operative from 24/01/20102
Weighbridge 2	Weighbridge 2 South entrance JAGXTREME	5429421-5EF	Operative the whole monitoring period
Weighbridge 3	Weighbridge 3 Truck exit, JAGXTREME	5437969-5GF	Operative the whole monitoring period

According to the PP records<sup>/10.31/</sup>, the electronic moisture analyser was replaced in December 7<sup>th</sup> 2012. During the site visit performed, it was verified that the new electronic moisture analyzer (Mettler Toledo) was in operation.

All information about biomass brought by trucks is saved in a database called 'SCR'. During the site visit it was verified that the database lists of all biomass suppliers and distances between supplier and project site. It was also verified that that all suppliers are located within a radius of approximately 200 km around the power plant.

Each load is measured and recorded in the Nueva Aldea biomass' database. When the truck is weighted in the weighbridge the operator checks the reading and recorded it in the system. All records can be traced back by truck ID plate, supplier name, type of biomass, and date. To determine the net of biomass weight, the truck weight is subtracted from the measured gross truck load. This is possible because there is a database which contains all truck weights identified by the truck ID plate.

It is important to note that the PDD also indicates the following:

*"Biomass residues of category 4 will be transported to the power plant as follows:*

- Biomass amount from pulp mill operations will be transported using a dedicate conveyor belt, hence the PP will not contemplate this amount under the parameter  $FR_{f,m}$*
- Biomass amount from off-site will be brought by (heavy) trucks to the plant, hence the PP will contemplate this amount under the parameter  $FR_{f,m}$ .*

The PP provided the file "Project emissions road transportation freight.xlsx"<sup>/8.2/</sup>. In this document it has been reported the total biomass residues transported from each commune per month in m<sup>3</sup>st. It was found that the values for  $FR_{f,m}$  per month reported in the ERs spreadsheet<sup>/5a/</sup> were not consistent with the cited file. **CL 7 item 1 was raised.** The PP provided the updated file<sup>/8.2b/</sup> where  $FR_{f,m}$  is calculated, it was

verified that it included all the biomass transported, however the information reported in the cited file and the updated ER excel file<sup>/5b/</sup> were still not consistent. Later, it was verified that ER excel file version 4<sup>/5d/</sup> reports correctly the parameter  $FR_{f,m}$ , it is correct against the records available at “Resumen dhm eva Aldea 2012 140813 ver2.xlsx”<sup>/8.5.7b/</sup> and “Resumen dhm Nueva Aldea 2013 140813 ver2.xlsx”<sup>/8.5.8b/</sup>. **Item closed.**

In order to crosscheck the information with the original records, the PP was requested to provide dispatch orders/control tickets per truck (5 samples per month). **CL 7 item 2 was raised.** The data of biomass per truck, biomass source, biomass type (linked to each truck) reported in files “DHM romana 2012 140813 ver3.xlsx”<sup>/8.6.2/</sup> and “DHM romana 2013 140813 ver2.xlsx”<sup>/8.6.3/</sup> was reviewed against the control/dispatch tickets<sup>/8.13 & 8.14/</sup> no mistakes were found. **Item closed.**

During the site visit, the steps to obtain the project emissions by the biomass transport were reviewed, the PP was asked to clarify how all the freight related with off-site biomass transport is included as per the requirements of Monitoring Plan, ACM0006 version 12.1.1. and the Tool “Project and leakage emissions from transportation of freight”. **CL 7 item 3 was raised.** It was verified that PP completed the set of data related with the mass of biomass transported and the distance for all the sites providing biomass. The file “Project emissions road transportation freight ver2.xlsx”<sup>/8.2b/</sup> contains the mass of all the biomass transported per origin including sludge that was not considered previously. **Item closed.**

Monitoring equipment	S/N	Type	Level	Calibration frequency requirement	Calibration date
Weighbridge 1	5437967-5GF	Weighbridge 1 North entrance JAGXTREME	Class III <sup>/9.16/</sup>	Biannual <sup>/9.6/</sup>	27/07/2011 <sup>/10.1.1/</sup>
	325078	Weighbridge 1 North entrance Rice Lake IQ+355	+/- 30 Kg: Class III <sup>/9.27/</sup>	Biannual <sup>/9.35/</sup>	24/01/2012 <sup>/10.1.2/</sup> 25/07/2012 <sup>/10.1.15/</sup> 30/01/2013 <sup>/10.1.3/</sup> 31/07/2013 <sup>/10.1.4/</sup>
Weighbridge 2	5429421-5EF	Weighbridge 2 South entrance JAGXTREME	Class III (+/- 30 kg) <sup>/9.16/</sup>	Biannual <sup>/9.6/</sup>	27/07/2011 <sup>/10.1.5/</sup> 24/01/2012 <sup>/10.1.6/</sup> 25/07/2012 <sup>/10.1.7/</sup> 30/01/2013 <sup>/10.1.8/</sup> 31/07/2013 <sup>/10.1.9/</sup>
Weighbridge 3	5437969-5GF	Weighbridge 3 Truck exit, JAGXTREME	Class III (+/- 30 kg) <sup>/9.16/</sup>	Biannual <sup>/9.6/</sup>	27/07/2011 <sup>/10.1.10/</sup> 24/01/2012 <sup>/10.1.11/</sup> 25/07/2012 <sup>/10.1.12/</sup> 30/01/2013 <sup>/10.1.13/</sup> 31/07/2013 <sup>/10.1.14/</sup>

In order to corroborate the calibration frequency and accuracy defined by the manufacturer of the new weighbridge, the PP was requested to provide the supporting evidence. **CL 4 item 1 was raised.** The PP provided the required support<sup>/9.35/</sup>, the calibration frequency informed in MR version 2 is correct. **Item closed.**

As per the MR<sup>/4a/</sup>, the weighbridge Rice Lake IQ+355 (s/n 325078) the calibration frequency specified for this equipment is twice a year, however it was calibrated only once in the year 2012. The PP was requested to correct the measurements as per the VVS guidance. **CAR 5 item 2 was raised.** The PP provided the missing certificate corresponding to the second calibration performed in 2012<sup>/10.1.15/</sup>, it was verified that the Weighbridge 1 North entrance Rice Lake IQ+355 was calibrated on 25/07/2012<sup>/10.1.15/</sup> and on 24/01/2012<sup>/10.1.2/</sup>. Thus the calibration was performed in accordance with the committed calibration frequency defined by the provider<sup>/9.35/</sup>. Thus there is no gap in the calibration. **Item closed.**

Similarly the PP was requested to provide the evidence when the change was done. **CL 4 item 2 was raised.** The PP provided the required support<sup>/9.37/</sup>, the date of replacement of the equipment informed in MR version 2 is correct. **Item closed.**

Through the review of the documents (spreadsheets<sup>/8.2.c, 8.5.7.c, 8.6.2, 8.6.3/</sup> and the ER calculation spreadsheets<sup>/5h/</sup>) and the on-site inspection, it can be confirmed that the implementation of the monitoring system and procedures for this parameter comply with the monitoring system and procedures described in monitoring plan of the registered and revised PDD<sup>/1.1.3/</sup> and the applied methodology ACM0006 version 12.1.1.<sup>/3.3/</sup>.

Registered/ revised Monitoring Plan & Approved Methodology  Monitoring Report, onsite checks	Data/ Parameter	Description	Measured/ Calculated /Default	Source of data	Monitoring equipment	Measuring/ Reading/ Recording frequency	Calculation method (if applicable)	QA/QC procedures
<b>Requirement in the applicable methodology and relevant EB Documents</b>	FR <sub>i,m</sub>	Total mass of freight transported in freight transportation activity f in monitoring period m	Measured	Records by project participants or records by truck operators	N/A	Continuously	N/A	N/A
<b>Requirement in the registered and revised monitoring plan</b>	FR <sub>i,m</sub>	Total mass of freight transported in freight transportation activity f in monitoring period m.	Measured	Records by Project Participant.	Mix of sawdust and bark from off-site production sources brought by trucks to the Power Plant will be duly measured (weight) by proper and calibrated weighbridges when they enter the Plant.  The (wet) freight, measured directly by plant operators, will be adjusted for moisture content and converted into tonnes on dry biomass. Moisture content will be measured on-site using calibrated scales of Raw Material Analyst of the Quality Department.  Weighbridges, scales and all the equipment required for determining this parameter will receive periodic maintenance and calibration (if required), according to proper industry standards.	Data monitored continuously and aggregated as appropriate, to calculate emissions reductions.	N/A	Cross-check the measurements with an annual energy balance that is based on purchased quantities and stock changes
<b>Implementation of the project</b>	FR <sub>i,m</sub>	Total mass of freight transported in freight transportation activity f in monitoring period m.	Measured	Power plant's procurement department	Weighbridges	Continuously and aggregated as appropriate	N/A	Crosscheck with an energy balance based on purchased quantities and stock changes
<b>Conclusion on the compliance of the implementation with the monitoring plan &amp; applicable methodology.</b>	In compliance	In compliance	In compliance	In compliance	In compliance	In compliance	N/A	In compliance



**Parameter 7: Return trip road distance between the origin and destination of freight transportation activity  $f$  in monitoring period  $m$ . ( $D_{f,m}$ )**

The parameter  $D_{f,m}$  is required to calculate the project emissions due to transport of biomass to the project plant using option B defined by the tool to calculate “Project or leakage emissions from road transportation of freight” (Version 01.1.0)<sup>/3.6/</sup>.

The PP provided records of the return trip road distance between the origin (commune) and the destination (power plant) of the freight transportation activity in this monitoring period for years 2012 and 2013 in the spreadsheet “Project emissions road transportation freight.xlsx”<sup>/8.2/</sup>.

All information about biomass brought by trucks is saved in a database called ‘SCR’. During the site visit it was verified that the database lists of all biomass suppliers and distances between supplier and project site. It was also verified that that all suppliers are located within a radius of approximately 200 km around the power plant.

Every time a truck enters the mill complex, the following procedure is carried out:

- 1) The location where the biomass comes from is confirmed by checking the truck’s documentation
- 2) The load is weighted and recorded in the database
- 3) The information about the supplier is recorded in the database.
- 4) The type of biomass is recorded in the database (sawdust, bark, chips or shavings in this case)
- 5) The truck name plate is recorded in the database.

The return trip distance is finally multiplied by 2 to take into account the roundtrip. Since the trip road distances are provided by commune, the complete detail is in ref. 8.2 and in the ERs spreadsheet only the final value per year of  $D_{f,m} * FR_{f,m}$  is provided in the tabs “2012 Data” cell R78 and “2013 Data” cell R78.

The PP provided a spreadsheet containing distances between the project site and supply sources<sup>/8.2.b/</sup>. Regional roadmaps (<http://www.mapas.mop.cl/CARTAS%20CAMINERAS.htm>) were used to verify that the reported distances between suppliers and the project activity were consistent. The verification was performed by comparing a sample of the distances reported in spreadsheet<sup>/8.2.b/</sup> against to regional roadmaps<sup>/12.1/</sup>. The uncertainty of the estimation is low because the biomass supply sites are permanent sawmills placed in the nearby area.

In order to crosscheck the information with the original records, the PP was requested to provide dispatch orders/control tickets per truck (5 samples per month). **CL 7 item 2 was raised and closed.** The data of biomass source (commune) reported in files “DHM romana 2012 140813 ver3.xlsx” and “DHM romana 2013 140813 ver2.xlsx”<sup>/8.6.2-8.6.3/</sup> was reviewed against the control/dispatch tickets<sup>/8.13 & 8.14/</sup> no mistakes were found.

Through the review of the documents (spreadsheets<sup>/8.2.c, 8.6.2, 8.6.3/</sup> and the ER calculation spreadsheets<sup>/5h/</sup>), it can be confirmed that the implementation of the monitoring system and procedures for this parameter comply with the monitoring system and procedures described in monitoring plan of the registered and revised PDD<sup>/1, 1.3/</sup> and the applied methodology ACM0006 version 12.1.1.<sup>/3.3/</sup>.

Registered/revised Monitoring Plan & Approved Methodology  Monitoring Report, onsite checks	Data/Parameter	Description	Measured/Calculated/Default	Source of data	Monitoring equipment	Measuring/ Reading/ Recording frequency	Calculation method (if applicable)	QA/QC procedures
<b>Requirement in the applicable methodology and relevant EB Documents</b>	$D_{f,m}$	Return trip distance between the origin and destination of freight transportation activity f in monitoring period m	Measured	Records of vehicle operator or records by project participants	N/A	To be updated whenever the distance changes	Determined once for each freight transportation activity f for a reference trip using the vehicle odometer or any other appropriate sources (e.g. on-line sources)	N/A
<b>Requirement in the registered and revised monitoring plan</b>	$D_{f,m}$	Return trip road distance between the origin and destination of freight transportation activity f in monitoring period m.	Measured	Records by Project Participants in which are specified the total biomass residues purchased (monthly), from known locations with known distances to the plant.	N/A	The Project Participant will update whenever the road distance changes.	Distance will be determined once for each freight transportation activity f using road map, from each supply centre of biomass to the power plant and will be recorded in the Nueva Aldea Phase 1 Procurement Department IT system.  This parameter will be updated whenever the road distance changes. (as per "Measurement methods and procedures" row)	N/A
<b>Implementation of the project</b>	$D_{f,m}$	Return trip road distance between the origin and destination of freight transportation activity f in monitoring period m	Measured	Records by Project Participants in which are specified the total biomass residues purchased (monthly), from known locations with known distances to the plant.	N/A	Determined using road maps, the project participant update whenever the road distance changes	Based on the distance from the supplier location (commune) and the project location.	N/A
<b>Conclusion on the compliance of the implementation with the monitoring plan &amp; applicable methodology.</b>	In compliance	In compliance	In compliance	In compliance	N/A	In compliance	In compliance	N/A

**Parameter 9: Quantity of fuel type  $i$  combusted in process  $j$  during the year  $y$   $FC_{i, Project Plant, y}$**

The parameter is monitored to calculate the project emissions following equation 37 of ACM0006 version 12.1.1.<sup>/3.3/</sup> and equation 1 of the Tool to calculate project emissions<sup>/3.5/</sup>.

As per the PDD<sup>/1, 1.3/</sup>, this parameter is measured continuously. Fossil fuel consumption in the power boiler is measured with level transmitters for diesel and propane tanks, the monitoring equipment used is summarized in the following table and it corresponds to the same used in the previous monitoring period. During the site visit it was verified that Diesel and LPG are the only fossil fuels that are used in the boiler for start up or emergency situations.

Equipment	S/N
Diesel tank level transmitter TAG 461-LT-0460	6404010868
LPG tank level transmitter TAG N/A (not owned by the PP.)	N/A

During the site visit, a crosscheck (random) of the parameter  $FC_{project, plant}$  site was done, it was found that data corresponding to January 2012 reported in the ER excel file<sup>/5a/</sup> was not consistent with the supporting evidence. **CL 9 item 2 was raised.** The PP provided the full records corresponding to this parameter in the files named "TA05-PTE-FO-018 Consumo combustibles fósiles 2012 ver2.xlsx"<sup>/8.7.1.b/</sup> and "TA05-PTE-FO-018 Consumo combustibles fosiles 2012 ver3.xlsx"<sup>/8.7.1.c/</sup>, the data recorded in the mentioned files is used for the ER calculation<sup>/5d/</sup>. It was verified that data from the records<sup>/8.7.1.b/-8.7.1.c/</sup> is correctly reported in the revised ER excel<sup>/5e/</sup> file and the MR<sup>/4e/</sup>. **Item closed.**

During the monitoring period, the diesel used was 1,433.92 tons in 2012 and 246.8 tons in 2013. As it was discussed in section 3.1 of this report and assessed as **CL 11 previously raised and closed**, there was a fire that affected Nueva Aldea Plywood mill thus the power plant was not operational from 02/01/2012 until 08/01/2012 when it was restarted using diesel. Given the exceptional situation due to the fire the power plant operated only with diesel from 08/01/2012 until 14/01/2012, this situation lead to consume a higher amount of diesel in comparison with the normal operation. As it was verified the diesel consumption in 2012 was 1,433.92 tons, out of which 870.6 tons were consumed in just January. It was verified that based on the diesel and biomass consumption records it was verified the diesel consumed represent less than 80% of the total energy consumed in January 2012 and over the complete monitoring period.

Finally, it was verified that the values reported in the ER spreadsheet<sup>/5h/</sup> are consistent with the values reported in the Monitoring report<sup>/4i/</sup>.

As per the registered PDD, the diesel level transmitter (TAG 461LT0460) should be calibrated annually, while calibration of the gas transmitter is done by the gas supplier, because the PP does not have the control of that meter. The following table summarizes the information corresponding to the monitoring equipment under the PP's control:

Monitoring equipment	S/N	Type	Level	Calibration frequency requirement	Calibration date
461-LT-0460	6404010868	Level transmitter 264HCHRBESSA1 /E6/L1/I2/N6/C1	+/- 0.075% <sup>/9.17/</sup>	12 months <sup>/9.10/</sup>	07/06/2011 <sup>/10.3.1/</sup> 09/07/2012 <sup>/10.3.2/</sup> 15/01/2013 <sup>/10.3.3/</sup> 22/08/2013 <sup>/10.3.4/</sup>

It has been verified that the monitoring equipment is in compliance with the PDD<sup>/1, 1.3/</sup> in terms of accuracy<sup>/9.10/</sup>.

It was found that the diesel meter had a calibration gap from 07/06/2012 – 09/07/2012. **CAR 5 item 1 raised.** The PP acknowledge the gap and provided the revised calculation files<sup>/8.7.1.c/</sup> where an error equal to 0.295% following a conservative approach was applied to the whole month of June and July 2012.

It was found that the correction done in file ref. 8.7.1.c (June and July 2012) applies an error equal to 0.295%, which is the equivalent error (in liters) of the maximum error found in the delayed calibration<sup>/10.3.2/</sup>. Thus it has been verified that VVS paragraph 283b has been followed and that paragraph 284 is correctly applied. **Item closed.**

In order to assess the compliance with the QA/QC procedures established in the PDD it was verified that the fossil fuel records used for ER calculations is correct against the monthly reports available with details of the stock, consumption and entrance of supplies (based on invoices data)<sup>/8.7.4/</sup>.

Through the review of the documents (based on invoices from the fuel provider<sup>/8.7.4/</sup>, and the ER calculation spreadsheets<sup>/5h/</sup>) and the on-site inspection, it can be confirmed that the implementation of the monitoring system and procedures for this parameter is in compliance with the registered and revised PDD and the applied methodology ACM0006 version 12.1.1.<sup>/3.3/</sup> and Tool<sup>/3.5/</sup>. The table below summarizes the compliance of the implementation of the project activity against the requirements in “Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion” and the registered and revised PDD.

Registered/ revised Monitoring Plan & Approved Methodology	Data/ Parameter	Description	Measured/ Calculated /Default	Source of data	Monitoring equipment	Measuring/ Reading/ Recording frequency	Calculation method applicable)	QA/QC procedures (if
Monitoring Report, onsite checks								
<b>Requirement in the applicable methodology and relevant EB Documents</b>	$FC_{i,j,y}$	Quantity of fuel type i combusted in process j during the year y	Measured	Onsite measurements	Mass or volume meters.	Continuously	N/A	The consistency of metered fuel consumption quantities should be cross-checked by an annual energy balance that is based on purchased quantities and stock changes.  Where the purchased fuel invoices can be identified specifically for the CDM project, the metered fuel consumption quantities should also be cross-checked with available purchase invoices from the financial records.
<b>Requirement in the registered and revised monitoring plan</b>	$FC_{i, ProjectPlant,y}$	Quantity of fuel type i combusted in process j during the year y.	Measured	Onsite measurements	Mass or volume meters.	Continuously	N/A	The consistency of fuel consumption measurement should be cross-checked by an annual energy and mass balance based on purchased quantities and stock changes.  Where the purchased fuel invoices can be identified specifically for the CDM project, the metered fuel consumption quantities should also be cross-checked with available purchase invoices from the financial records.
<b>Implementation of the project</b>	$FC_{i, Projectplant,y}$	Mass or volume per year (ton/y or m <sup>3</sup> /y)	Measured	Onsite measurements	Mass or volume meters.	Continuously	N/A	Consistency of fuel consumption measurement cross- checked with an annual energy and mass balance based on purchased quantities and stock changes
<b>Conclusion on the compliance of the implementation with the monitoring plan &amp; applicable methodology.</b>	In compliance	In compliance	In compliance	In compliance	In compliance	In compliance	N/A	In compliance

# **Parameter 12: Project Emission Parameters: CH<sub>4</sub> emission factor for the combustion of biomass residues in the Project Plant (EF<sub>CH<sub>4</sub>,BR</sub>)**

According to the methodology ACM0006 version 012.1.1., the source of information for the parameter can be either on-site measurement or default IPCC values. As per the Monitoring Plan<sup>/1, 1.3/</sup> the parameter will be based on on-site measurements and “*will be determined by taking samples from the power boiler flue gases and performing a gas stack analysis using calibrated analyser in a specialized laboratory*”. The sampling will be “*at least quarterly, taking at least three samples per measurement.*”

Based on the ERs spreadsheet <sup>/5a/</sup> review, it was found that in the tabs “2012 Emissions” and “2013 Emissions”, only a “0” has been included. In order to assess the data the PP was requested to provide the full results of the analysis performed. **CL 10 was raised.**

In response the PP provided the files 8.11.1 - 8.11.9. where the results of the measurements (EF<sub>CH<sub>4</sub></sub>) are reported,. the following analysis reports were reviewed:

Date of the sampling	N° of samples	EF <sub>CH<sub>4</sub>,BR</sub> (ton ch4/GJ)
30/03/2012	5	0.000000
28/06/2012	5	0.000000
28/09/2012	5	0.000000
28/12/2012	5	0.000000
02/04/2013	6	0.000000
29/06/2013	6	0.000000
28/09/2013	6	0.000000
28/12/2013	6	0.000000

The reports<sup>/8.11.1 – 8.11.8/</sup> issued by the U.S. Forest Service, Rocky Mountain Research Station state that in each sampling process five samples were collected during each quarter of 2012 and six samples during each quarter of 2013 from Nueva Aldea power Plant, and details that “*The samples were collected from the exhaust stack through a sampling port at a distance from the stack wall and height to achieve a representative emissions sample. The samples were returned to the Missoula Fire Sciences Laboratory for chemical analysis using established methods, to measure the concentrations of CH<sub>4</sub>, CO, CO<sub>2</sub>, and light hydrocarbons (NMHC) in each sample canister. From these results the following emission factors were calculated using the standard mass balance technique (Hao et. al., 1996).*” This is in compliance with the applicable methodology and registered PDD. **Item closed.**

As per ACM0006 version 12.1.1. requirements, the PP set the conservative factor as 1.02<sup>/4e/</sup> which is correct, because as per the laboratory measurements<sup>/8.11.1. – 8.11.9/</sup> the standard deviation of the measurements taken was zero, thus as per ACM0006 version 12.1.1. table 5, the conservativeness factor for an uncertainty range less than 10% is 1.02.

As per the monitoring plan<sup>/1, 1.3/</sup> and the methodology<sup>/3.3/</sup>, the data should be crosschecked with IPCC values or previous monitoring. It was verified that in similar projects the same result was obtained in 2011-2013, additionally it was verified that as per a study conducted in 2006<sup>/8.11.12/</sup> it was found that “*The methane concentrations in the flue gases of power plants (0.55 ppm) were exceedingly low, even lower than clean air levels (~1.7 ppm to 2.2 ppm). Hence, the combustion process in power generation results in a net loss of methane from the combustion air used.*”, therefore the values measured are consistent with similar measurements.

According to the methodology ACM0006, version 12.1.1, it is indicated that EF<sub>CH<sub>4</sub>,BR</sub> is used in the following equation:

$$PE_{BR,y} = GWP_{CH_4} \cdot EF_{CH_4, BR} \cdot \sum_n BR_{PJ,n,y} \cdot NCV_{BR,n,y}$$

Where:

- $PE_{BR,y}$  : Emissions from the combustion of biomass residues during the year y.
- $GWP_{CH_4}$ : Global Warming Potential of methane valid for the commitment period
- $EF_{CH_4, BR}$ :  $CH_4$  emission factor for the combustion of biomass in the project plant.
- $BR_{PJ,n,y}$  : Quantity of biomass residues of category n used in the CDM project activity in year y
- $NCV_{BR,n,y}$  : Net calorific value of the biomass residue of category n in year y.

As per the ER spreadsheet version 1<sup>/5a/</sup> the default global warming potential used for the whole monitoring period (01/01/2012 – 31/12/2013) is 21 tCO<sub>2</sub>/tCH<sub>4</sub>. As per the PDD <sup>/1/</sup> and the ACM0006 version 12.1.1.<sup>/3,3/</sup>, the methane global warming potential is a default value of 21 tCO<sub>2</sub>/tCH<sub>4</sub> and should be updated as per any future COP/MOP.

The EB 69 Annex 3 indicates that “All emission reductions and removals achieved by CDM project activities and PoAs in the second commitment period of the Kyoto Protocol shall be calculated using the global warming potentials (GWPs) adopted by the Conference of the Parties serving as the meeting of the Parties at its seventh session, in accordance with decision 4/CMP.7. This requirement shall apply from 1 January 2013, notwithstanding any GWPs stated to be applicable in the relevant procedures, standards, guidance, approved baseline and monitoring methodologies, methodological tools and other rules being used in relation to that project activity or PoA.” **CAR 16 was raised.**

The updated ER spreadsheet<sup>/5b/</sup> was reviewed and it was found that tab “2013 Emissions”, cells E40:G40 and E52:G52 have been correctly modified from 21 tCO<sub>2</sub>e/tCH<sub>4</sub> to 25 tCO<sub>2</sub>e/tCH<sub>4</sub>, which is in line with EB69 Annex 3.

Therefore for the period 01/01/2012-31/12/2012 the methane global warming potential used is 21 tCO<sub>2</sub>e/tCH<sub>4</sub> and for the period 01/01/2013-31/12/2013, it is 25 tCO<sub>2</sub>e/tCH<sub>4</sub>.

It was verified as well that the updated MR<sup>/4g – 4h/</sup> reports correctly the GWP for the first and second commitment period. **CAR 16 closed.**

Registered/revised Monitoring Plan & Approved Methodology	Data/Parameter	Description	Measured/Calculated /Default	Source of data	Monitoring equipment	Measuring/Recording/Recording frequency	Calculation method (if applicable)	QA/QC procedures
Monitoring Report, onsite checks								
<b>Requirement in the applicable methodology and relevant EB Documents</b>	EF <sub>BR,n,y</sub>	EF <sub>BR,n,y</sub> = CH4 emission factor for uncontrolled burning of the biomass residues category n during the year y (tCH4/GJ)	Measured / Default	Conduct measurements or use reference default values	N/A	At least quarterly, taking at least three samples per measurement	The CH4 emission factor may be determined based on a stack gas analysis using calibrated analyzers	Check consistency of measurements and local/national data with default values by the IPCC. If the values differ significantly from IPCC default values, possibly collect additional information or conduct measurements
<b>Requirement in the registered and revised monitoring plan</b>	EF <sub>BR,n,y</sub>	EF <sub>BR,n,y</sub> = CH4 emission factor for uncontrolled burning of the biomass residues category n during the year y (tCH4/GJ)	Measured	On-site measurements	N/A	At least quarterly, taking at least three samples per measurement	The CH4 emission factor will be determined by taking samples from the power boiler flue gases and performing a gas stack analysis using calibrated analyzers in a specialized laboratory.	Cross-check measurements performed with measurements obtained in previous monitoring periods, relevant data sources (e.g. values in the literature, values used in the national GHG inventory) and default IPCC. If the measurements results differ significantly from previous measurements or other relevant data source, additional measurements will be conducted.
<b>Implementation of the project</b>	EF <sub>BR,n,y</sub>	EF <sub>BR,n,y</sub> = CH4 emission factor for uncontrolled burning of the biomass residues category n during the year y (tCH4/GJ)	Measured	On-site measurements	N/A	At least quarterly, taking at least three samples per measurement	The CH4 emission factor is determined by taking samples from the power boiler flue gases and performing a gas stack analysis using calibrated analyzers in a specialized laboratory.	Cross-check with measurements obtained in previous monitoring periods in similar projects.
<b>Conclusion on the compliance of the implementation with the monitoring plan &amp; applicable methodology.</b>	In compliance	In compliance	In compliance	In compliance	N/A	In compliance	In compliance	In compliance



### **Parameter 13: Baseline process heat generation in year y ( $HC_{BL,y}$ )**

This parameter represents the amount of heat generated in the power boiler that would be generated in the baseline. As per ACM0006 version 12.1.1. the heat quantities are calculated based on measurements of steam flow, pressure and temperature over each process line. There are three meters for each process line of steam (steam flow, temperature and pressure) and pressure and temperature meters in the feed water line. The turbine has four steam extractions:

- High pressure line 85 barg/485°C: Soot blower
- Medium pressure line 19.0 barg/220°C: Plywood mill
- Medium pressure line 11.5 barg/210°C: Saw mill
- Low pressure line 5.5 barg/165°C: Miscellaneous (Deaerator, AASA, Boiler, Main line)

The information related to the steam generated by the boiler is monitored continuously and monthly gathered by the power plant manager. For each steam line, pressure and temperature are used to calculate the enthalpy (h) of the steam and boiler feed water. This allows calculating the net heat energy released by the process steam through the following formula:

$$\text{Heat energy} = \text{Steam flow} * (h_{\text{steam}}(\text{pressure, temp.}) - h_{\text{feed water}}(\text{pressure, temp.}))$$

Based on temperature and pressure, the enthalpy can be obtained from steam tables available on technical books, software or trustworthy sources in internet. All enthalpies were checked and verified, no errors were found; they are reported in the ER calculation spreadsheet, sheet "2012 emissions" & "2013 emissions", table 1.2. for all the temperature/pressure conditions of the steam lines. Enthalpy of the feed water is reported as well. Then, the total heat generated from firing biomass in the power plant during the monitoring period, is calculated by adding up all the heat released from the four steam lines.

The total heat is calculated in the ER spreadsheet, tab "2012 emissions" & "2013 emissions", cell D126. The steam consumption is reported in the ER spreadsheet for each month and process line, in tabs "2012 data" and "2013 data", rows 29 to 32 (in terms of tonnes per month).

Regarding the equipment involved in the monitoring based on the reviewed information, it was verified that all meters installed are in compliance with the registered monitoring plan in terms of accuracy and calibration frequency. The summary of the equipments and information verified is available in the following table.

As per the MR some meters were replaced during the MP, in order to verify the information, the PP was requested to provide the supporting evidence that record the dates when each equipment was changed and technical information of the new devices (accuracy and manufacturer calibration frequency). **CL 4 item 2 was raised.** The PP provided the required support<sup>/10.19.4/</sup> for the pressure transmitter tag 465-PIT-9002A, it was verified that the date of replacement of the equipment informed in MR version 2 is correct. Based on the technical specifications of the new meter<sup>/9.41/</sup> it was verified that the new device is equal (same brand and model) thus it has the same accuracy than the previous one **Item closed.**

About the calibration, it should be performed at the frequency specified by the manufacture as requirement of the VVS, version 7.0, Paragraph 287. After the review of the calibration certificates and maintenance practices associated to the monitoring equipment, it was found that some meters had delayed calibrations. **CAR 5 item 1 was raised.** The PP acknowledges the delayed calibrations of the following devices: 463-FT-0402, 463-PT-0403, 465-PIT-9000-A, 465-PIT-9000-B, 465-PIT-9001-A, 465-PIT-9001-B. In compliance with VVS version 7 paragraphs 283a&b, the PP applied in every case the correction in the measurement considering the highest value between the error found in the delayed calibration and the equipment accuracy.

In the case of the steam meter 463-FT-0402, the correction was applied in the Excel file<sup>/8.10.1.c/</sup> that contains the daily steam records. The correction was done from 07/06/2012 until 09/07/2012. Later it was verified that the sum of the daily values was transcript into "integradores"<sup>/8.10.2.c/</sup>. The correction was done in a conservative way because the higher error (0.5%) between the error found at the calibration and the accuracy was applied.

In the case of the pressure meters (463-PT-0403, 465-PIT-9000-A, 465-PIT-9000-B, 465-PIT-9001-A, 465-PIT-9001-B) the PP applied a correction in the value of the pressure used to determine the steam enthalpy<sup>/5c/</sup>. The correction applied was done in a conservative way, it was verified that for each of the related equipments the higher error between the ones found at the calibration and the accuracy was applied. It was verified that MR version 7<sup>/4g/</sup> reports correctly in section D.2. the meters that had a delayed calibration.

Thus it is confirmed that the calculation are in compliance with VVS version 7 paragraph 284. **Item closed.**

Monitoring equipment	S/N	Type	Accuracy	Calibration frequency requirement	Calibration date	Are there delays in calibration?
463-PT-0106	6403015456	Pressure transmitter feed water	+/- 0.075% <sup>/9.20/</sup>	18 months <sup>/9.12/</sup>	07/12/2010 <sup>/10.7.1/</sup> 07/01/2012 <sup>/10.7.2/</sup> 10/07/2012 <sup>/10.7.3/</sup> 20/08/2013 <sup>/10.7.4/</sup>	No
463-TT-0110	458205	Temperature transmitter feed water	+/- 0.10 °C <sup>/9.22/</sup>	5 years <sup>/9.13/</sup>	07/12/2010 <sup>/10.9.1/</sup> 09/07/2012 <sup>/10.9.2/</sup> 23/08/2013 <sup>/10.9.3/</sup>	No
463-FT-0402	6403015454	Steam flow meter 85 bar (soot blower)	+/- 0.075% <sup>/9.20/</sup>	18 months <sup>/9.12/</sup>	07/12/2010 <sup>/10.6.1/</sup> 09/07/2012 <sup>/10.6.2/</sup> 20/08/2013 <sup>/10.6.3/</sup>	Yes, between 07/06/2012 and 09/07/2012. Data corrected as per VVS para 283.
463-PT-0403	6403015460	Pressure transmitter 85 bar (soot blower)	+/- 0.075% <sup>/9.20/</sup>	18 months <sup>/9.12/</sup>	07/12/2010 <sup>/10.8.1/</sup> 09/07/2012 <sup>/10.8.2/</sup> 21/08/2013 <sup>/10.8.3/</sup>	Yes, between 07/06/2012 and 09/07/2012. Data corrected as per VVS para 283.
463-TT-0406	458156	Temperature transmitter 85 bar (soot blower)	+/- 0.10 °C <sup>/9.22/</sup>	5 years <sup>/9.13/</sup>	08/12/2010 <sup>/10.10.1/</sup> 13/07/2012 <sup>/10.10.2/</sup> 22/08/2013 <sup>/10.10.3/</sup>	No
465-FT-9027	8809	Steam flow meter 19 bar (plywood mill)	+/- 0.025% <sup>/9.21/</sup>	5 years <sup>/9.13/</sup>	09/12/2010 <sup>/10.14.1/</sup> 11/07/2012 <sup>/10.14.2/</sup> 22/08/2013 <sup>/10.14.3/</sup>	No
565-FT-0965	6406022860	Steam flow meter 19 bar (pulp mill)	+/- 0.075% <sup>/9.20/</sup>	18 months <sup>/9.12/</sup>	24/03/2011 <sup>/10.29.1/</sup> 10/07/2012 <sup>/10.29.2/</sup> 22/08/2013 <sup>/10.29.3/</sup>	No
465-PIT-9000-A	6404008677	Pressure transmitter 19 bar (main line)	+/- 0.075% <sup>/9.20/</sup>	18 months <sup>/9.12/</sup>	10/12/2010 <sup>/10.15.1/</sup> 09/07/2012 <sup>/10.15.2/</sup> 20/08/2013 <sup>/10.15.3/</sup>	Yes, between 10/06/2012 and 09/07/2012. Data corrected as per VVS para 283.
465-PIT-9000-B	6404008676	Pressure transmitter 19 bar (main line)	+/- 0.075% <sup>/9.20/</sup>	18 months <sup>/9.12/</sup>	10/12/2010 <sup>/10.16.1/</sup> 09/07/2012 <sup>/10.16.2/</sup> 20/08/2013 <sup>/10.16.3/</sup>	Yes, between 10/06/2012 and 09/07/2012. Data corrected as per VVS para 283.
465-TT-9028	456397	Temperature transmitter 19 bar (pulp mill)	+/- 0.10 °C <sup>/9.22/</sup>	5 years <sup>/9.13/</sup>	09/12/2010 <sup>/10.24.1/</sup> 07/07/2012 <sup>/10.24.2/</sup> 22/08/2013 <sup>/10.24.3/</sup>	No
465-FT-9025	8808	Steam flow meter 11.5 bar (AASA)	+/- 0.025% <sup>/9.21/</sup>	5 years <sup>/9.13/</sup>	09/12/2010 <sup>/10.13.1/</sup> 11/07/2012 <sup>/10.13.2/</sup> 22/08/2013 <sup>/10.13.3/</sup>	No
465-PIT-9001-A	6404008680	Pressure transmitter 11.5 bar (main line)	+/- 0.075% <sup>/9.20/</sup>	18 months <sup>/9.12/</sup>	09/12/2010 <sup>/10.17.1/</sup> 10/07/2012 <sup>/10.17.2/</sup> 21/08/2013 <sup>/10.17.3/</sup>	Yes, between 09/06/2012 and 10/07/2012. Data corrected as per VVS para 283.

465-PIT-9001-B	6404008679	Pressure transmitter 11.5 bar (operated until 04/01/2014)	+/- 0.075% /9.20/	18 months /9.12/	09/12/2010 /10.18.1/ 10/07/2012 /10.18.2/ 22/08/2013 /10.18.3/	Yes, between 09/06/2012 and 10/07/2012. Data corrected as per VVS para 283.
	6404022864	Pressure transmitter 11.5 bar (from 04/01/2014)	+/- 0.075% /9.41/	18 months /9.41/	01/04/2014 /10.18.4/ This is not listed in the MR because it is out of the MP.	No
465-TT-9026	456304	Temperature transmitter 11.5 bar	+/- 0.10 °C /9.22/	5 years /9.13/	11/12/2010 /10.23.1b/ 07/07/2012 /10.23.2/ 21/08/2013 /10.23.3/	No
465-FT-9019	34310	Steam flow Meter 5.5 bar (AASA)	+/- 0.025% /9.21/	5 years /9.13/	09/12/2010 /10.11.1/ 11/07/2012 /10.11.2/ 23/08/2013 /10.11.3/	No
465-FT-9023	24439	Steam flow meter 5.5 bar (Boiler)	+/- 0.025% /9.21/	5 years /9.13/	10/12/2010 /10.12.1/ 10/07/2012 /10.12.2/ 23/08/2013 /10.12.3/	No
462-FT-9150	6404006181	Steam flow meter 5.5 bar (Deaerator)	+/- 0.075 /9.20/	18 months /9.12/	08/12/2010 /10.4.1/ 07/01/2012 /10.4.2/ 02/07/2012 /10.4.3/ 20/08/2013 /10.4.4/	No
465-PIT-9002-A	6404008685	Pressure transmitter 5.5 bar (main line) (operated until 20/08/2013)	+/- 0.075 /9.20/	18 months /9.12/	09/12/2010 /10.19.1/ 07/01/2012 /10.19.2/ 10/07/2012 /10.19.3/	No
	6408023636	Pressure Transmitter 5.5 bar (Main line) (from 20/08/2013)	+/- 0.075% /9.20- 9.41/	18 months /9.41/	20/08/2013 /10.19.4/	No
465-PIT-9002-B	6404027440	Pressure transmitter 5.5 bar (main line)	+/- 0.075% /9.20/	18 months /9.12/	10/12/2010 /10.20.1/ 07/01/2012 /10.20.2/ 12/07/2012 /10.20.3/ 22/08/2013 /10.20.4/	Yes, from 09/06/2012 – 10/07/2012. Data corrected as per VVS para 283.
465-PIT-9002-C	6404008681	Pressure transmitter 5.5 bar (main line)	+/- 0.075% /9.20/	18 months /9.12/	10/12/2010 /10.21.1/ 07/01/2012 /10.21.2/ 12/07/2012 /10.21.3/ 20/08/2013 /10.21.4/	No
465-TT-9024	456395	Temperature transmitter 5.5 bar (Main line)	+/- 0.10 °C /9.22/	5 years /9.13/	11/12/2010 /10.22.1/ 07/07/2012 /10.22.2/ 22/08/2013 /10.22.3/	No

**Parameter 14: Gross quantity of electricity generated in all power plants which are located at the project site and included in the project boundary in year y (MWh) ( $EL_{PJ, gross, y}$ )**

According to the methodology ACM0006 version 12.1.1., the gross electricity of electricity generation is involved in the baseline emissions. The parameter is measured continuously.

As per the registered and revised PDD<sup>/1, 1.3/</sup>, this parameter is measured continuously using electric meter TAG 468-PM-008. The monitoring equipment used is summarized in the following table:

Monitoring equipment	Brand	S/N	Dates
468-PM-008 Energy Meter Switchgear (1-8)	Power Measurement ION 7330 V277	PB-0401A161-11	Operative <u>until</u> 22/08/2013
	Power Measurement ION 7330 V277 C/ETH	PB-1210A067-11	Operative <u>from</u> 22/08/2013

In the ERs spreadsheet<sup>/5a/</sup> the monthly information of the parameter, for years 2012 and 2013, was detailed; but no supporting evidence was available in order to confirm that the reported values are correct. **CL 12 was raised.** The PP provided the updated ER excel file<sup>/5b/</sup> and the energy records obtained from the corresponding meters every 15 minutes<sup>/8.9.1b & 8.9.2b/</sup>, it was verified that the information used for ER calculation<sup>/5b/</sup> and MR<sup>/4b/</sup> is correct. Additionally as part of the QA/QC procedure the information was crosschecked against the corresponding invoices (when available)<sup>/12.2, 12.3 & 12.4/</sup> and the balance<sup>/12.5/</sup> performed by the PP. The information was found correct. **CL 12 was closed.**

Regarding the equipments involved with the monitoring, two meters (s/n PB-0401A161-11 and s/n PB-1210A067-11) were used during this monitoring period. As per the registered PDD<sup>/1/</sup>, the power meters accuracy should be +/-0.3%, however, as per MR version 1<sup>/5a/</sup>, the accuracy of these meters is +/- 0.5%. PP was requested to clarify how this is in compliance with the registered PDD. **CL 3 item 12 was raised.** Similarly in order to verify the information of the new meter (PB-1210A067-11). **CL 4 item 2 was raised.**

The PP provided the provider report including information on when the electricity meter was replaced<sup>/9.36/</sup> and the technical specifications of the new meter(s/n PB-1210A067-11)<sup>/9.38 - 9.39/</sup>. It was verified that the electricity meter changed (reported in sections D.2 and B.1 of MR version 2) is correct against the report issued by the provider<sup>/9.36/</sup>. It was verified against the technical specifications<sup>/9.39/</sup> that the new meter accuracy is +/-0.3%, which is in compliance with the accuracy requirement of the registered monitoring plan<sup>/1/</sup>. Finally, it was verified that the calibration date of the new meter (PB-1210A067-11) informed in MR<sup>/4c/</sup> is correct against the calibrations records<sup>/9.40/</sup> issued by the manufacturer. **CL 4 item 2 was closed.**

Regarding the meters accuracy, the PP acknowledged the non-compliance of the electricity meter (s/n PB-0401A161-11) accuracy for the period 01/01/2012 until 22/08/2013. From 22/08/2013, the new meter (s/n PB-1210A067-11) installed has the accuracy required by the monitoring plan.

As per registered PDD<sup>/1/</sup> the committed accuracy was +/- 0.3%, while the accuracy of the meter (s/n PB-0401A161-11) in use during 01/01/2012 - 22/08/2013 was +/- 0.5%. It was verified that from 22/08/2013 onwards, the Monitoring Plan<sup>/4h/</sup> implemented was in compliance with the registered PDD<sup>/1/</sup> because the accuracy of the meters is the same than the committed in the MP. As it was previously described in section 3.2.3. of this report, in order to overcome this situation, the PP presented a revised PDD<sup>/1.3/</sup> where the Monitoring Plan has been corrected in order to reflect both meters involved. It was verified that this change to the monitoring plan is in compliance with PS version 7, appendix 1, paragraph 4, thus it does not require prior approval and is presented together with the verification.

In compliance with PS version 7, appendix 1, paragraph 4a, the PP states in the revised MP<sup>/1.3/</sup> that measurements have to be corrected in those cases where the accuracy of the installed equipment is lower than the one committed in the PDD. Following the PS guidance, the PP applied a correction of 0.2%, equivalent to the difference between the committed accuracy (0.3%) and the real one (0.5%), over the parameter. The ER spreadsheet version 5<sup>/5e/</sup> reports the monitored data in tabs "2012 Data" and "2013 Data". Given that this parameter is involved in baseline emissions, following a conservative approach the records of the parameter were diminished by 0.2%. The application of the cited correction

is done in tabs “2012 Emissions” and “2013 Emissions”, cell E99, the correction was done for the whole year 2012 and from January until August for the year 2013..

The correction applied followed correctly the conservative approach required by PS version 7, appendix 1, paragraph 4, finally it was verified that this change to the monitoring plan does not require prior approval by the board. **CL 3 item 12 was closed.**

Regarding equipments calibration, there are no specific calibration requirements for the power meters in the applied methodology ACM0006 version 12.1.1, as per monitoring plan<sup>/1, 1.3/</sup> calibrations will be done as per manufacturer specifications, which is correct as per VVS version 7.0 Para 287. According to the manufacturer<sup>/9.9/</sup>, meters have a calibration frequency of 7 years, but since these meters cannot be altered, calibrations are actually accuracy checks; Power meters underwent an accuracy check on 12/12/2010<sup>/10.33/</sup>, and the provider of the meters extended the life of the equipment until the end of 2013, for this reason the PP replaced the meter on 22/08/2013 for new equipments<sup>/9.36/</sup> which were installed at the time that the site visit was conducted. During the site visit by the interviews conducted, it was verified that the personnel in charge has knowledge about the calibration and maintenance procedure of the equipment.

The following table summarizes the meters characteristics and calibrations.

Monitoring equipment	S/N	Type	Accuracy	Calibration frequency requirement	Calibration date
468-PM-008	PB-0401A161-11	Energy meter switchgear 1-8 Power Measurement ION 7330 V277 (operated until 22/08/2013)	+/- 0.5% <sup>/9.18/</sup>	7 years <sup>/9.9/</sup>	12/12/2010 <sup>/10.33/*</sup>
	PB-1210A067-11	Energy Meter Switchgear (1-8) Power Measurement ION 7330 V277 C/ETH (in operation from 22/08/2013)	+/- 0.3% <sup>/9.39/</sup>	7 years <sup>/9.9/</sup>	05/10/2012 <sup>/9.40/</sup>

\*: corresponds to the date of the last verification of the meter.

Through the review of the documents (energy records<sup>/8.9.1b, 8.9.2b, 12.2, 12.3 & 12.4</sup> and ER calculation spreadsheets<sup>/5h/</sup>) and the on-site inspection, it can be confirmed that the implementation of the monitoring system and procedures for this parameter comply with the monitoring system and procedures described in the MP of the revised PDD<sup>/1.3/</sup> and the applied methodology ACM0006 version 12.1.1<sup>/3.3/</sup>. The table below summarizes the compliance of the implementation of the project activity against the requirements in the applied methodology and the MP.

Registered/revised Monitoring Plan & Approved Methodology  Monitoring Report, onsite checks	Data/Parameter	Description	Measured/Calculated/Default	Source data	Monitoring equipment	Measuring/Recording frequency	Calculation method (if applicable)	QA/QC procedures
<b>Requirement in the applicable methodology and EB Documents</b>	EL <sub>PJ,gross,y</sub>	Gross quantity of electricity generated in all power plants which are located at the project site and included in the project boundary in year y (MWh)	Measured	On-site measurements	Calibrated electricity meters	Data monitored continuously and aggregated as appropriate	N/A	The consistency of metered electricity generation should be cross-checked with receipts from electricity sales (if available) and the quantity of fuels fired (e.g. check whether the electricity generation divided by the quantity of fuels fired results in a reasonable efficiency that is comparable to previous years)
<b>Requirement in the revised monitoring plan</b>	EL <sub>PJ</sub>	Gross quantity of electricity generated in all power plants which are located at the project site and included in the project boundary in year y (MWh)	Measured	On-site measurements	Electric meters, accuracy level +/- 0.3%	Continuously	N/A	The consistency of metered electricity generation will be crosschecked with receipts from electricity sales (if available), and the total amount of fuels fired (e.g. check whether the electricity generation divided by the quantity of fuels fired results in a reasonable efficiency that is comparable to previous years).
<b>Implementation of the project</b>	EL <sub>PJ</sub>	Gross quantity of electricity generated in all power plants which are located at the project site and included in the project boundary in year y (MWh)	Measured	On-site measurements	Electric meters, accuracy level +/- 0.3% and +/- 0.5 %	Continuously Energy values are recorded every 15 minutes and aggregated monthly.	N/A	Electricity meters received periodic maintenance and calibration as per instructed by the equipment manufacturer. The consistency of metered electricity generation was crosschecked with receipts from electricity sales and purchases from the grid
<b>Conclusion on the compliance of the implementation with the monitoring plan &amp; applicable methodology.</b>	In compliance	In compliance	In compliance	In compliance	During a period of time of this MP electricity meters used had accuracy lower than the committed in PDD. This issue was properly addressed as per PS version 7 appendix 1.  In compliance	In compliance	N/A	In compliance



**Parameter 15: Project electricity imports from the grid in year y (MWh) ( $EL_{PJ,imp,y}$ )**

According to the methodology ACM0006 version 12.1.1., electricity imports is involved in the baseline and project emissions. The parameter is measured continuously. It was found that the same issues noticed for  $EL_{PJ,gross,y}$  were found for  $EL_{PJ,imp,y}$  and  $EL_{PJ,aux,y}$  (Parameter 16 covered in next section).

As per the PDD<sup>/1, 1.3/</sup>, this parameter is measured continuously using electric meter TAG 468-PM-003 and it corresponds to the electricity imported from the grid. The monitoring equipment used is summarized in the following table:

Monitoring equipment	Brand	S/N	Dates
468-PM-003 Energy Meter Switchgear (1-3)	Power Measurement ION 7330 V277	PB-0607A312-11	Operative <u>until</u> 22/08/2013
	Power Measurement ION 7330 V277 C/ETH	PB-1210A504-11	Operative <u>from</u> 22/08/2013

In the ERs spreadsheet<sup>/5a/</sup>, the monthly information of the parameter, for years 2012 and 2013, is detailed; but no supporting evidence was available in order to confirm that the reported values are correct. **CL 12 was raised.** The PP provided the updated ER excel file<sup>/5b/</sup> and the energy records obtained from the corresponding meters every 15 minutes<sup>/8.9.1b & 8.9.2b/</sup>, it was verified that the information used for ER calculation<sup>/5b/</sup> and MR<sup>/4b/</sup> is correct. Additionally as part of the QA/QC procedure the information was crosschecked against the corresponding invoices (when available)<sup>/12.2, 12.3 & 12.4/</sup> and the balance<sup>/12.5/</sup> performed by the PP.. The information was found correct. **CL 12 was closed.**

During this monitoring period, two meters (s/n PB-0607A312-11 and s/n PB-1210A504-11) were involved in the monitoring. As per the registered PDD<sup>/1/</sup>, the power meters accuracy should be +/- 0.3%, however in MR version 1<sup>/5a/</sup> the accuracy of the meters was indicated as +/- 0.5%. The PP was requested to clarify how this is in compliance with the registered PDD. **CL 3 item 12 was raised.** Similarly in order to verify the information of the new meter **CL 4 item 2 was raised.**

The PP provided the provider report when the electricity meter was replaced<sup>/9.36/</sup> and the technical specifications of the new meter (s/n PB-1210A504-11)<sup>/9.38 - 9.39/</sup>. It was verified that the electricity meter changed (reported in sections D.2 and B.1 of MR version 2) is correct against the report issued by the provider<sup>/9.36/</sup>. It was verified against the technical specifications<sup>/9.39/</sup> that the new meter accuracy is +/- 0.3%, which is in compliance with the accuracy required in the registered monitoring plan<sup>/1/</sup>. Finally it was verified that the calibration date of the new meter informed in MR<sup>/4c/</sup> is correct against the calibrations records<sup>/9.40/</sup> issued by the manufacturer. **CL 4 item 2 was closed.**

Regarding the meters accuracy, the PP acknowledged that there was a non-compliance for the electricity meter (s/n PB-0607A312-11) accuracy for the period 01/01/2012 until 22/08/2013; although from 22/08/2013 the new meter (s/n PB-1210A504-11) installed, was in compliance as it has the accuracy required by the registered monitoring plan.

As per the registered PDD, the committed accuracy was +/- 0.3%, while the accuracy of meter (s/n PB-0607A312-11) in operation during 01/01/2012 - 22/08/2013 was +/- 0.5%. This situation is equivalent to the previous one described in  $EL_{PJ,gross,y}$ . In order to overcome this situation, the PP presented the corrected PDD<sup>/1.3/</sup> where the Monitoring Plan has been corrected in order to reflect both meters involved. It was verified that this change to the monitoring plan is in compliance with PS version 7, appendix 1, paragraph 4, thus it does not require prior approval and is presented together with the verification.

In compliance with PS version 7, appendix 1, paragraph 4a, the PP states in the monitoring plan of the revised PDD<sup>/1.3/</sup> that measurements have to be corrected in those cases where the accuracy of the installed equipment is lower than the one committed in the PDD. Following the PS guidance the PP applied a correction of 0.2%, equivalent to the difference between the committed accuracy (0.3%) and the real one (0.5%), over the parameter. The ER spreadsheet version 5<sup>/5e/</sup> reports the monitored data in tabs "2012 Data" and "2013 Data". Given that this parameter is involved in baseline emissions, following a conservative approach the records of the parameter were increased in 0.2%. The application of the



cited correction is done in tabs “2012 Emissions” and “2013 Emissions”, cell E216, the correction was done for the whole year 2012 and from January until August for 2013.

The correction applied followed correctly the conservative approach required by PS version 7, appendix 1, paragraph 4, finally it was verified that this deviation does not require prior approval by the board. **CL 3 item 12 was closed.**

Regarding equipments calibration, there are no specific calibration requirements for the power meters in the applied methodology ACM0006 version 12.1.1, however as per monitoring plan<sup>/1/</sup> calibrations will be done as per manufacturer specifications, which is correct as per VVS version 7.0 Para 287. According to the manufacturer<sup>/9.9/</sup>, for both meters, the calibration frequency validity is 7 years, but since these meters cannot be altered, calibrations are actually accuracy checks; All power meters underwent an accuracy check on 12/12/2010<sup>/10.33/</sup>, and the provider of the meters extended the life of the equipment until the end 2013, for this reason the PP replaced the meter on 22/08/2013 with new equipments<sup>/9.36/</sup> which were installed at the time that the site visit was conducted. During the site visit it was verified that the personnel in charge has knowledge about the calibration and maintenance procedure of the equipment.

The following table summarizes the meters characteristics and calibrations.

Monitoring equipment	S/N	Type	Accuracy	Calibration frequency requirement	Calibration date
468-PM-003	PB-0607A312-11	Energy meter switchgear 1-3 Measurement ION 7330 V277. CAR raised (operated until 22/08/2013)	+/- 0.5% <sup>/9.18/</sup>	7 years <sup>/9.9/</sup>	12/12/2010 <sup>/10.33/</sup>
	PB-1210A504-11	Energy meter switchgear 1-3 Measurement ION 7330 V277 C/ETH (in operation from 22/08/2013)	+/- 0.3% <sup>/9.39/</sup>	7 years <sup>/9.9/</sup>	01/11/2012 <sup>/9.40/</sup>

\*: corresponds to the date of the last verification of the meter done by the equipment supplier (Schneider electric).

Through the review of the documents (energy records<sup>/8.9.1b, 8.9.2b, 12.2, 12.3 & 12.4</sup> and ER calculation spreadsheets<sup>/5h/</sup>) and the on-site inspection, it can be confirmed that the implementation of the monitoring system and procedures for this parameter comply with the monitoring system and procedures described in the MP in the revised PDD<sup>/1.3/</sup> and the applied methodology ACM0006 version 12.1.1<sup>/3.3/</sup>. The table below summarizes the compliance of the implementation of the project activity against the requirements in the applied methodology and the MP.

Registered/ revised Monitoring Plan & Approved Methodology  Monitoring Report, onsite checks	Data/Para meter	Description	Measured/Cal culated /Default	Source data	of Monitoring equipment	Measuring/Read ing/ Recording frequency	Calculation method (if applicable)	QA/QC procedures
<b>Requirement in the applicable methodology and EB Documents</b>	EL <sub>PJ,imp,y</sub>	Project electricity imports from the grid in year y (MWh)	Measured	On-site measurements	Calibrated electricity meters	Data monitored continuously and aggregated as appropriate	N/A	The consistency of metered electricity generation should be cross-checked with receipts from electricity purchases
<b>Requirement in the revised monitoring plan</b>	EL <sub>PJ,imp,y</sub>	Project electricity imports from the grid in year y (MWh)	Measured	On-site measurements	Electric meters, accuracy level +/- 0.3%	Continuously	N/A	The consistency of metered electricity imports will be crosschecked with receipts from electricity purchases.
<b>Implementation of the project</b>	EL <sub>PJ,imp,y</sub>	Project electricity imports from the grid in year y (MWh)	Measured	On-site measurements	Electric meters, accuracy level +/- 0.3% and +/- 0.5 %	Continuously. Energy values are recorded every 15 minutes and aggregated monthly.	N/A	Electricity meters received periodic maintenance and calibration as per instructed by the equipment manufacturer. The consistency of metered electricity generation was crosschecked with receipts from electricity sales and purchases from the grid
<b>Conclusion on the compliance of the implementation with the monitoring plan &amp; applicable methodology.</b>	In compliance	In compliance	In compliance	In compliance	During a period of time of this MP electricity meters used had accuracy lower than the committed in PDD. This issue was properly addressed as per PS version 7 appendix 1.  In compliance	In compliance	N/A	In compliance

**Parameter 16: Total auxiliary electricity consumption required for the operation of the power plants at the project site in year y (MWh)**

According to the methodology ACM0006 version 12.1.1., the gross electricity from electricity generation is involved in the baseline emissions. The parameter is obtained through measurements for the energy consumed by the power plant and based on consumption for equipments linked to the biomass preparation.

Regarding measured values, as per the PDD<sup>/1, 1.3/</sup>, they are measured continuously using electric meter TAG 468-PM-006. The monitoring equipment used is summarized in the following table:

Monitoring equipment	Brand	S/N	Dates
468-PM-006 Energy Meter Switchgear (1-6)	Power Measurement ION 7330 V277	PB-0401A178-11	Operative until 22/08/2013
	Power Measurement ION 7330 V277 C/ETH	PB-1210A467-11	Operative from 22/08/2013

Regarding the calculated values, they are obtained using the estimation approved in the PDD<sup>/1, 1.3/</sup>, where the maximum consumption per year has been considered based on the nominal capacity and assuming that the equipment operates 24 hours for 360 days, which is a conservative approach.

In the ERs spreadsheet<sup>/5a/</sup> the monthly information of the parameter, for years 2012 and 2013, was detailed; but no supporting evidence was available in order to confirm that the reported values were correct. **CL 12 was raised.** The PP provided the updated ER excel file<sup>/5b/</sup> and the energy records obtained from the corresponding meters every 15 minutes<sup>/8.9.1b & 8.9.2b/</sup>, it was verified that the information used for ER calculation<sup>/5b/</sup> and MR<sup>/4b/</sup> is correct. Additionally, as part of the QA/QC procedure the information was crosschecked against the corresponding invoices (when available)<sup>/12.2, 12.3 & 12.4/</sup> and the balance<sup>/12.5/</sup> performed by the PP.. The information was found correct. **CL 12 was closed.**

Regarding the equipments involved with the monitoring, two meters (s/n PB-0607A312-11 and s/n PB-1210A467-11) were used during this monitoring period. As per the registered PDD<sup>/1/</sup>, the power meters accuracy should be +/-0.3%, however in the MR version 1<sup>/5a/</sup> the accuracy of the meters was reported as +/- 0.5%. PP was requested to clarify how this is in compliance with the registered PDD. **CL 3 item 12 was raised.** Similarly in order to verify the information of the new meter **CL 4 item 2 was raised.**

The PP provided the provider report which confirmed when the electricity meter was replaced<sup>/9.36/</sup> and the technical specifications of the new meter (s/n PB-1210A467-11)<sup>/9.38 - 9.39/</sup>. It was verified that the electricity meter changed (reported in sections D.2 and B.1 of MR version 2) is correct against the report issued by the provider<sup>/9.36/</sup>. It was verified against the technical specifications<sup>/9.39/</sup> that the new meter accuracy is +/-0.3%, which is in compliance with the accuracy committed in the registered monitoring plan<sup>/1/</sup>. Finally, it was verified that the calibration date of the new meter informed in MR<sup>/4c/</sup> is correct against the calibrations records<sup>/9.40/</sup> issued by the manufacturer. **CL 4 item 2 was closed.**

Regarding the meters accuracy, the PP acknowledged that there is a non-compliance for the electricity meter (s/n PB-0401A178-11) accuracy for the period 01/01/2012 until 22/08/2013, while from 22/08/2013 the new meter (s/n PB-1210A467-11) installed has the accuracy required by the registered monitoring plan.

As per the registered PDD, the required accuracy was +/- 0.3%, while the accuracy of meter (s/n PB-0401A178-11) installed during 01/01/2012 - 22/08/2013 was +/- 0.5%. This situation is equivalent to the previous one described in EL<sub>PJ, gross, y</sub> and EL<sub>PJ, imp, y</sub>. In order to overcome this situation, the PP presented the corrected PDD<sup>/1.3/</sup> where the Monitoring Plan has been corrected in order to reflect both meters involved. It was verified that this change to the monitoring plan is in compliance with PS version 7, appendix 1, paragraph 4, thus it does not require prior approval and is presented together with the verification.

In compliance with PS version 7, appendix 1, paragraph 4a, the PP states in the revised MP<sup>/1.3/</sup> that measurements have to be corrected in those cases where the accuracy of the installed equipment is

lower than the one committed in the PDD. Following the PS guidance, the PP applied a correction of 0.2%, equivalent to the difference between the committed accuracy (0.3%) and the real one (0.5%), over the parameter. The ER spreadsheet version 5<sup>/5e/</sup> reports the monitored data in tabs “2012 Data” and “2013 Data”. Given that this parameter is involved in baseline emissions, following a conservative approach the records of the parameter were increased by 0.2%. The application of the cited correction is done in tabs “2012 Emissions” and “2013 Emissions”, cell E216, the correction was done for the whole 2012 and from January until August 2013.

The correction applied followed correctly the conservative approach required by PS version 7, appendix 1, paragraph 4, finally it was verified that this deviation does not require prior approval by the board. **CL 3 item 12 was closed.**

Regarding equipments calibration, there are no specific calibration requirements for the power meters in the applied methodology ACM0006 version 12.1.1, and, as per the monitoring plan<sup>/1, 1.3/</sup> calibrations will be done as per the manufacturer specifications, which is correct as per VVS version 7.0 Para 287. According to the manufacturer<sup>/9.9/</sup>, both meters have a calibration frequency of 7 years, but since these meters cannot be altered, calibrations are actually accuracy checks; All power meters underwent an accuracy check on 12/12/2010<sup>/10.33/</sup>, and the provider of the meters extended the life of the equipment until the end 2013; for this reason, the PP replaced the meter on 22/08/2013 for new equipment<sup>/9.36/</sup> which were installed at the time that the site visit was conducted. During the site visit, through the interviews conducted it was verified that the personnel in charge has knowledge about the calibration and maintenance procedure of the equipment.

The following table summarizes the meters characteristics and calibrations.

Monitoring equipment	S/N	Type	Accuracy	Calibration frequency requirement	Calibration date
468-PM-006	PB-0401A178-11	Energy meter switchgear 1-6 Power Measurement ION 7330 V277 (operated until 22/08/2013)	+/- 0.5% <sup>/9.18/</sup>	7 years <sup>/9.9/</sup>	12/12/2010 <sup>/10.33/</sup>
	PB-1210A467-11	Energy meter switchgear 1-6 Power Measurement ION 7330 V277 C/ETH (in operation from 22/08/2013)	+/- 0.3% <sup>/9.39/</sup>	7 years <sup>/9.9/</sup>	31/10/2012 <sup>/9.40/</sup>

\*: corresponds to the date of the last verification of the meter done by the equipment supplier (Schneider electric)..

Through the review of the documents (energy records<sup>/8.9.1b, 8.9.2b, 12.2, 12.3 & 12.4/</sup> and ER calculation spreadsheets<sup>/5h/</sup>) and the on-site inspection, it can be confirmed that the implementation of the monitoring system and procedures for this parameter comply with the monitoring system and procedures described in the Monitoring Plan in the revised PDD<sup>/1.3/</sup> and the applied methodology ACM0006 version 12.1.1<sup>/3.3/</sup>. The table below summarizes the compliance of the implementation of the project activity against the requirements in the applied methodology and the MP.

Registered/revise Monitoring Plan & Approved Methodology	Data/Parameter	Description	Measured/Calculated/Default	Source data	Monitoring equipment	Measuring/Reading/Recording frequency	Calculation method (if applicable)	QA/QC procedures
Monitoring Report, onsite checks								
<b>Requirement in the applicable methodology and EB Documents</b>	EL <sub>PJ,aux,y</sub>	Total auxiliary electricity consumption required for the operation of the power plants at the project site in year y (MWh)	Measured	On-site measurements	Calibrated electricity meters	Data monitored continuously and aggregated as appropriate	N/A	The consistency of metered electricity generation should be cross-checked with receipts from electricity sales (if available) and the quantity of fuels fired (e.g. check whether the electricity generation divided by the quantity of fuels fired results in a reasonable efficiency that is comparable to previous years).
<b>Requirement in the revised monitoring plan</b>	EL <sub>PJ</sub>	Total auxiliary electricity consumption required for the operation of the power plants at the project site in year y (MWh)	Measured	On-site measurements	Electric meters, accuracy level +/- 0.3%	Continuously	N/A	The consistency of metered electricity generation will be crosschecked with receipts from electricity sales (if available), and the quantity of fuels fired (e.g. check whether the electricity generation divided by the quantity of fuels fired results in a reasonable efficiency that is comparable to previous years). All meters will receive calibration and maintenance.
<b>Implementation of the project</b>	EL <sub>PJ</sub>	Total auxiliary electricity consumption required for the operation of the power plants at the project site in year y (MWh)	Measured	On-site measurements	Electric meters, accuracy level +/- 0.3% and +/- 0.5 %	Continuously. Energy values are recorded every 15 minutes and aggregated monthly.	N/A	Electricity meters received periodic maintenance and calibration as per instructed by the equipment manufacturer.
<b>Conclusion on the compliance of the implementation with the monitoring plan &amp; applicable methodology.</b>	In compliance	In compliance	In compliance	In compliance	During a period of time of this MP electricity meters used had accuracy lower than the committed in PDD. This issue was properly addressed as per PS version 7 appendix 1.  In compliance	In compliance	N/A	In compliance

**Parameter 17: Net calorific value of biomass residues of category n in year y (GJ/tonne of dry-basis) ( $NCV_{BR,n,y}$ )**

The biomass combusted by the project plant corresponds to a mix of sawdust and bark coming from internal (on-site) / external (off-site) sources located inside and outside the complex as stated in section A.2 of the PDD, and the NCV of biomass is measured by an external laboratory.

According to the Monitoring Plan<sup>/1, 1.3/</sup> and ACM0006 version 12.1.1<sup>/3.3/</sup>, this parameter is to be measured at least every six months per type (category) of biomass. It is also indicated that the net calorific values should be based on measurements or reliable local or national data. All the data necessary for the determination of this parameter was provided by the PP.

In order to assess the compliance of the monitoring performed by the PP and given that ER spreadsheet<sup>/5a/</sup> only reported the aggregated values, the PP was requested to provide the corresponding laboratory analysis and supports to comply with the above mentioned requirements. **CL 13 item 1 was raised.** Additionally, the PP was requested to report the parameter in the MR, as per the frequency required by the MP. **CL 13 item 2 was raised.**

The PP provided the result of the NCV test conducted on 30/11/2011<sup>/8.12.1/</sup>; 28/05/2012<sup>/8.12.2/</sup> and 28/10/2013<sup>/8.12.4/</sup>. As per MR version 2<sup>/4b/</sup>, section B.2.1. there was a NCV measurement done on 28/12/2012, but the supporting evidence was not received. In the following submission the PP provided the laboratory report<sup>/8.12.3b/</sup>, it was verified that information reported in MR version 3<sup>/4c/</sup> and the ER excel file<sup>/5c/</sup> is correct against the lab report. Similarly it was verified that the MR version 3 reports correctly the NCV as per the monitoring frequency committed. Finally, it was verified that the NCV tests were done by CESMEC<sup>/ 8.12.1., 8.12.2., 8.12.3b, 8.12.4/</sup>. CESMEC is a well-known laboratory company part of Bureau Veritas group (www.cesmec.cl). As per the lab reports, the NCV was determined using the CEN/TS-14918 "Solid biofuels. Method for the determination of calorific value". **Items closed.**

Thus based on the verified and reported information, the NVC measurements were performed in the following dates:

Sampling dates	Due date of test	Delayed test?
30/11/2011	29/05/2012	No
28/05/2012	27/11/2012	No
28/12/2012	27/06/2013	Yes, from 28/11/2012 to 27/12/2012
28/10/2013	27/04/2014	Yes, from 28/06/2013 – 27/10/2013

In the MR version 1<sup>/4a/</sup>, the PP correctly identify the gaps corresponding to the delayed sampling. The PP follows the VVS version 7<sup>/3.2/</sup> guidance relative to Temporary Deviations (Para 297) and Project Standard version 7<sup>/3.1/</sup> (appendix 1, para 2). In order to clarify the criteria followed by the PP to be in compliance with the mentioned documents, **CL 2 was raised.**

As it was identified in the previous table and verified there are two periods (28/11/2012 – 27/12/2012 and 28/06/2013 – 27/10/2013) where the PP didn't monitor the parameter  $NCV_{BR,n,y}$  as per the MP requirements, however the PP addressed this deviation following a conservative approach as per PS version 7 appendix 1.

As per the methodology, it was verified that  $NCV_{BR,n,y}$  is involved in the Baseline Emissions due to the aerobic decay or uncontrolled burning of the biomass and in the Project Emissions due to the biomass combustion. Thus considering that the same parameter is used in project and baseline emissions it was verified that the PP considers a conservative approach separately for BE and PE. Thus baseline emissions were considered zero for the deviated periods, it was verified that BE for December 2012 was considered zero in the ER spreadsheet<sup>/5b/</sup>, tab "2012 Emissions" cell E167, the same approach was followed from July to October 2013 tab "2013 Emissions" cell F167.

Regarding the period where the correction was applied it is deemed correct because for 2012 deviation, the whole month of December (even though the delay was until 27/12/2012 only) was considered in order to compensate for 3 days delay in November (28 to 30 November); it is deemed correct because December has one day more, thus it is conservative. The same approach was followed for the second deviated period, the correction was done for July to October 2013.

Regarding PE, given that PE are as  $PE_{BR,y} = GWP_{CH_4} * EF_{CH_4, BR} * \sum BR_{PJ,n,y} * NCV_{BR,n,y}$  and  $EF_{CH_4, BR} = 0$  (based on the measurements done), the application of a higher NCV value does not have impact because  $PE_{BR,y}$  was already zero.

Therefore, it was verified that the approach followed by the PP is correct as per the PS v 7 appendix 1. **CL 2 was closed.**

As part of the QA/QC procedures, the PP compared the values of this monitoring period with values reached by the project UNFCCC 0259, which has similar classification of biomass. It was verified that values are similar among them.

It is also worth mentioning that the PP could not do the comparison with historical values used in previous monitoring periods (commitment period 1), because the NCV was previously defined for the mix of biomass while as per the new version of the methodology (ACM0006 version 12.1.1.) NCV has to be defined per type of biomass. Just for referential purposes, the NCV value measured during the sixth monitoring period (16.47 GJ/t<sup>/13.6/</sup>) was compared with the average for this MP (16.8 GJ/t<sup>/5g/</sup>), it was found that current values are 2 % above the previous one, thus the values are consistent.

Additionally, it was verified that the average measured NCV for all types of biomass for this monitoring period is 16.8 GJ/t<sup>/5h/</sup>, which is approximately 2% higher than the IPCC 2006<sup>/3.11/</sup> default values (16.47 GJ/ton), but the measured values are within the range defined at 95% confidence interval (7.9 – 31 GJ/ton)

After the review of the supporting documentation provided by the PP (documents<sup>/8.12.1-8.12.2-8.12.3b-8.12.4/</sup> and the ER calculation spreadsheets<sup>/5h/</sup>) and the on-site inspection, it can be confirmed that the implementation of the monitoring system and procedures for this parameter comply with the monitoring system and procedures described in monitoring plan of the PDD<sup>/1, 1.3/</sup> and the applied methodology ACM0006 version 12.1.1<sup>/3.3/</sup>.



Registered/revised Monitoring Plan & Approved Methodology  Monitoring Report, onsite checks	Data/Parameter	Description	Measured/Calculated/Default	Source data	of Monitoring equipment	Measuring/Reading/Recording frequency	Calculation method (if applicable)	QA/QC procedures
<b>Requirement in the applicable methodology and relevant EB Documents</b>	NCV <sub>BR,n,y</sub>	Net calorific value of biomass residue of category n in year y (GJ/tonne on dry-basis)	Measured	On-site measurements	N/A	At least every six months, taking at least three samples for each measurement	Measurements shall be carried out at reputed laboratories and according to relevant international standards. Measure the NCV on dry-basis	Check the consistency of the measurements by comparing the measurement results with measurements from previous years, relevant data sources (e.g. values in the literature, values used in the national GHG inventory) and default values by the IPCC. If the measurement results differ significantly from previous measurements or other relevant data sources, conduct additional measurements. Ensure that the NCV is determined on the basis of dry biomass
<b>Requirement in the registered and revised monitoring plan</b>	NCV <sub>BR,n,y</sub>	Net calorific value of biomass residues of category n in year y (GJ/tonne of dry-basis).	Measured	On-site measurements	N/A	At least every six months, taking at least three samples for each measurement	N/A	Check consistency of measurements by comparing the measurement results with measurements from previous years, relevant data sources (e.g. values in the literature, values used in the national GHG inventory if available) and default values by the IPCC. Additional measurement will be conducted in case measurement results differ significantly from previous measurement or other relevant data. NCV measurements will be determined on the basis of dry biomass.
<b>Implementation of the project</b>	NCV <sub>BR,n,y</sub>	Net calorific value of biomass residues of category n in year y (GJ/tonnes of dry-basis).	Measured	On-site measurements	N/A	At least every six months, taking at least three samples for each measurement. Two period deviated follows PS appendix 1.	Measurements done by CESMEC using CEN/TS-14918	Values compared with previous years (same project) and another similar project.
<b>Conclusion on the compliance of the implementation with the monitoring plan &amp; applicable meth.</b>	In compliance	In compliance	In compliance	In compliance	N/A	In compliance	In compliance	In compliance

**Parameter 18: % Water content in mass basis in wet biomass residues (Moisture content of the biomass residues)**

The water content quantifies water content in the biomass used as energy source in the power plant. It is used to adjust the biomass mass units from wet basis units to dry basis units (i.e. 'BDt').

During the site visit, it was verified that, for the current monitoring period (CP2 MP1: 01/01/2012 – 31/12/2013), the parameter was monitored as per the Monitoring Plan<sup>1, 1.3/</sup> requirements. The table below shows the monitoring equipment used in the current monitoring period:

Equipment	Brand	S/N	Dates
Electronic moisture analyzer	Sartorius AG	17302238	Operative <u>until</u> 07/12/2012
Electronic moisture analyzer	Mettler Toledo	B235265966	Operative <u>from</u> 07/12/2012

During the site visit, it was verified that the biomass moisture content is measured using an electronic moisture analyser (no TAG) placed at the Nueva Aldea Complex laboratory facilities<sup>17/</sup>.

According to the PP records<sup>9.2/</sup>, the electronic moisture analyser was replaced in 7<sup>th</sup> December 2012. During the site visit it was verified that the new electronic moisture analyzer (Mettler Toledo) was in operation. Based on the information available in the calibration certificates, it was found that the electronic moisture analyzer Sartorius (accuracy class I)<sup>10.30.a/</sup> was replaced by another of different accuracy class (Mettler Toledo HB43-S, accuracy Class II)<sup>10.30.b/</sup>. Thus PP was requested to confirm the accuracy class of each equipment in order to demonstrate whether they are equivalent and if the new one is in compliance with the requirements of the registered PDD. **CAR 5 item 4 was raised.** Based on the technical sheet<sup>9.45/</sup> obtained from the provider, it was verified that the accuracy class of the moisture analyzer HS-43 (Mettler Toledo) is class I, which is equivalent to +/- 0.001 gr, which is the value committed in the registered PDD. Thus, it was confirmed that the PP reported incorrectly the accuracy of the device in MR version 1<sup>4a/</sup> and it was corrected in MR version 4<sup>4d/</sup>. Additionally, the complementary information supplied by the PP<sup>9.46, 9.47, 9.48/</sup> was reviewed; it was verified that the accuracy classification of the moisture analyzer is consistent with the international regulations. It was verified that the new moisture analyzer (Mettler Toledo Class I) has the same accuracy class and permissible error than the previous one (Sartorius). **Item closed.**

The PP provided records of the measurements of the biomass moisture content of the sludge<sup>8.1.1 – 8.1.2/</sup>, internal and external biomass residues and forest biomass residues<sup>8.1.3.-8.1.4/</sup>, for the entire monitoring period. Records include moisture content measurements of the biomass mix (sawdust and bark, internal (on-site) and external (off-site)) and the sludge separately.

For the year 2012, from the review of the following documents: "Humedad lodo.xls"<sup>8.1.1/</sup> and "Planilla medición de humedad 2012 140221.xls"<sup>8.1.3/</sup> against the information reported in the ERs spreadsheet<sup>5a/</sup>, it was found that the data reported was inconsistent for: i) the sludge moisture reported for January 2012, and ii) the mix of sawdust and bark from off site for May & June 2012. **CAR 14 was raised.** The PP provided the updated ER excel file<sup>5b/</sup> and MR version 2<sup>4b/</sup>, it was verified that the data is correct against the file that records the measurements performed<sup>8.1.3.b/</sup>. **CAR 14 was closed.**

For year 2013 the information reported in the ER spreadsheet<sup>5h/</sup> and the MR<sup>4i/</sup> was found correct against test records<sup>8.1.2 to 8.1.4b/</sup>.

In the emission reduction spreadsheet (ER)<sup>5h/</sup>, the moisture content per type of residue is reported monthly in tabs "2012 Data" and "2013 Data", rows 51-54. Then, the total average biomass moisture content is calculated and reported in tab "2012 Data" and "2013 Data", cells R51-54. All formulas associated with the moisture content, i.e. to convert from 'dry' [BDt] units to 'humid' [thu] mass units or vice versa were checked and traced back in the ER spreadsheet<sup>5h/</sup>, tabs "2012 emissions" and "2013 emissions". Formulas are correct and no errors were detected by the assessment team.

Based on the above, it was considered that the set of data is complete for the monitoring period 01/01/2012 – 31/12/2013 as per the requirement of VVS version 7.0, paragraph 290.a.

The methodology ACM0006 version 12.1.1, does not specify calibration frequency for moisture content analysers; therefore, according to VVS version 7.0, paragraph 287, it is indicated that calibrations should be performed at a frequency suggested by local/national standards or as per manufacture specifications. In order to obtain the relevant information of the new electronic moisture analyzer (calibrations done and calibration frequency recommended by the provider), **CL 3 item 1 and CL4 item 1 were raised.**

The PP provided the missing certificates<sup>/10.30.a, 10.30.b, 10.30.c/</sup>, it was verified that the calibration certificates reported in the MR version 2<sup>/4b/</sup> are correct against the certificates<sup>/10.30.a, 10.30.b, 10.30.c/</sup>. On the other hand, the PP provided the technical specifications related with the calibration frequency<sup>/9.34/</sup> where the provider states “it is recommended a calibration at least once every 12 months”. It was noted that for Mettler Toledo Analyzer, MR version 2<sup>/4b/</sup> stated that calibration frequency should be “annual, and annual maintenance frequency means once a year ....”, which was not consistent with the provider recommendation. Finally the calibration frequency were correctly reported in MR version 3 and matched the calibration certificates verified<sup>/4c/</sup>. **Items closed.**

According to the information reported in the MR version 1, the calibration validity for the moisture analyzer Sartorius AG S/N 17302238 is 14/07/2012. However, it was identified that it did not undergo calibration until 07/12/2012, i.e. 5 months later. The PP was requested to clarify how this is considered to meet the calibration requirements of this equipment. **CAR 5 item 3 was raised.** The PP explained that there was a calibration performed on 21/06/2012<sup>/10.32/</sup>, thus knowing that the previous calibration was on 15/07/2011<sup>/10.30.a/</sup>. Thus the calibration was performed in accordance with the committed calibration frequency defined by the provider<sup>/9.11, 9.19/</sup>. Thus there is no gap in the calibration. **Item closed.**

Similarly the PP was requested to clarify how the “Moisture analyzer” (Mettler Toledo, S/N B235365966) for the period 07/12/2013 – 31/12/2013 is in compliance with the calibration frequency defined. **CAR 5 item 6 was raised.** The PP acknowledged there is a delay in the calibration of the moisture analyzer for the period 07/12/2013 to 31/12/2013, thus as per VVS version 7 Para 283, the PP corrected the measured values applying the maximum permissible error, which is lower that error found at the calibration conducted on 31/12/2013<sup>/10.30.c/</sup>. It was verified that the error was applied in a conservative way in the ER spreadsheet calculation version 5<sup>/5e/</sup>, tab “2013 Data”, cells Q51:Q54, thus the values of the whole month (December 2013) were corrected. The error is applied in order to reflect the error in the measurement of the wet and dry biomass. Due to this correction, there was a decrease of 1 tCO<sub>2e</sub> in the verified period, in comparison with the previous version of the ER spreadsheet<sup>/5d/</sup>. **Item closed.**

The table below summarises the specification, calibration and maintenance information of the equipment used:

Equipment Tag	Equipment	Calibration Frequency	Calibration Dates	Visual references
Electronic moisture analyzer (no Tag number)	S/N 17302238	Annual <sup>/9.11, 9.19/</sup>	15/07/2011 <sup>/10.30.a/</sup> 21/06/2012 <sup>/10.32/</sup>	N/A
	B235265966	Annual <sup>/9.34/</sup>	07/12/2012 <sup>/10.30.b/</sup> 31/12/2013 <sup>/10.30.c/</sup>	Ref. 17

**Table 1: Calibration details of the moisture analyzers**

After the review of the supporting documentation provided by the PP (documents<sup>/8.1.2 – 8.1.3b – 8.1.4b/</sup> and the ER calculation spreadsheets<sup>/5h/</sup>) and the on-site inspection, it can be confirmed that the implementation of the monitoring system and procedures for this parameter comply with the monitoring system and procedures described in monitoring plan of the PDD<sup>/1, 1.3/</sup> and the applied methodology ACM0006 version 12.1.1<sup>/3.3/</sup>.

Registered/ revised Monitoring Plan & Approved Methodology  Monitoring Report, onsite checks	Data /Parameter	Description	Measured /Calculated /Default	Source of data	Monitoring equipment	Measuring/ Reading/ Recording frequency	Calculation method (if applicable)	QA/QC procedures
<b>Requirement in the applicable methodology and EB Documents</b>	Moisture content of the biomass residues	Moisture content of each biomass residues type k	Measured	On-site measurements	N/A	The moisture content should be monitored for each batch of biomass of homogeneous quality.	The weighted average should be calculated for each monitoring period and used in the calculations (as per monitoring frequency row)	N/A
<b>Requirement in the registered and revised monitoring plan</b>	Moisture content of the biomass residues	Moisture content of each biomass residues type k.	Measured	On-site measurements.	Electronic moisture analyser with accuracy class of +/- 0.001.	This parameter will be monitored for each batch of biomass residues category and aggregated data monthly.	The weight average will be calculated for each monitoring period and used in the emission reduction calculations.	N/A
<b>Implementation of the project</b>	Moisture content of the biomass residues	Moisture content of each biomass residues type k.	Measured	On-site measurements	Electronic moisture analysers, Class I, +/- 0.001 gr	Monitored for each batch of biomass residues category	The moisture content was monitored for each batch of biomass residues category and the weight average was calculated for each monitoring period and used in the emission reduction calculations.	N/A
<b>Conclusion on the compliance of the implementation with the monitoring plan &amp; applicable methodology</b>	In compliance	In compliance	In compliance	In compliance	In compliance	In compliance	In compliance	N/A

### **3.4.2 Verification of implementation of sampling plan**

No sampling plan has been implemented for this project activity.

### **3.5 Accuracy of Equipment**

The applied methodology ACM0006 version 12.1.1 does not have specific requirements for the equipment accuracy and calibration frequency; it only refers to national and manufacturers' standards. The accuracy and calibration frequency of the equipment used for monitoring has been assessed against the monitoring plan<sup>/1, 1.3/</sup>.

The accuracy of the equipment was verified by the review of the calibration certificates corresponding to each calibration performed, should be in accordance with the monitoring plan<sup>/1, 1.3/</sup> and manufacturers' standard and/or recommendations. In this regard, the PP provided evidence from the manufacturers about the calibration requirements and verification procedures for the monitoring equipment.

The following table summarise the verification of the accuracy and calibration requirement of the equipment involved in the monitoring of each parameter for this monitoring period. It has to be noted that for those monitoring equipments that report delayed calibrations, the corresponding application of the error as per VVS version 7 paragraph 283 has been assessed and reported in the corresponding parameter included in section 3.4.1. of this report.

Monitoring equipment	Monitoring parameter	S/N	Type	Level	Calibration frequency requirement	Calibration date	Validity	Are there delays in calibration?	Calibration Entity	Accreditation Certificate for the calibration entity Issuing authority Relevant
463-FIQ-174	4. BR <sub>PJ,n</sub> , y/ BR <sub>B1/B</sub> 3,n,y, BR <sub>B4,n</sub> , y, BR <sub>B5/B</sub> 8,n,y	965691	Sander Dust conveyor Belt weight meter KCM/SWB-600, (out of service during the MP)	+/- 1% /9.15/	6 months /9.8/	13/12/2011 <sup>/10.5.1/</sup>	12/06/2012	No	Precision	LC018, as per NCH-ISO 17025
531-WI-5518A	5. BR <sub>PJ,n</sub> , y/ BR <sub>B1/B</sub> 3,n,y, BR <sub>B4,n</sub> , y, BR <sub>B5/B</sub> 8,n,y	38711	Pulp Mill Bark conveyor Belt weight meter KEPRO 2200	+/- 1.5% /9.31/	Annual /9.32/	01/09/2011 <sup>/10.28.1/</sup> 07/06/2012 <sup>/10.28.2/</sup> 14/11/2012 <sup>/10.28.3b/</sup> 05/09/2013 <sup>/10.28.4/</sup>	04/09/2014	No	Precision Molinstec	LC018, as per NCH-ISO 17025
431-FIQ-502	6. BR <sub>PJ,n</sub> , y/ BR <sub>B1/B</sub> 3,n,y, BR <sub>B4,n</sub> , y, BR <sub>B5/B</sub>	PBD/W 1020545PJ	Log processing Bark conveyor belt weight meter BW500	+/- 1% /9.29/	Annual /9.30/	13/12/2011 <sup>/10.2.1/</sup> 26/06/2012 <sup>/10.2.2/</sup> 26/12/2012 <sup>/10.2.3/</sup> 04/06/2013 <sup>/10.2.4/</sup>	03/06/2014	No	Precision	LC018, as per NCH-ISO 17025

Monitoring equipment	Monitoring parameter	S/N	Type	Level	Calibration frequency requirement	Calibration date	Validity	Are there delays in calibration?	Calibration Entity	Accreditation Certificate for the calibration entity Issuing authority Relevant
	8,n,y									
Electronic Moisture Analyzer	Moisture content of the biomass residues	17302238	Sartorius AG. Gotingen MA100H-000230V1 (operated until 07/12/2012)	Class I /9.19/	Annual /9.11/	15/07/2011 <sup>/10.30.a/</sup> 21/06/2012 <sup>/10.32/</sup>	14/07/2012	No	CESMEC	LC002 as per NCh-17025
		B235265966	Mettler Toledo HB43-S (in operation from 07/12/2012)	Class I, +/- 0.001 gr /9.5/	Annual/9.34/	07/12/2012 <sup>/10.30.b/</sup> 31/12/2013 <sup>/10.30.c/</sup>	30/12/2014	Yes, between 07/12/2013 and 31/12/2013	CESMEC	LC002 as per NCh-17025
Weighbridge 1	7. BR <sub>PJ,n</sub> , y/ BR <sub>B1/B</sub> 3,n,y, BR <sub>B4,n</sub> , y, BR <sub>B5/B</sub> 8,n,y FR <sub>f,m</sub>	5437967-5GF	Weighbridge 1 North entrance JAGXTREME (operated until 24/01/2012)	Class III /9.16/	Biannual /9.6/	27/07/2011 <sup>/10.1.1/</sup>	26/01/2012	No	CESMEC	LC002 as per NCh-17025
		325078	Weighbridge 1 North entrance Rice Lake IQ+355 (in operation from 24/01/2012)	+/- 30 Kg Class III /9.27/	Biannual /9.35/	24/01/2012 <sup>/10.1.2/</sup> 25/07/2012 <sup>/10.1.15/</sup> 30/01/2013 <sup>/10.1.3/</sup> 31/07/2013 <sup>/10.1.4/</sup>	30/01/2014	No	CESMEC	LC002 as per NCh-17025
Weighbridge 2	8. BR <sub>PJ,n</sub> , y/ BR <sub>B1/B</sub> 3,n,y, BR <sub>B4,n</sub> , y, BR <sub>B5/B</sub> 8,n,y FR <sub>f,m</sub>	5429421-5EF	Weighbridge 2 South entrance JAGXTREME	Class III (+/- 30 kg) /9.16//	Biannual /9.6/	27/07/2011 <sup>/10.1.5/</sup> 24/01/2012 <sup>/10.1.6b/</sup> 25/07/2012 <sup>/10.1.7/</sup> 30/01/2013 <sup>/10.1.8/</sup> 31/07/2013 <sup>/10.1.9/</sup>	30/01/2014	No	CESMEC Molinstec	LC002 as per NCh-17025 LC018, as per NCH-ISO 17025



Monitoring equipment	Monitoring parameter	S/N	Type	Level	Calibration frequency requirement	Calibration date	Validity	Are there delays in calibration?	Calibration Entity	Accreditation Certificate for the calibration entity Issuing authority Relevant
Weighbridge 3	9. BR <sub>PJ,n</sub> , y/ BR <sub>B1/B</sub> 3,n,y, BR <sub>B4,n</sub> , y, BR <sub>B5/B</sub> 8,n,y	5437969-5GF	Weighbridge 3 Truck exit, JAGXTREME	Class III (+/- 30 kg) /9.16/	Biannual /9.6/	27/07/2011 /10.1.10/ 24/01/2012 /10.1.11/ 25/07/2012 /10.1.12/ 30/01/2013 /10.1.13/ 31/07/2013 /10.1.14/	30/01/2014	No	CESMEC	LC002 as per NCh-17025
461-LT-0460	FC <sub>i,Project plant,y</sub>	6404010868	Level transmitter 264HCHRBESSA1 /E6/L1/I2/N6/C1	+/- 0.075% /9.17/	12 months /9.10/	07/06/2011 /10.3.1/ 09/07/2012 /10.3.2/ 15/01/2013 /10.3.3/ 22/08/2013 /10.3.4/	21/08/2014	Yes. between 07/06/2012 and 09/07/2012	Paneles Arauco S.A	N/A
Propane tank level transmitter	FC <sub>i,Project plant,y</sub>	N/A	Propane tank level transmitter Rochester Gauges 6283-J21-41-J01	N/A, The transmitter belongs to the gas supplier. It is worth to mention that LPG is occasionally used for boiler start ups, when diesel is not able to spark up the burner.						
463-PT-0106	HC <sub>BL,y</sub>	6403015456	Pressure transmitter feed water ABB 264PSSSB2A3V1 /B2/I2/N6/C1	+/- 0.075% /9.20/	18 months /9.12/	07/12/2010 /10.7.1/ 07/01/2012 /10.7.2/ 10/07/2012 /10.7.3/ 20/08/2013 /10.7.4/	19/02/2015	No	Paneles Arauco S.A	N/A
463-TT-0110	HC <sub>BL,y</sub>	458205	Temperature transmitter feed water Rosemount 3244MV1 NAA01B4C2C4Q4	+/- 0.10 °C /9.22/	5 years /9.13/	07/12/2010 /10.9.1/ 09/07/2012 /10.9.2/ 23/08/2013 /10.9.3/	22/08/2013	No	Paneles Arauco S.A	N/A
463-FT-0402	HC <sub>BL,y</sub>	6403015454	Steam flow meter 85 bar (soot blower) ABB 264DSHSSB2A3 /V1/B2/I2/N6/C1	+/- 0.075% /9.20/	18 months /9.12/	07/12/2010 /10.6.1/ 09/07/2012 /10.6.2/ 20/08/2013 /10.6.3/	19/02/2015	Yes, between 07/06/2012 and 09/07/2012	Paneles Arauco S.A	N/A

Monitoring equipment	Monitoring parameter	S/N	Type	Level	Calibration frequency requirement	Calibration date	Validity	Are there delays in calibration?	Calibration Entity	Accreditation Certificate for the calibration entity Issuing authority Relevant
463-PT-0403	HC <sub>BL,y</sub>	6403015460	Pressure transmitter 85 bar (soot blower ) 264PSQSSB2A3V1 /B2/I2/N6/C1	+/- 0.075% /9.20/	18 months <sup>9.12/</sup>	07/12/2010 /10.8.1/ 09/07/2012 /10.8.2/ 21/08/2013 /10.8.3/	20/02/2015	Yes, between 07/06/2012 and 09/07/2012	Paneles Arauco S.A	N/A
463-TT-0406	HC <sub>BL,y</sub>	458156	Temperature transmitter 85 bar (soot blower) Rosemount 3244MVF1NAA01B4C2C4Q4	+/- 0.10 °C /9.22/	5 years <sup>9.13/</sup>	08/12/2010 /10.10.1/ 13/07/2012 /10.10.2/ 22/08/2013 /10.10.3/	21/08/2018	No	Paneles Arauco S.A	N/A
465-FT-9027	HC <sub>BL,y</sub>	8809	Steam flow meter 19 bar (plywood mill)	+/- 0.025% /9.21/	5 years <sup>9.13/</sup>	09/12/2010 /10.14.1/ 11/07/2012 /10.14.2/ 22/08/2013 /10.14.3/	21/08/2018	No	Paneles Arauco S.A	N/A
565-FT-0965	HC <sub>BL,y</sub>	6406022860	Steam flow meter 19 bar (pulp mill) ABB 264DSMSSA2A3 /V1/B2/I2/N6/C1	+/- 0.075% /9.20/	18 months <sup>9.12/</sup>	24/03/2011 /10.29.1/ 10/07/2012 /10.29.2/ 22/08/2013 /10.29.3/	21/02/2015	No	Paneles Arauco S.A	N/A
465-PIT-9000-A	HC <sub>BL,y</sub>	6404008677	Pressure transmitter 19 bar (main line) ABB 264PSQSSB2A3 /V1/L1/B2/I2/N6/C1	+/- 0.075% /9.20/	18 months <sup>9.12/</sup>	10/12/2010 /10.15.1/ 09/07/2012 /10.15.2/ 20/08/2013 /10.15.3/	19/02/2015	Yes, between 10/06/2012 and 09/07/2012	Paneles Arauco S.A	N/A
465-PIT-9000-B	HC <sub>BL,y</sub>	6404008676	Pressure transmitter 19 bar (main line) ABB 264PSQSSB2A3 /V1/L1/B2/I2/N6/C1	+/- 0.075% /9.20/	18 months <sup>9.12/</sup>	10/12/2010 /10.16.1/ 09/07/2012 /10.16.2/ 20/08/2013 /10.16.3/	19/02/2015	Yes, between 10/06/2012 and 09/07/2012	Paneles Arauco S.A	N/A
465-TT-9028	HC <sub>BL,y</sub>	456397	Temperature transmitter 19 bar (pulp mill) Rosemount 3244MVF1 NAA01B4C2C4Q4	+/- 0.10 °C /9.22/	5 years <sup>9.13/</sup>	09/12/2010 /10.24.1/ 07/07/2012 /10.24.2/ 22/08/2013 /10.24.3/	21/08/2018	No	Paneles Arauco S.A	N/A
465-FT-9025	HC <sub>BL,y</sub>	8808	Steam flow meter 11.5 bar (AASA) Rosemount 3051SFADS1 20DCHPS2T10007-2AF1A2G2Q4F2	+/- 0.025% /9.21/	5 years <sup>9.13/</sup>	09/12/2010 /10.13.1/ 11/07/2012 /10.13.2/ 22/08/2013 /10.13.3/	21/08/2018	No	Paneles Arauco S.A	N/A

Monitoring equipment	Monitoring parameter	S/N	Type	Level	Calibration frequency requirement	Calibration date	Validity	Are there delays in calibration?	Calibration Entity	Accreditation Certificate for the calibration entity Issuing authority Relevant
465-PIT-9001-A	HC <sub>BL,y</sub>	6404008680	Pressure transmitter 11.5 bar (main line) ABB 264PSPSSB2A3 /V1/L1/B2/I2/N6/C1	+/- 0.075% /9.20/	18 months /9.12/	09/12/2010 /10.17.1/ 10/07/2012 /10.17.2/ 21/08/2013 /10.17.3/	20/02/2015	Yes, between 09/06/2012 and 10/07/2012	Paneles Arauco S.A	N/A
465-PIT-9001-B	HC <sub>BL,y</sub>	6404008679	Pressure transmitter 11.5 bar (operated until 01/04/2014)	+/- 0.075% /9.20/	18 months /9.12/	09/12/2010 /10.18.1/ 10/07/2012 /10.18.2/ 22/08/2013 /10.18.3/	21/02/2015	Yes, between 09/06/2012 and 10/07/2012	Paneles Arauco S.A	N/A
		6404022864 Not included in MR because is out of this monitoring period	Pressure transmitter 11.5 bar (in operation from 01/04/2014)	+/- 0.075% /9.41/	18 months /9.41/	01/04/2014 /10.18.4/	31/08/2014	No	Paneles Arauco S.A	N/A
465-TT-9026	HC <sub>BL,y</sub>	456304	Temperature transmitter 11.5 bar Rosemount 3244MV1 NAA01B4C2C4Q4	+/- 0.10 °C /9.22/	5 years /9.13/	11/12/2010 /10.23.1b/ 07/07/2012 /10.23.2/ 21/08/2013 /10.23.3/	20/08/2018	No	Paneles Arauco S.A	N/A
465-FT-9019	HC <sub>BL,y</sub>	34310	Steam flow Meter 5.5 bar (AASA) Rosemount 3051SFADS1 20DCHPS2T10007 2AF1A2G2Q4F2	+/- 0.025% /9.21/	5 years /9.13/	09/12/2010 /10.11.1/ 11/07/2012 /10.11.2/ 23/08/2013 /10.11.3/	22/08/2018	No	Paneles Arauco S.A	N/A
465-FT-9023	HC <sub>BL,y</sub>	24439	Steam flow meter 5.5 bar (Boiler) Rosemount 3051SFADS1 80ZCHPS52T1000	+/- 0.025% /9.21/	5 years /9.13/	10/12/2010 /10.12.1/ 10/07/2012 /10.12.2/ 23/08/2013 /10.12.3/	22/08/2018	No	Paneles Arauco S.A	N/A
462-FT-9150	HC <sub>BL,y</sub>	6404006181	Steam flow meter 5.5 bar (Deaerator) ABB 264DSGSSB2A3 /V1/B2/I2/N6/C1	+/- 0.075 /9.20/	18 months /9.12/	08/12/2010 /10.4.1/ 07/01/2012 /10.4.2/ 02/07/2012 /10.4.3/ 20/08/2013 /10.4.4/	19/02/2015	No	Paneles Arauco S.A	N/A

Monitoring equipment	Monitoring parameter	S/N	Type	Level	Calibration frequency requirement	Calibration date	Validity	Are there delays in calibration?	Calibration Entity	Accreditation Certificate for the calibration entity Issuing authority Relevant
465-PIT-9002-A	HC <sub>BL,y</sub>	6404008685	Pressure transmitter 5.5 bar (main line) ABB 264PSPSSB2A3 /V1/L1/B2/I2/N6/C1 (in operation until 20/08/2013)	+/- 0.075 /9.20/	18 months /9.12/	09/12/2010 /10.19.1/ 07/01/2012 /10.19.2/ 10/07/2012 /10.19.3/	09/01/2014	No	Paneles Arauco S.A	N/A
		6408023636	Pressure Transmitter 5.5 bar (Main line) ABB 264PSPSSB2A1 /V1/B2/I2/N6/C1 (in operation from 20/08/2013)	+/- 0.075% /9.20-9.41/	18 months /9.12/	20/08/2013 /10.19.4/	19/02/2015	No	Paneles Arauco S.A	N/A
465-PIT-9002-B	HC <sub>BL,y</sub>	6404027440	Pressure transmitter 5.5 bar (main line) ABB 264PSPSSB2A3 /V1/L1/B2/I2/N6/C1	+/- 0.075% /9.20/	18 months /9.12/	10/12/2010 /10.20.1/ 07/01/2012 /10.20.2/ 12/07/2012 /10.20.3/ 22/08/2013 /10.20.4/	21/02/2015	Yes, from 08/06/2012 – 12/07/2012	Paneles Arauco S.A	N/A
465-PIT-9002-C	HC <sub>BL,y</sub>	6404008681	Pressure transmitter 5.5 bar (main line) ABB 264PSPSSB2A3 /V1/L1/B2/I2/N6/C1	+/- 0.075% /9.20/	18 months /9.12/	10/12/2010 /10.21.1/ 07/01/2012 /10.21.2/ 12/07/2012 /10.21.3/ 20/08/2013 /10.21.4/	19/02/2015	No	Paneles Arauco S.A	N/A
465-TT-9024	HC <sub>BL,y</sub>	456395	Temperature transmitter 5.5 bar (Main line) Rosemount 3244MVF1 NAA01B4C2C4Q4	+/- 0.10 °C /9.22/	5 years /9.13/	11/12/2010 /10.22.1/ 07/07/2012 /10.22.2/ 22/08/2013 /10.22.3/	21/08/2018	No	Paneles Arauco S.A	N/A
468-PM-008	ELP <sub>J, gross,y</sub>	PB-0401A161-11	Energy meter switchgear 1-8 Power Measurement ION 7330 V277 (operated until 22/08/2013)	+/- 0.5% /9.18/	7 years /9.9/	12/12/2010 /10.33/ (last verification)	31/12/2013 /10.33/ Validity extended by manufacturer	No	Schneider electric	Manufacturer
		PB-1210A067-11	Energy Meter Switchgear (1-8) Power Measurement ION 7330 V277 C/ETH (in operation from 22/08/2013)	+/- 0.3% /9.39/	7 years /9.9/	05/10/2012 /9.40/	04/10/2019	No	Schneider electric	Manufacturer

Monitoring equipment	Monitoring parameter	S/N	Type	Level	Calibration frequency requirement	Calibration date	Validity	Are there delays in calibration?	Calibration Entity	Accreditation Certificate for the calibration entity Issuing authority Relevant
468-PM-006	ELPJ,aux,y	PB-0401A178-11	Energy meter switchgear 1-6 Power Measurement ION 7330 V277 (operated until 22/08/2013)	+/- 0.5% /9.18/	7 years /9.9/	12/12/2010 <sup>/10.33/</sup> (last verification)	31/12/2013 <sup>/10.33/</sup> Validity extended by manufacturer	No	Schneider electric	Manufacturer
		PB-1210A467-11	Energy meter switchgear 1-6 Power Measurement ION 7330 V277 C/ETH (in operation from 22/08/2013)	+/- 0.3% <sup>/9.39</sup>	7 years /9.9/	31/10/2012 <sup>/9.40/</sup>	30/10/2019	No	Schneider electric	Manufacturer
468-PM-003	ELPJ,imp,y)	PB-0607A312-11	Energy meter switchgear 1-3 Measurement ION 7330 V277. CAR raised (operated until 22/08/2013)	+/- 0.5% /9.18/	7 years /9.9/	12/12/2010 <sup>/10.33/</sup> (last verification)	31/12/2013 <sup>/10.33/</sup> Validity extended by manufacturer	No	Schneider electric	Manufacturer
		PB-1210A504-11	Energy meter switchgear 1-3 Measurement ION 7330 V277 C/ETH (in operation from 22/08/2013)	+/- 0.3% <sup>/9.39</sup>	7 years <sup>/9.9/</sup>	01/11/2012 <sup>/9.40/</sup>	31/10/2019	No	Schneider electric	Manufacturer

## 9.1 Summary of compliance with the calibration frequency requirements for measuring instruments.

The calibration of the following measuring equipment has an impact on the claimed emission reductions:

- A. Weighbridge TAG 463-FIQ-174, 531-WI-5518A, 431-FIQ-502 for measuring the weight of the biomass fed into the power boiler.
- B. Electronic moisture analyser (No TAG number) to measuring biomass moisture content.
- A. Weighbridge: North entrance (No TAG number), South entrance (No TAG number), and truck exit (No TAG number) for measuring the weight of the biomass brought from external sources.
- B. Level transmitter 461-LT-0460, for measuring fossil fuel consumption in the power boiler.
- C. Pressure transmitters TAG 463-PT-0106, 463-PT-0403, 465-PIT-9000-A, 465-PIT-9000-B, 465-PIT-9001-A, 465-PIT-9001-B, 465-PIT-9002-A, 465-PIT-9002-B, 465-PIT-9002-C for measuring the steam pressure in the process lines.
- D. Temperature transmitters TAG 463-TT-0110, 463-TT-0406, 465-TT-9028, 465-TT-9026, 465-TT-9024, for measuring the steam temperature in the process lines.
- E. Flow meters TAGS 465-FT-9027, 565-FT-0965, 465-FT-9019, 465-FT-9023, 462-FT-9150, 463-FT-0402, 465-FT-9025 for measuring process steam.
- F. Electric meters TAG 468-PM-006, 468-PM-008 and 468-PM-003 for measuring electric generation, imports and consumption in the power plant.

It was verified that all the measurement equipment operated with valid calibration certificates throughout the monitoring period, with the only exception of the followings where the PP applied the corrective actions specified on the Paragraphs 283 a) & b) of the VVS version 7.0.

- Level transmitter, TAG 461-LT-0460, S/N 6404010868, delayed calibration from 07/06/2012 to 09/07/2012, **CAR 5 item 1 was previously raised and closed.** The PP provided the revised calculation files<sup>/8.7.1.c/</sup> where an error equal to 0.295% following a conservative approach was applied to the whole month of June and July 2012.  
It was found that the correction done in file ref. 8.7.1.c (June and July 2012) applies an error equal to 0.295%, which is the equivalent error (in liters) of the maximum error found in the delayed calibration<sup>/10.3.2/</sup>. Thus it has been verified that VVS paragraph 283b has been followed and that paragraph 284 is correctly applied.
- Steam flow meter, TAG 463-FT-0402, S/N 6403015454, delayed calibration from 07/06/2012 to 09/07/2012. **CAR 5 item 1 was previously raised and closed.** The PP corrected the values as per VVS version 7, the correction was applied in the Excel file<sup>/8.10.1.c/</sup> that contains the daily steam records. The correction was done from 07/06/2012 until 09/07/2012. Later it was verified that the sum of the daily values was transcript into "integradores"<sup>/8.10.2.c/</sup>. The correction was done in a conservative way because the higher error (0.5%) between the found in the calibration and the accuracy was applied.
- Pressure transmitters, TAG 463-PT-0403, S/N, 6403015460, TAG 465-PIT-9000-A, S/N 6404008677, TAG 465-PIT-9000-B, S/N 6404008676, TAG 465-PIT-9001-A, S/N 6404008680, TAG 465-PIT-9001-B, S/N 6404008679 and TAG 465-PIT-9002-B, S/N 6404027440, had delayed calibration. **CAR 5 item 1 was previously raised and closed.** In the case of the pressure meters (463-PT-0403, 465-PIT-9000-A, 465-PIT-9000-B, 465-PIT-9001-A, 465-PIT-9001-B) the PP applied a correction in the value of the pressure used to determine the steam enthalpy<sup>/5h/</sup>. The correction applied was done in a conservative way, it was verified that for each of the related equipments the higher error between the ones found at the calibration and the accuracy was applied.
- Moisture analyzer, s/n B235265966. **CAR 5 item 6 was previously raised and closed.**  
As per VVS version 7 para 283, the PP corrected the measured values applying the maximum permissible error, which is lower that the error found at the calibration<sup>/10.30.c/</sup>. It was

verified that the error was applied in a conservative way in the ER spreadsheet calculation version 8<sup>/5h/</sup>, tab “2013 Data”, cells Q51:Q54, thus the values of the whole month (December 2013) were corrected. The error is applied in order to reflect the error in the measurement of the wet and dry biomass. Due to this correction there was a decrease of 1 tCO<sub>2e</sub> in the verified period, in comparison with the previous version of the ER spreadsheet<sup>/5h/</sup>.

Thus it is confirmed that the calculation are in compliance with VVS version 7 paragraph 284..

It is confirmed that for all the delayed calibrations that have been identified and reported above, the error is applied;

- I. In a conservative manner such that the adjusted measured values of the delayed calibration shall result in fewer claimed emission reductions.
- II. For all measured values taken during the period between the scheduled date of calibration and the actual date of calibration.

## 9.2 Accuracy of Emission Reduction Calculations

The calculation of emission reductions is found to be correct, 1 CAR and 6 CLs were raised related to the calculation of emission reductions, response to CAR and CLs was satisfactory and these were closed. The details of the reported and the verified values for all parameters are listed in section 10, ‘Calculation of Emission Reductions’.

## 9.3 Quality of Evidence to Determine Emission Reductions

Critical parameters used for the determination of the Emission Reductions are discussed in section 3.4 above. All the data recorded is in compliance with the monitoring report.

## 9.4 Management and operational System and Quality Assurance

The company involved in the project has its own internal procedures to ensure the quality assurance system implemented, therefore we can confirm that the management system of the CDM project is in place, with the responsibilities properly identified and in place.

In order to verify data quality, the PP works in accordance with a quality assurance procedure “TA05-GEN-PR-013” Monitoring of variables to calculate GHG emission reductions<sup>n/11.4/</sup>, which establishes the operational and management structure implemented.

## 9.5 Data from External Sources

### Parameter 8: Weight average CO<sub>2</sub> emission factor of fuel type *i* in year *y*. $EF_{CO_2,i,y}^*$

This parameter is monitored as per the requirements “Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion” version 02.

As per the registered PDD<sup>/1/</sup> the parameter  $EF_{CO_2,i,y}$  (Weight average CO<sub>2</sub> emission factor of fuel type *i* in year *y*) will be obtained following option d) “IPCC default value at the upper limit of the uncertainty at a 95% confidence interval as provided in table 1.4 of Chapter 1 of Vol.2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories” of the “Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion” version 02. Later this parameter shall be used as per option B of the Tool in order to calculate the  $COEF_{i,y}$ .

According to the ERs spreadsheet version 1<sup>/5a/</sup> tabs “2012 Emissions” and “2013 Emissions”, rows 66 – 99, it was found that the mentioned option B was not followed. **CL 8 was raised.**

The PP provided the updated ER excel file<sup>/5b/</sup>, it was verified that PP corrected the calculation to obtain  $COEF_{i,y}$  according with the “Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion”



version 02". It was verified as well that  $EF_{CO_2,i,y}$  of the reported fuels (diesel, fuel oil and LPG) are correct against IPCC 2006, *table 1.4 of Chapter 1 of Vol.2 (Energy)*.

It was verified that the values reported in MR version 5<sup>/4e/</sup> are correct against IPCC and consistent with values used for ER calculations.

**CL 8 closed.**

Finally it was verified that the value of the parameter used in the ER calculation file<sup>/5h/</sup> and the MR version 9<sup>/4i/</sup> are correct.

**Parameter 10: Quantity of fuel type  $i$  combusted in process  $j$  during the year  $y$ . ( $FC_{i,Project Site,y}$ )**

The parameter is monitored in order to calculate the project emissions following equation 37 of the ACM0006 version 12.1.1.<sup>/3.3/</sup> and equation 1 of the Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion<sup>/3.5/</sup>.

As per the PDD<sup>/1, 1.3/</sup>, this parameter corresponds to the diesel consumption due to the movement of biomass residues in the storage area by trucks, diesel-fuelled bulldozers and/or front loaders. As per the PDD<sup>/1, 1.3/</sup> the parameter is defined based on the subcontractors information.

In order to assess the reported information, the pp was requested to provide the supporting evidence linked to this parameter. **CL 9 item 1 was raised.**

The following set of data was provided by the Project Participant to verify the accuracy of the monitoring of this parameter, including the following evidence:

- A set of monthly spreadsheets containing detailed information on the fuel consumption of trucks and front loaders consumption 2012<sup>/8.8.2b/</sup> and 2013<sup>/8.8.3b/</sup>.
- Yearly spreadsheets containing summary of fuel consumption and distance travelled of trucks and front loaders<sup>/8.8.6b - 8.8.7/</sup>.

The data necessary to calculate this parameter is obtained from subcontractors' information, and it is used directly in the ER spreadsheet<sup>/5c/</sup>, using the information in the supporting spreadsheets. The total fuel consumption of trucks and front loaders is available separately on a monthly basis<sup>/8.8.2b - 8.8.3b/</sup>. Monthly fuel consumption is aggregated and reported in the ER spreadsheet<sup>/5c/</sup>, sheets "2012 data" & "2013 data", row 96.

After review of the information, inconsistencies were found for December 2012 in the ER excel files<sup>/4c/</sup>, the MR<sup>/5c/</sup> and the supporting documents<sup>/8.8.2b - 8.8.3b - 8.8.6b - 8.8.7/</sup>. The PP provided an updated version of the ER<sup>/4d/</sup>, the MR<sup>/5d/</sup> where the information reported was consistent. **Item closed.**

Through the review of the documents<sup>/8.8.2b - 8.8.3b - 8.8.6b - 8.8.7/</sup>, and the ER calculation spreadsheets<sup>/5h/</sup> and the on-site inspection, it can be confirmed that the implementation of the monitoring system and procedures for this parameter is in compliance with the registered PDD and the applied methodology ACM0006 version 12.1.1.<sup>/3.3/</sup> and Tool<sup>/3.5/</sup>.

**Parameter 11: Quantity of fuel type  $i$  combusted in process  $j$  during the year  $y$  ( $FC_{i,Biomass Processing,y}$ )**

The parameter is monitored in order to determine the amount of heat that would be generated in the baseline, as per ACM0006 version 12.1.1.<sup>/3.3/</sup>.

As per the registered and revised PDD<sup>/1, 1.3/</sup>, this parameter corresponds to the diesel consumption to process the biomass from forest operations, this parameter is obtained from the subcontractors (third independent party).

In order to have the supporting evidence to crosscheck the data reported by the PP **CL 9 item 1 was raised.** The PP provided the diesel consumption reported by the service supplier<sup>/8.15.1, 8.15.2, 8.15.3/</sup>. It was verified that the diesel consumption corresponding to the parameter " $FC_{i,Biomass Processing}$ " reported in the ER excel file<sup>/5d/</sup>

and MR<sup>/4d/</sup> is correct against the information from the external provider who is in charge of processing the biomass from forest operation. **CL 9 item 1 was closed.**

**Parameter 19: Weight average net calorific value of fossil fuel type i in year y. (NCV<sub>FF,i,y</sub>)**

This parameter is monitored as per the requirements “Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion” version 02.

This parameter is equivalent to NCV<sub>i</sub> (Net calorific value of biomass or fossil fuel type i), but in this case it is only for the fossil fuels. As per the MR, the PP selected default IPCC values at the upper limit at 95% confidence level, the source is deemed correct as per the Tool<sup>/3.5/</sup> given that there is no specific information from providers. Finally it was verified that the values included in the MR<sup>/4h/</sup> and ER calculation file<sup>/5h/</sup> are correct against IPCC 2006.

Fuel	NCV [TJ/1000t] MR version 9 <sup>/4i/</sup>	NCV [TJ/1000t] (IPCC values) <sup>/3.10/</sup>
Diesel	43.3	41.4 – 43.3
IFO 180	41.7	39.8 – 41.7
LPG	52.2	44.8 – 52.2

**Parameter 20: CO<sub>2</sub> emission factor for grid electricity during year y, EF<sub>grid,CM,y</sub>**

According to the registered PDD and the Tool to calculate the emission factor for an electricity system v3.0 has to be calculated as follow:

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times W_{OM} + EF_{grid,BM,y} \times W_{BM}$$

The EF<sub>OM</sub> is calculated and assessed below.

For the second crediting period, the build margin emission factor shall be calculated ex ante at the time of submission of the request for renewal of the crediting period. A BM of 0.695 tCO<sub>2</sub>e/MWh was validated at the revalidation stage; despite this a BM of 0.643 tCO<sub>2</sub>e was calculated for this monitoring period in the 2012 GEF calculation spreadsheet. **CAR 15 item h was raised.** The PP provided the updated GEF calculation spreadsheets 2012 and 2013<sup>/6.1b & 7.1b/</sup>, in which no BM calculation was included because it is an ex-ante parameter. **Item closed.**

Regarding the weighting factors (W<sub>OM</sub> & W<sub>BM</sub>), it was verified that the PP used 0.25 and 0.75 respectively in the GEF files<sup>/6.1.d&7.1.e/</sup>, the values are correct against the Tool<sup>/3.4/</sup>, paragraph 81b, where is stated that for the second and third crediting periods W<sub>OM</sub> = 0.25 & W<sub>BM</sub> = 0.75 has to be considered. It was verified as well that ACM0006, version 12.1.1, does not prescribe a specific condition regarding the weighting factors, thus the values considered by the PP are deemed correct.

**Parameter 21: CO<sub>2</sub> Operating Margin emission factor of the grid, EF<sub>grid,OM,y</sub>**

The parameter is required as the registered PDD and the Tool to calculate the emission factor for an electricity system v3.0.

The calculation followed by the PP to obtain EF<sub>OM</sub> 2012 and 2013 are available in the GEF excel files<sup>/6.1.b&7.1.b/</sup>, all the steps followed to calculate the EF<sub>OM</sub> are correct against the Tool<sup>/3.4/</sup>. Even though no calculation mistakes were found, in the GEF calculation spreadsheets 2012 and 2013, sheets “Gen SIC data”, “SIC emission indices” and “SIC emissions”, wind power plants are referred to as “Aeolics”. **CAR 15 item d was raised.** Similarly it was found that the power plant Watts is identified as CDM project in the calculation of the 2013 grid emission factor (GEF), but not for the 2012 GEF. **CAR 15 item e was raised.** The PP provided the updated GEF calculation files 2012 and 2013<sup>/6.1b & 7.1b/</sup>, it was verified that sheets “Gen

SIC data”, “SIC emission indices” and “SIC emissions” were corrected. It was verified as well that the updated GEF calculation spreadsheets 2012 and 2013<sup>/6.1b-7.1.b/</sup> corrected the status of “Watts” (no CDM plant). **Items d&e were closed.** Finally in order to solve a typo in the year reported in GEF calculation file 2013, the PP provided the updated file<sup>/7.1e/</sup>, it was verified that the new file<sup>/7.1e/</sup> has correctly stated in tab “Lambda SIC 2013” the year corresponding to the data reported, it is worth to mention that the correction introduced did not have an impact over the  $EF_{OM}$  calculation. **CAR 15 was closed.**

Regarding the raw data involved in the calculation, it is individually assessed in parameters 22 to 25) please see the below.

**Parameter 22: Amount of fossil fuel type l consumed per power plant,  $FC_{i,m,y} - F_{ci,k,y}$**

This parameter is monitored as per the requirements “Tool to calculate the emission factor for an electricity system”<sup>/3.4/</sup> version 03.0.

According to the Monitoring Plan<sup>/1.1.3/</sup> and the applied Tool<sup>/3.4/</sup>, this parameter should be obtained from utility or government records. In Chile, the fuel consumption of the generation power plants is recorded by the relevant dispatch center, electric power companies public information and host country official information.

The fuel consumption includes non-renewable power plants powered by LNG, diesel, coal, IFO180, propane, butane and natural gas. The fuel consumption reported by the PP in the excel calculation files to obtain the  $EF_{om}$ <sup>/6.1.a - 7.1.a/</sup> was crosschecked against the original source of data.

For 2012 data, it was found that in GEF spreadsheet<sup>/6.1.a/</sup>, tab “SIC emission indices” the fuel consumption of the power plants San Isidro GNL, Guacolda 1,2, 3 &4, Nehuenco TG 9B GN, Trapen, Teno, El Peñon, Candelaria Diesel, Nueva Renca FA, Nueva Renca GN, Degan, Punta Colorada IFO, Cem Bio Bio IFO, was not consistent with the value verified in the data source<sup>/6.2/</sup>. **CAR 15 item g was raised.** The PP provided an update version of the GEF excel file<sup>/6.1.b/</sup>, it was verified that the fuel consumption of San Isidro GNL, Guacolda 1,2, 3 &4, Nehuenco TG 9B GN, Trapen, Teno, El Peñon, Candelaria Diesel, Nueva Renca FA, Nueva Renca GN, Degan, Punta Colorada IFO, Cem Bio Bio IFO was corrected in the grid emission factor 2012 file<sup>/6.1b/</sup> and the new data reported and used for the calculations is correct against the CDEC records<sup>/6.2/</sup>. **Item closed.**

For 2013 data, it was found that in the excel spreadsheet<sup>/7.1.a/</sup>, the file named “SGA\_20131224.xls” is indicated as source for determining the specific fuel consumption, however such spreadsheet was not provided. In addition, CDEC-SIC 2013 yearbook is indicated as information source, although the latest version available at CDEC-SIC website includes information up to 2012. The PP was requested to provide the missing documentation and clarify the information source used to determine the fuel consumption during 2013. **CAR 15 item c was raised.** Similarly, it was found that the reported values for 2013 Specific fuel consumption of the power plants Esperanza 1 and Esperanza 2 are not consistent with the data source indicated in the spreadsheet (CDEC-SIC node price report, October 2013). **CAR 15 item i was raised.** In order to solve some editorial issues and ensure data sources completeness in the GEF spreadsheet<sup>/6.1.c - 7.1.c/</sup>, **Item j was raised.**

The PP provided the missing file “SGA\_20131224.xls”<sup>/7.6/</sup>, the fuel consumption was crosschecked and found correct. Additionally, it was verified that Esperanza 1 and Esperanza 2 run by diesel and that the specific consumption informed in Node price report<sup>/7.8/</sup> is expressed in  $m^3/Mwh$ . Thus the values reported by the PP in the 2013 GEF file<sup>/7.1.b/</sup> are correct, they were transformed into kg/kwh using the density informed in the National Energy Balance. Finally the GEF spreadsheet<sup>/6.1.d - 7.1.d/</sup> reports all the information required in a complete manner. **Items c, i & j were closed.**

It has been verified that the PP obtained the data from government records, CDEC-SIC 2013 Operational Statistics Yearbook<sup>/6.2/</sup> which covers electrical statistics from 2003 until 2012 and from CDEC records<sup>/7.6 & 7.8/</sup> for 2013 data. In the cases when direct fossil fuel consumption was not available (e.g. for some plants with more than one generating unit), specific fuel consumption was obtained from Node Prices Report SIC.

Finally it was verified that the data of the parameter was correctly used in the  $EF_{OM}$  calculation<sup>/6.1.d&7.1.e/</sup>.

### Parameter 23: Net calorific value of fossil fuel I in year y, $NCV_{i,y}$

This parameter is monitored as per the requirements “Tool to calculate the emission factor for an electricity system”<sup>/3.4/</sup> version 03.0.

According to the Monitoring Plan<sup>/1, 1.3/</sup> and the applied Tool<sup>/3.4/</sup>, this parameter should be obtained from the supplier, regional or national default available values or IPCC default values.

As per the MR<sup>/4a/</sup> the parameter was obtained from the National Energy Balance issued by the CNE/Ministry of Energy, the criteria is deemed correct given that the PP does not have access to the information. . The MR indicates that 2012 National Energy Balance as an official source of information for this parameter, however, 2012 and 2013 GEF calculation spreadsheets<sup>/6.1.a-7.1.a/</sup> mention 2011 and 2010 National Energy balance as data source. **CAR 15 item b was raised.** It was verified that the updated grid emission factor spreadsheets<sup>/6.1b & 7.1b/</sup> refers to National Energy Balance 2011 & 2012<sup>/6.4 & 7.5/</sup>, it worth to mention that the NCV reported in national Energy Balances 2011 & 2012 are the same. **Item closed.**

The data reported in the MR was reviewed and it was found that the  $NCV_{i,y}$  reported on MR version 1<sup>/4a/</sup> page 38 is different to those reported in sheet “fossil fuel data” in 2012 and 2013’s Grid emission factor calculation spreadsheets<sup>/6.1.a – 7.1.a/</sup>. **CAR 15 item a was raised.** It was verified that NCV values included in the grid emission factor spreadsheets<sup>/6.1b & 7.1b/</sup> are correct against the source. The values are corrected by a factor equal to 5% (10% for natural gas) in order to convert the values in NCV for the ER calculations<sup>/5b/</sup>, however this explanation was not included in MR version 2. It was verified that MR version 3<sup>/4c/</sup> reports correctly the NCV values, they corresponds to the values reported by the local authority<sup>/6.4 & 7.5/</sup> with the application of the factor to convert the values from gross calorific value to net calorific value. The MR informs as well the application of this factor. Finally the values are consistent with the ones available in the GEF spreadsheet<sup>/6.1.b & 7.1.b/</sup>. **Item closed.**

As it was stated before, the calorific values were obtained from the National Energy Balance published by the Chilean Ministry of Energy<sup>/7.5/</sup>. It was verified that in the GEF calculation files, tab “Fossil fuel data”, columns I, J & K the NCV of each fossil fuel is reported, and the values correspond to the calorific value reported in the National Energy Balance multiplied by a factor equal to 0.95 and 0.9 in order to convert the data in Net Calorific Value. It was verified that the procedure applied is correct as per IPCC 2006 Guidelines, Volume 2, chapter 1, section 1.4.1.2. Thus it was verified that NCV values reported in MR version 2<sup>/4b/</sup> (and the subsequent versions) and used in the  $EF_{OM}$  calculations are correct.

Finally, it was verified that NCVs reported in MR version 9<sup>/4i/</sup> are consistent in comparison with the IPCC values, please see the summary in the following table.

Fuel	NCV [TJ/1000t] MR version 9 <sup>/4i/</sup>	NCV [TJ/1000t] (IPCC values) <sup>/3,10/</sup>
Coal	27.8	19.5 – 30.5
Petcoke	27.8	29.7 – 30.5
Diesel	43.3	41.4 – 43.3
N. Gas	35.2 (GJ/1000 m <sup>3</sup> )	46.5 – 50.4
IFO 180	41.8	39.8 – 41.7
Butane/propane (LPG)	45.6	44.8 – 52.2
LNG	35.2 (GJ/1000 m <sup>3</sup> )	40.9 – 46.9

**Parameter 24: CO<sub>2</sub> emission factor of fossil fuel type l used in power unit m in year y**

This parameter is monitored as per the requirements “Tool to calculate the emission factor for an electricity system”<sup>n/3.4/</sup> version 03.0.

According to the Monitoring Plan<sup>/1.1.3/</sup> and the applied Tool<sup>/3.4/</sup>, this parameter should be obtained from the supplier, regional or national default available values or IPCC default values.

As per the MR<sup>/4f/</sup> the parameter was obtained from IPCC, the criteria is deemed correct given that the parameter is not publicly available.

In the 2013 GEF calculation spreadsheet<sup>/7.1.a/</sup>, sheet “Fossil fuel data”: the Fossil fuel CO<sub>2</sub> emission factor EF<sub>CO<sub>2</sub>,y</sub> is not calculated as specified in the Monitoring plan in the registered PDD. **CAR 15 item f was raised.** It was verified that the PP corrected the calculation procedure for year 2013<sup>/7.1.b/</sup> to obtain the emission factor (tCO<sub>2</sub>/ton) of each fuel. It is correctly obtained as the NCV\*EF. The calculation procedure is consistent with the one used for year 2012<sup>/6.1.b/</sup>. **Item closed.**

Similarly it was found that the EFCO<sub>2,i</sub>, /carbon content used in 2012&2013 for coal was wrong. **CAR 15 item a was raised.** It was verified that MR version 3<sup>/4c/</sup> reports correctly the NCV values, they corresponds to the values reported by the local authority<sup>/6.4 & 7.5/</sup> with the application of the factor to convert the values from gross calorific value to net calorific value. The MR informs as well the application of this factor. Finally the values are consistent with the ones available in the GEF spreadsheet<sup>/6.1.b & 7.1.b/</sup>. **Item closed.**

Finally it was verified that NCV reported is correctly used in the calculations to obtain the EF<sub>OM</sub><sup>/6.1.d & 7.1.e/</sup>.

**Parameter 25: Net electricity generated by power plant/unit m and k in year y**

This parameter is monitored as per the requirements “Tool to calculate the emission factor for an electricity system”<sup>n/3.4/</sup> version 03.0.

According to the Monitoring Plan<sup>/1.1.3/</sup> and the applied Tool<sup>/3.4/</sup>, this parameter should be obtained from utility or government records. In Chile, the fuel consumption of the generation power plants is recorded by the relevant dispatch center, electric power companies’ public information and host country official information.

The information reported in the EF<sub>OM</sub> calculation spreadsheets<sup>/6.1.d – 7.1.d/</sup> was crosschecked against the respective sources. It was verified that all the information reported in this regard was consistent with the original sources of information<sup>/6.9 – 7.4/</sup> issued by the local authority. Hence, it was confirmed that data reported for this parameter is correct.

## 10. Calculation of Emission Reductions

Parameter	Reported Value MR version 1 <sup>/4a/</sup> ER excel file version 1 <sup>/5a/</sup>	Verified Value MR version 9 <sup>/4i/</sup> ER excel file version 8 <sup>/5h/</sup>																								
Parameter 1: Biomass residues categories and quantities used in the project activity.	No reported	<table><tr><th>Biomass category k</th><th>2012, tons</th><th>2013, tons</th></tr><tr><td>1</td><td>11,790</td><td>12,838</td></tr><tr><td>2+3</td><td>17,897</td><td>70,648</td></tr><tr><td>4</td><td>175,867</td><td>151,537</td></tr><tr><td>5</td><td>7,987</td><td>10,701</td></tr></table>	Biomass category k	2012, tons	2013, tons	1	11,790	12,838	2+3	17,897	70,648	4	175,867	151,537	5	7,987	10,701									
Biomass category k	2012, tons		2013, tons																							
1	11,790		12,838																							
2+3	17,897		70,648																							
4	175,867		151,537																							
5	7,987	10,701																								
Parameter 2: Quantity of biomass residues of category n used in the CDM project activity in year y (tonnes on dry-basis) (BR <sub>PJ,n,y</sub> )	<table><tr><th>Biomass category k</th><th>2012, tons</th><th>2013, tons</th></tr><tr><td>1</td><td>11,747</td><td>12,841</td></tr><tr><td>2+3</td><td>17,753</td><td>70,648</td></tr><tr><td>4</td><td>175,867</td><td>155,404</td></tr><tr><td>5</td><td>0</td><td>10,691</td></tr></table>	Biomass category k	2012, tons	2013, tons	1	11,747	12,841	2+3	17,753	70,648	4	175,867	155,404	5	0	10,691										
Biomass category k		2012, tons	2013, tons																							
1		11,747	12,841																							
2+3		17,753	70,648																							
4	175,867	155,404																								
5	0	10,691																								
Parameter 3: Quantity of biomass residues of category k used in the Project activity in year y for which the baseline scenario is B4 (tonnes on dry-basis) (BR <sub>B4,n,y</sub> )																										
Parameter 4: Quantity of biomass residues of category n used in the project activity in year y for which the baseline scenario is B1 or B3 (tonnes on dry-basis) (BR <sub>B1/B3,n,y</sub> )																										
Parameter 5: Quantity of biomass residues of category n used in the project activity in year y for which the baseline scenario is B5:, B6:, B7, or B8 (tonnes on dry-basis) (BR <sub>B5/B8,n,y</sub> )																										
Parameter 6: Total mass of freight transported in freight transportation activity f in monitoring period m. (FR <sub>f,m</sub> )	<table><tr><th>Period</th><th>tons</th></tr><tr><td>2012</td><td>167,894</td></tr><tr><td>2013</td><td>149,190</td></tr></table>	Period	tons	2012	167,894	2013	149,190	<table><tr><th>Period</th><th>tons</th></tr><tr><td>2012</td><td>53,791</td></tr><tr><td>2013</td><td>50,584</td></tr></table>	Period	tons	2012	53,791	2013	50,584												
Period	tons																									
2012	167,894																									
2013	149,190																									
Period	tons																									
2012	53,791																									
2013	50,584																									
Parameter 7: Return trip road distance between the origin and destination of freight transportation activity f in monitoring period m. (D <sub>f,m</sub> )	Information included in the relevant parameter	Information included in the relevant parameter																								
Parameter 8: Weight average CO <sub>2</sub> emission factor of fuel type i in year y. EF <sub>CO2,i,y</sub> *	<table><tr><th>Fuel</th><th>tCO<sub>2</sub>/GJ</th></tr><tr><td>Diesel</td><td>0.0748</td></tr><tr><td>LPG</td><td>0.788</td></tr><tr><td>Fuel oil</td><td>0.656</td></tr></table>	Fuel	tCO <sub>2</sub> /GJ	Diesel	0.0748	LPG	0.788	Fuel oil	0.656	<table><tr><th>Fuel</th><th>tCO<sub>2</sub>/GJ</th></tr><tr><td>Diesel</td><td>0.0748</td></tr><tr><td>LPG</td><td>0.788</td></tr><tr><td>Fuel oil</td><td>0.656</td></tr></table>	Fuel	tCO <sub>2</sub> /GJ	Diesel	0.0748	LPG	0.788	Fuel oil	0.656								
Fuel	tCO <sub>2</sub> /GJ																									
Diesel	0.0748																									
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Fuel	tCO <sub>2</sub> /GJ																									
Diesel	0.0748																									
LPG	0.788																									
Fuel oil	0.656																									
Parameter 9: Quantity of fuel type i combusted in process j during the year y FC <sub>i, Project Plant,y</sub>	<table><tr><th>Fuel (tons)</th><th>2012</th><th>2013</th></tr><tr><td>Diesel</td><td>1,434</td><td>247</td></tr><tr><td>LPG</td><td>0</td><td>0</td></tr><tr><td>Fuel oil</td><td>0</td><td>0</td></tr></table>	Fuel (tons)	2012	2013	Diesel	1,434	247	LPG	0	0	Fuel oil	0	0	<table><tr><th>Fuel (tons)</th><th>2012</th><th>2013</th></tr><tr><td>Diesel</td><td>1,433.92</td><td>246.8</td></tr><tr><td>LPG</td><td>0</td><td>0</td></tr><tr><td>Fuel oil</td><td>0</td><td>0</td></tr></table>	Fuel (tons)	2012	2013	Diesel	1,433.92	246.8	LPG	0	0	Fuel oil	0	0
Fuel (tons)	2012	2013																								
Diesel	1,434	247																								
LPG	0	0																								
Fuel oil	0	0																								
Fuel (tons)	2012	2013																								
Diesel	1,433.92	246.8																								
LPG	0	0																								
Fuel oil	0	0																								
Parameter 10: Quantity of fuel type i combusted in process j during the year y. (FC <sub>i, Project Site,y</sub> )	<table><tr><th>Period</th><th>tons</th></tr><tr><td>2012</td><td>78</td></tr><tr><td>2013</td><td>64</td></tr></table>	Period	tons	2012	78	2013	64	<table><tr><th>Period</th><th>tons</th></tr><tr><td>2012</td><td>78.83</td></tr><tr><td>2013</td><td>64.38</td></tr></table>	Period	tons	2012	78.83	2013	64.38												
Period	tons																									
2012	78																									
2013	64																									
Period	tons																									
2012	78.83																									
2013	64.38																									



Parameter	Reported Value MR version 1 <sup>/4a/</sup> ER excel file version 1 <sup>/5a/</sup>			Verified Value MR version 9 <sup>/4i/</sup> ER excel file version 8 <sup>/5h/</sup>				
Parameter 11: Quantity of fuel type i combusted in process j during the year y ( $FC_{i,Biomass Processing,y}$ )	Period	tons		Period	tons			
	2012	78		2012	17.9			
	2013	64		2013	69.17			
Parameter 12: Project Emission Parameters: CH <sub>4</sub> emission factor for the combustion of biomass residues in the Project Plant ( $EF_{CH_4,BR}$ )	0.0000			0.000000				
Parameter 13: Baseline process heat generation in year y ( $HC_{BL,y}$ )	Period	GJ		Period	GJ			
	2012	1,334,797		2012	1,338,262			
	2013	1,890,482		2013	1,890,482			
Parameter 14: Gross quantity of electricity generated in all power plants which are located at the project site and included in the project boundary in year y (MWh) ( $EL_{PJ,gross,y}$ )	Period	MWh		Period	MWh			
	2012	170,723		2012	169,067			
	2013	138,313		2013	138,214			
Parameter 15: Project electricity imports from the grid in year y (MWh) ( $EL_{PJ,imp,y}$ )	Period	MWh		Period	MWh			
	2012	8,983		2012	9,822			
	2013	15,582		2013	15,683			
Parameter 16: Total auxiliary electricity consumption required for the operation of the power plants at the project site in year y (MWh)	Period	MWh		Period	MWh			
	2012	46,850		2012	47,080			
	2013	47,838		2013	48,543			
Parameter 17: Net calorific value of biomass residues of category n in year y (GJ/tonne of dry-basis) ( $NCV_{BR,n,y}$ )	Residue type	Average 2012 (GJ/t)	Average 2013 (GJ/t)	Residue type	1st Sem 2012	2 <sup>nd</sup> Sem 2012	1st Sem 2013	2 <sup>nd</sup> Sem 2013
	B1	13.29	14.19	1	12.27	14.3	14.04	14.34
	B2+B3	18.12	19.05	2 – 3	18.31	19.76	18.73	19.38
	B4	18.12	16.67	4	18.31	16.41	17.84	16.78
	B5	16.44	18.67	5	N/D	N/D	N/A	18.67
Parameter 18: % Water content in mass basis in wet biomass residues (Moisture content of the biomass residues)	Residue type	2012	2013	Residue type	2012	2013		
	B1	69.7%	73.8%	B1	69.7%	73.8%		
	B2+B3	51.9%	52.7%	B2+B3	52%	52.7%		
	B4	54.3%	48.1%	B4	54.3%	48.1%		
	B5	-	53.7%	B5	55.6%	52.4%		
Parameter 19: Weight average net calorific value of fossil fuel type i in year y ( $NCV_{FF,i,y}$ )								
Parameter 20: CO <sub>2</sub> emission factor for grid electricity during year y, $EF_{grid,CM,y}$	Period	tCO <sub>2</sub> /MWh		Period	tCO <sub>2</sub> /MWh			
	2012	0.672		2012	0.693			
	2013	0.714		2013	0.714			
Parameter 21: CO <sub>2</sub> Operating Margin emission factor of the grid, $EF_{grid,OM,y}$	Period	tCO <sub>2</sub> /MWh		Period	tCO <sub>2</sub> /MWh			
	2012	0.602		2012	0.685			
	2013	0.771		2013	0.771			
Parameter 22: Amount of fossil fuel type I consumed per power plant, $FC_{i,m,y} - F_{ci,k,y}$	Information included in the relevant parameter			Information included in the relevant parameter				
Parameter 23: Net calorific value of fossil fuel I in year y, $NCV_{i,y}$	Fuel	NCV (GJ/ton)		Fuel	NCV (GJ/ton)			
	Diesel	45.6		Diesel	43.3			



Parameter	Reported Value MR version 1 <sup>/4a/</sup> ER excel file version 1 <sup>/5a/</sup>		Verified Value MR version 9 <sup>/4i/</sup> ER excel file version 8 <sup>/5h/</sup>	
	IFO 180	44.0	IFO 180	41.8
	Natural Gas	39.1*	Natural Gas	35.2*
	Coal	29.3	Coal	27.8
	Petcoke	29.3	Petcoke	27.8
	Butane	39.1	Butane	45.6
	Propane	39.1	Propane	45.6
	*GJ/m <sup>3</sup>		*GJ/m <sup>3</sup>	
Parameter 24: CO <sub>2</sub> emission factor of fossil fuel type l used in power unit m in year y	Fuel	EFco2 (tCO <sub>2</sub> /GJ)	Fuel	EFco2 (tCO <sub>2</sub> /GJ)
	Diesel	0.0726	Diesel	0.0726
	IFO 180	0.0722	IFO 180	0.0755
	Natural Gas	0.0543	Natural Gas	0.0543
	Coal	0.0895	Coal	0.0928
	Petcoke	0.0829	Petcoke	0.0829
	Butane	0.0616	Butane	0.0616
	Propane	0.0616	Propane	0.0616
Parameter 25: Net electricity generated by power plant/unit m and k in year y	Information included in the relevant parameter		Information included in the relevant parameter	

Based on the verified values above and the information and procedures verified in sections 3.4.1 and 3.4.10 of this report, emission reductions were calculated as per equation 1 of the methodology ACM0006 version 1, as shown below

$$ER_y = BE_y - PE_y - L_y$$

where:

$ER_y$  are the emissions reductions of the project activity during the year y in tons of CO<sub>2</sub>,  
 $BE_y$  are the baseline emissions during the year y in tons of CO<sub>2</sub>,  
 $PE_y$  are the project emissions during the year y in tons of CO<sub>2</sub>, and  
 $L_y$  are the leakage emissions during the year y in tons of CO<sub>2</sub>. In this monitoring period,  $L_y=0$  tCO<sub>2</sub>, as per ACM0006 version 12.1.1. "Changes in carbon stocks in the LULUCF sector are expected to be insignificant for biomass residues prevent changes in carbon stock requires that the project activity does not lead to a shift of pre-project activities outside the project boundary, and thus no leakage emissions are expected The baseline scenarios for biomass residues for which this potential leakage is relevant are B5:, B6:, B7: and B8". As per registered PDD the possible baseline scenarios are B1, B2, B3 & B4, thus  $LE_y = 0$ .

Based on the ACM0006 version 12.1.1, the baseline emissions are calculated using the following formula.

$$BE_y = EL_{BL,GR,y} \cdot EF_{EG,GR,y} + BE_{BR,y}$$

It was verified that the previous formula is correct, it is equivalent to equation 2 of ACM0006 version 12.1.1. but excluding the terms that are not applicable to this project activity based on the validated baseline:

Regarding the calculation of the baseline, it is correctly done in the ER excel file <sup>/5h/</sup> using the following formulae:

$$EL_{BL,GR,y} = \max(0, EL_{BL,y} - CAP_{EG,total,y})$$

$$EL_{BL,GR,2012} = \max(0, 131,382 - 0) = 131,383 \text{ MWh}$$

$$EL_{BL,GR,2013} = \max(0, 105,129 - 0) = 105,129 \text{ MWh}$$

$$EF_{EG,GR,2012} = 0.693 \text{ tCO}_2$$

$$EF_{EG,GR,2013} = 0.714 \text{ tCO}_2$$

$$BE_{BR,y} = BE_{BR,B1/B3} + BE_{BR,B2,y}$$

$$BE_{BR,B1/B3} = GWP_{CH_4} \times \sum_n BR_{B1/B3,n,y} \times NCV_{BR,n,y} \times EF_{BR,n,y}$$

$$BE_{BR,2012} = 35,343 \text{ tCO}_2$$

$$BE_{BR,2013} = 41,481 \text{ tCO}_2$$

$$BE_{2012} = 131,383 \times 0.693 + 35,343 = 126,346 \text{ tCO}_2$$

$$BE_{2013} = 105,129 \times 0.714 + 41,480 = 116,562 \text{ tCO}_2$$

Based on the ACM0006 version 12.1.1, the project emissions are calculated using the following formula

$$PE_y = PE_{FF,y} + PE_{GR1,y} + PE_{TR,y} + PE_{BR,y}$$

It was verified that the previous formula is correct, it is equivalent to equation 37 of ACM0006 version 12.1.1. but excluding the terms that are not applicable to this project activity based on the validated PDD:

The calculation of the project emissions, it is correctly done in the ER excel file<sup>/5h/</sup> using the following formulae:

$$PE_{FF,y} = \sum_i FC_{i,j,y} \cdot COEF_{i,y}$$

$$PE_{GR1} = EF_{EG,GR,y} \times EL_{PJimp,y}$$

$$PE_{TR,y} = \sum_f D_{f,m} \times FR_{f,m} \times EF_{CO2,f} \times 10^{-6}$$

$$PE_{BR,y} = GWP_{CH_4} \times EF_{CH_4,BF} \times \sum_k BR_{pj,N,Y,K,y} \cdot NCV_{BR,n,y}$$

$$PE_{2012} = 4,960 + 6,817 + 832 + 0 = 12,610 \text{ tCO}_2$$

$$PE_{2013} = 1,233 + 11,222 + 563 + 0 = 13,018 \text{ tCO}_2$$

Based on the previous values the emission reduction per year are:

$$ER_{2012} = 126,346 - 12,610 - 0 = 113,736 \text{ tCO}_2e$$

$$ER_{2013} = 116,562 - 13,018 - 0 = 103,544 \text{ tCO}_2e$$

It is important to note that the calculations and figures showing all the decimals are available in the ER excel file<sup>/5h/</sup>. It was verified that final baseline emissions were duly rounded down and project emissions rounded up.

## 11. Emission Reduction:

Period	Reported Value (as per the web hosted MR) tCO <sub>2</sub> e	Verified Value tCO <sub>2</sub> e	If Different, Summary of Issues That Caused the Difference
01/01/2012-31/12/2013	205,061	217,280	<p>The differences in the ERs are due to the following reasons:</p> <ul style="list-style-type: none"> <li>Corrections due to delayed calibrations</li> <li>Corrections due to temporary deviations</li> <li>Corrections in the biomass transported</li> <li>Corrections in the fossil fuel consumption</li> <li>Corrections in the EFom calculation</li> <li>Correction of the GWP value for period 01/01/2013-31/12/2013</li> </ul> <p>All the issues were addressed through findings, CL 2, CL 3, CL 4, CAR 5, CL 6, CL 7, CL 9, CL 13, CAR 15 &amp; CAR 16</p>
<b>CERs (Up to 31 December 2012 (1st commitment period); )</b>	109,864	113,736	
<b>CERs (From 1 January 2013 onwards.</b>	95,197	103,544	

## **12. Recommendations for Changes in the Monitoring Plan**

There are no improvement suggestions recommended with regard to the revised Monitoring Plan in this periodic verification.

### 13. Overview of Results

#### Assessment Against the Provisions of Decision 17/CP.7:

Is the project documentation in accordance with the requirements of the registered PDD and relevant provision of decision 17/CP.7, EB decisions and guidance and the COP/MOP?

*Yes. The results of the compliance assessment are recorded in the verification checklist which is used as an internal report only.*

Have on-site inspections been performed that may comprise, inter alia, a review of performance records, interviews with project participants and local stakeholders, collection of measurements, observations of established practices and testing of the accuracy of monitoring equipment?

*Yes. Alicia Fernández/Lead Assessor and Yi Liao/Expert who visited the sites and undertook interviews, collected data, audited the implementation of procedures, checked calibration certificates and checked data, inter alia.*

*The results of the site visits are recorded in the verification checklist which is used as an internal report only.*

*The evidences have been checked and collected. The final monitoring report is attached with this verification report.*

Has data from additional sources been used? If yes, please detail the source and significance.

*Yes. As indicated on section 3.10 of this report, the following data from additional sources have been used:*

- *Weight average CO<sub>2</sub> emission factor of fuel type i in year y.  $EF_{CO_2,i,y}$ . IPCC values. It has high significance*
- *Weight average net calorific value of fossil fuel type i in year y. ( $NCV_{FF,f,y}$ ). IPCC values. It has high significance*
- *CO<sub>2</sub> emission factor for grid electricity during year y,  $EF_{grid,CM,y}$ . This value is calculated using data provided by CDEC-SIC (Chilean electricity dispatch center), i.e. Electricity generation ( $GEN_i$ ) and of fuel consumption ( $F_i$ ) each grid connected power plant. It has high significance.*
- *CO<sub>2</sub> Operating Margin emission factor of the grid,  $EF_{grid,OM,y}$ . This value is calculated using data provided by CDEC-SIC (Chilean electricity dispatch center), i.e. Electricity generation ( $GEN_i$ ) and of fuel consumption ( $F_i$ ) each grid connected power plant. It has high significance.*
- *Amount of fossil fuel type l consumed per power plant,  $FC_{i,m,y} - F_{ci,k,y}$ . This value is calculated using data provided by CDEC-SIC (Chilean electricity dispatch center). It has high significance.*
- *Net calorific value of fossil fuel l in year y,  $NCV_{i,y}$ . This value is calculated using data provided by CNE (National Commission of energy). It has high significance.*
- *CO<sub>2</sub> emission factor of fossil fuel type l used in power unit m in year y. IPCC values. It has medium significance*
- *Net electricity generated by power plant/unit m and k in year y. This value is obtained from CDEC-SIC (Chilean electricity dispatch center). It has medium significance.*

Please review the monitoring results and verify that the monitoring methodologies for the estimation of reductions in anthropogenic emissions by sources have been applied correctly and their documentation is complete and transparent.

*Yes. The monitoring methodology has been correctly applied and the monitoring report and supporting references are complete and transparent.*

Have any recommendations for changes to the monitoring methodology for any future crediting period been issued to the project participant?

*No.*

Determine the reductions in anthropogenic emissions by sources of greenhouse gases that would not have occurred in the absence of the CDM project activity, based on the data and information using calculation procedures consistent with those contained in the registered project design document and the monitoring plan.

*The data used in anthropogenic emission reduction calculation is consistent with those contained in the revised PDD and monitoring plan. The emission reduction was 402,331 tCO<sub>2</sub> for the period 01/01/2012 to 31/12/2013 as per the estimation made in the revised PDD. The actual emission reduction has been verified as 217,280 tCO<sub>2</sub> for the same period.*

Identify and inform the project participants of any concerns related to the conformity of the actual project activity and its operation with the registered project design document. Project participants shall address the concerns and supply relevant additional information.

*No such non conformity of the actual project activity and its operation with the registered project design document has been observed.*

Post monitoring report on UNFCCC website

*Yes, the monitoring report is available at ref. 0258 on UNFCCC website  
<http://cdm.unfccc.int/Projects/DB/DNV-CUK1138279173.34/view>*

## 14. Verification and Certification Statement

SGS United Kingdom Ltd has been contracted by Celulosa Arauco y Constitución S.A. to perform the verification of the emission reductions reported for the CDM project activity entitled "Nueva Aldea Biomass Power Plant Phase 1", UNFCCC Reference Number 0258 for the first monitoring period of the second crediting period.

The verification is based on the validated and registered project design document and the monitoring report for this project. Verification is performed in accordance with section I of Decision 3/CMP.1, and relevant decisions of the CDM EB and CoP/MoP. The scope of this engagement covers the verification and certification of greenhouse gas emission reductions generated by the above project during the above mentioned period, as reported in the Monitoring Report dated 13/04/2015, version 9.

The management of Celulosa Arauco y Constitución S.A. is responsible for the preparation, calculation and determination of GHG emission reductions from the project. The development and maintenance of records and reporting procedures are in accordance with the monitoring report.

It is our responsibility to express an independent GHG verification opinion on the GHG emissions and on the calculation of GHG emission reductions from the project for the first monitoring period of the second crediting period based on the reported emission reductions in the Monitoring Report version 9 dated 13/04/2015 for the same period.

Based on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these, SGS planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence for us to give reasonable assurance that this reported amount of GHG emission reductions for the period is fairly stated.

SGS confirms that the project is implemented as described in the validated and registered and revised project design documents. Based on the information we have seen and evaluated, we confirm the following:

Project Title:	Nueva Aldea Biomass Power Plant Phase 1
UNFCCC Reference Number:	0258
Revised PDD Used for Verification:	Version 4, dated 24/12/2014
Methodology Used for Verification:	ACM0006 version 12.1.1. dated 13/09/2012
Applicable Period:	01/01/2012 – 31/12/2013
Total GHG Emission Reductions Verified:	217,280 tCO <sub>2</sub> e

### Signed on behalf of the Verification Body by Authorized Signatory



Signature:

Name: Jonathan Hall

Date: 01/06/2015



## 15. Document References

Main changes and reason for revision between the final Monitoring Reports with respect to first published version on UNFCCC website.	
MR Version N°	Description and Significant Modifications
1	Monitoring Report version 1 dated 29/05/2014, uploaded to UNFCCC website
2	Monitoring Report version 2 dated 20/08/2014. MR was updated to the new MR template (CAR 1) and the following issues were modified/corrected: <ul style="list-style-type: none"> <li>- Section B.1., events during the monitoring period and equipment changes (CL 11)</li> <li>- Section B.2.1., Deviations during the monitoring period were completed (CL 2)</li> <li>- Section C, Monitoring equipments involved were updated (CL 4)</li> <li>- Section D.1, GWP of CH<sub>4</sub> was corrected (CAR 16)</li> <li>- Section D.2., information about data and monitoring equipments was updated. (CL 3, CL 4, CAR 5, CL 6, CL 7, CL 8, CL 9, CL 10, CL 12, CL 13, CAR 14, CAR 15)</li> <li>- Section E.1., ER calculation was updated (CL 6, CL 7, CL 8, CL 13, CAR 14, CAR 15)</li> <li>- Section E.7., ER values were updated (CL 6, CL 7, CL 8, CL 13, CAR 14, CAR 15)</li> </ul>
3	Monitoring Report version 3 dated 08/10/2014. Summary of main changes: <ul style="list-style-type: none"> <li>- Editorial issues (CAR 1)</li> <li>- Section B.2.1., Deviations during monitoring period was completed (CL 2)</li> <li>- Section C, Monitoring equipments involved were updated (CL 4)</li> <li>- Section D.2., information about data and monitoring equipments was updated. (CL 3, CL 4, CAR 5, CL 6, CL 7, CL 9, CL 12, CAR 14, CAR 15)</li> <li>- Section E.1., ER calculation was updated (CL 6, CL 7, CL 8, CAR 15, CAR 16)</li> <li>- Section E.7., ER values were updated CL 6, CL 7, CL 13, CAR 15)</li> </ul>
4	Monitoring Report version 4 dated 16/10/2014. Summary of main changes: <ul style="list-style-type: none"> <li>- Editorial issues (CAR 1)</li> <li>- Section D.2., information about data and monitoring equipments were updated. (CL 6 &amp; CL 7)</li> </ul>
5	Monitoring Report version 5 dated 02/12/2014. Summary of main changes: <ul style="list-style-type: none"> <li>- Editorial issues (CAR 1)</li> <li>- Section B.2.3. (CL 3), information about changes to the monitoring plan.</li> <li>- Section D1, D.2. E2, E3, E4, information about data, monitoring equipments and ERs was updated. (CAR 5, CL 8, CL 9, CL10, CL 13 &amp; CAR 16)</li> </ul>
6	Monitoring Report version 6 dated 09/12/2014. Summary of main changes: <ul style="list-style-type: none"> <li>- Section D1 was updated. (CL10)</li> </ul>
7	Monitoring Report version 7 dated 24/12/2014. Summary of main changes: Section A.4, B.2.1, B.2.2, D.1, D.2, E.4, E.5, E.6 were updated. (CAR 1, CL2, CAR 5, CL6, CAR 15 & CAR 16)
8	Monitoring Report version 8 dated 17/02/2015. Summary of main changes: Section B.2.2, B.2.3 & D.2. were updated. (CAR 1 & CAR 15)
9	Monitoring Report version 9 dated 13/04/2015. Summary of main changes: Section D.2. was updated. (CAR 5)

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- 1.0. PDDV4\_1401202 track changes.pdf - Revised PDD, version 3, dated 02/12/2014, track changes version
- 1.1 PDDV4\_1401202.pdf - Revised PDD, version 3, dated 02/12/2014, Clean version
- 1.2. PDDV4\_1401224 track changes.pdf - Revised PDD, version 4, dated 24/12/2014, track changes version
- 1.3. PDDV4\_1401224.pdf - Revised PDD, version 4, dated 24/12/2014, Clean version
- 1.4. 0258-CERS-11-12 ver1.xlsm - Revised Ex-ante ER Calculation spreadsheet, dated 24/12/2014
2. Validation report.pdf - Validation Report, dated 08/11/2013
- 3.1 CDM Project Standard v7.pdf – CDM Project Standard, version 07.0, dated 01/06/2014
- 3.2 CDM Validation and Verification Standard v7.pdf - Clean development mechanism validation and verification standard v07.0, dated 01/06/2014
- 3.3 ACM0006 v12.1.1.pdf - Consolidated methodology for electricity and heat generation from biomass.
- 3.4 am-tool-07-v3.0.0 grid emission factor.pdf - Tool to calculate the emission factor for an electricity system, version 03.0.0, dated 23/11/2012
- 3.5 am-tool-03-v2 fossil fuel.pdf - Tool to calculate project or leakage CO2 emissions from fossil fuel combustion, version 2, dated 02/08/2008
- 3.6 am-tool-12-v1.1.0 (1) freight.pdf - Project and leakage emissions from transportation of freight, Version 01.1.0, dated 23/11/2012
- 3.7 am-tool determine baseline efficiency of thermal or electric generation v01.pdf - Tool to determine the baseline efficiency of thermal or electric energy generation systems, Version 01, dated 17/07/2009
- 3.8 MR iss\_form07.pdf - Monitoring report form, Version 03.2
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- 3.10 IPCC 2006 V2\_1\_Ch1\_Introduction.pdf - 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2 Chapter 1
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- 3.12. PDD\_form05.pdf, Template PDD VVS, version 5.
- 4a. Monrep NAF1 CP2 MP1 140529ver1.pdf - Monitoring Report, Version 1, dated 29/05/2014
- 4b. Monrep NAF1 CP2 MP1 140820ver2.pdf - Monitoring Report, Version 2, dated 20/08/2014
- 4c. Monrep NAF1 CP2 MP1 141008ver3.pdf - Monitoring Report, Version 3, dated 08/10/2014
- 4d. Monrep NAF1 CP2 MP1 141016ver4.pdf - Monitoring Report Version 4, dated 16/10/2014
- 4e. Monrep NAF1 CP2 MP1 141202 ver5.pdf - Monitoring Report Version 5, dated 02/12/2014
- 4f. Monrep NAF1 CP2 MP1 141209 ver6.pdf - Monitoring Report Version 6, dated 09/12/2014
- 4g. Monrep NAF1 CP2 MP1 141224 ver7.pdf - Monitoring Report Version 7, dated 24/12/2014
- 4h. Monrep NAF1 CP2 MP1 150217 ver8.pdf - Monitoring Report Version 8, dated 17/02/2015
- 4i. Monrep NAF1 CP2 MP1 150413 ver9.pdf - - Monitoring Report Version 9, dated 13/04/2015
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- 6.1b. Emission Factor SIC 2012ACM0002 Ver 13 ver1 NAPH1.xlsx - EF grid 2012 calculation file, Version 2, dated 20/08/2014
- 6.1c. Emission Factor SIC 2012 ACM0002 Ver13 (NAPH1) ver2.xlsx - EF grid 2012 calculation file, Version 3, dated 24/12/2014
- 6.1d. Emission Factor SIC 2012 ACM0002 Ver13 (NAPH1) ver3.xlsx - EF grid 2012 calculation file, Version 4, dated 17/02/2015
- 6.2 CDEC-SIC Year book 2013.pdf - CDEC-SIC Yearbook 2013
- 6.3 Anuario 03-12 v1.xls - CDEC-SIC Yearbook 2012, excel version
- 6.4 National Energy Balance 2011.xls - National Energy Balance, 2011
- 6.4.b - BNE2012.xlsx - National Energy Balance, 2012

- 6.5 Daily and monthly data - CDEC SIC hourly generation records, per power plant and day, year 2012
- 6.6 Hourly Data - Hourly operation of the Central Interconnected system, 2012
- 6.7 Fuel costs - Power plant fuel cost 2012
- 6.8 Node price report - Octubre2012.xls - Node prices report, October 2012
- 6.9 Generacion anual real 2012.xls - Gross generation per power plant 2012
- 7.1a Emission Factor SIC 2013ACM0002 Ver13 verB.xlsx - EF grid 2013 calculation file, version 1
- 7.1b. Emission Factor SIC 2013ACM0002 Ver13 (NAPh1) ver1.xlsx - EF grid 2013 calculation file, version 2, dated 20/08/2014
- 7.1c. Emission Factor SIC 2013 ACM0002 Ver13 (NAPh1) ver2.xlsx - EF grid 2013 calculation file, version 3, dated 24/12/2014
- 7.1d. Emission Factor SIC 2013 ACM0002 Ver13 (NAPh1) ver3.xlsx - EF grid 2013 calculation file, version 4, dated 17/02/2015
- 7.1e. Emission Factor SIC 2013 ACM0002 Ver13 (NAPh1) ver4.xlsx - EF grid 2013 calculation file, version 5, dated 18/03/2015
- 7.2 Monthly data - Hourly operation of the Central Interconnected system, 2013
- 7.3 Daily data - CDEC SIC hourly generation records, per power plant and day, year 2013
- 7.4 Generacion Real 13.xls - Gross generation per power plant 2013
- 7.5 BNE2012.xls - National Energy Balance, 2012
- 7.6 SGA\_20131224.xls - Variable cost per power plant 2013
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- 7.8 Informe precio nudo Octubre2012.xls - Node prices report , October 2012
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- 8.1.3. Planilla medicion de humedad 2012 140221.xlsx - Biomass moisture records per type, 2012
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- 8.5.1. Ingresos DHM pesometros2012 140221 v2.xlsx - Weightmeters records, 2012
- 8.5.2. Ingresos DHM pesometros2013 300114.xlsx - Weightmeters records, 2013
- 8.5.3. Control Recepcion Lodos212 - Sludge control records, 2012
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- 8.5.4.b. Control recepcion lodos2013 - Sludge control records, 2013, version 2
- 8.5.5. dhm romana 2012 140221V2.xlsx - Weightbridges records, 2012
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- 8.5.7. Resumen dhm Nueva Aldea2012 140221.xlsx - Summary of biomass records in Nva. Aldea plant 2012
- 8.5.7.b. Resumen dhm Nueva Aldea2012 140813 ver2.xlsx - Summary of biomass records in Nva. Aldea plant 2012, version 2
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- 8.5.8. Resumen dhm Nueva Aldea2013 140211.xlsx - Summary of biomass records in Nva. Aldea plant 2013
- 8.5.8.b. Resumen dhm Nueva Aldea2013 140813 ver2.xlsx - Summary of biomass records in Nva. Aldea plant 2013, version 2
- 8.5.8.c. Resumen dhm Nueva Aldea2013 140921 ver3.xlsx - Summary of biomass records in Nva. Aldea plant 2013, version 3
- 8.5.9. Topographic Reports - Topographic records from December 2011 –December 2013 performed by Servicad
- 8.5.10. Operational control - Control Room records 2012 & 2013
- 8.5.11. Planilla integradores2012 - Summary of power plant operational records, 2012
- 8.5.12. Planilla integradores2013 - Summary of power plant operational records, 2013

8.5.12.b. 01 Integradores Ene 2013.xls, corrected power plant records, January 2013

8.6.1. Distancia AbastPta Energia 2012 140221.xlsx - Records of distance and trucks. 2012

8.6.2. DHM romana 2012 140813ver3.xlsx - Records of distance and trucks. 2012, version 2

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8.7.1. TA05-PTE-FO-018 Consumocombustibles fosiles2012.xlsx - Fossil fuel consumption in the power plant, 2012

8.7.1.b. TA05-PTE-FO-018 Consumocombustibles fosiles 2012 ver2.xlsx - Fossil fuel consumption in the power plant, 2012, version 2

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8.7.4. Supporting - Copy of fossil fuel records

8.8.1. Consumo combustible preparacion biomasa 2012.xlsx - Fossil fuel consumption for biomass preparation, 2012

8.8.2. TA05-PTE-FO-017 2012 - Fossil fuel consumption for biomass preparation, front loaders, 2012

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8.8.5. Control Comb movimiento interno y preparacio biomasa 2013 140221.xlsx - Control records of biomass preparation, 2013

8.8.6. RESPALDO CONSUMOS 2013PASA.xls - Control records of equipment operation (trucks, front loaders), 2013

8.8.6b. RESPALDO CONSUMOS 2013PASA.xls - Control records of equipment operation (trucks, front loaders), 2013, version 2

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8.11.4.- NA\_12\_28\_12\_EFs.pdf - EF CH4 records issued by USDA Fire Sciences Laboratory, Missoula Montana, USA

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- 8.14. Dispatch orders 2013 - Biomass dispatch orders, 2013
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- 9.7.- Frecuencia Calibracion Pesometro mix.docx - Technical specs conveyor belt weight meter
- 9.8.- Frecuencia Calibracion pesometro polvo.docx - Technical specs conveyor belt weight meter
- 9.9.- Frecuencia calibracion ION7330.pdf - Technical specs energy meter
- 9.10.- Frecuencia Calibracionmedidor nivel.pdf - Technical specs level meter
- 9.11.- Frecuencia Calibraciontermobalanza.pdf - Technical specs moisture analyzer
- 9.12.- Recomendacion frecuenciocalibracion ABB.pdf - Technical specs pressure and flow meters
- 9.13.- Recomendacion Mantenciony Calibracion Rosemount.pdf - Technical specs temperature meters
- 9.14.- 431-FIQ-916 accuracy.pdf - Technical specs conveyor belt weight meter
- 9.15.- 463-FIQ-174 accuracy.pdf - Technical specs conveyor belt weight meter
- 9.16.- Weighbridge accuracy class.pdf - Technical specs weighbridge
- 9.17.- 461-LT-0460 Level Transmitter accuracy.pdf - Technical specs level meter
- 9.18.- Energy Meters 7330 IONaccuracy.PDF - Technical specs energy meter
- 9.19.- Moisture Analyzer accuracy class.pdf - Technical specs energy meter
- 9.20.- ABB Pressure Transmitters& Steam Flow Meters accuracy.pdf - Technical specs flow and pressure meters
- 9.21.- Rosemount Steam Flow Meters accuracy.pdf - Technical specs flow meters
- 9.22.- Rosemount Temperature Transmitter 3244MVF accuracy.pdf - Technical specs temperature meters
- 9.23 431FIQ916 Calibration frequency Siemens.pdf - Technical specs conveyor belt weight meter
- 9.24.- 463FIQ174 Calibration frequency Ktron.pdf - Technical specs conveyor belt weight meter
- 9.25.- Weighbridges Calibration frequency Jagxtreme.pdf - Technical specs weighbridge
- 9.26.- ABB Calibration frequency2600T.pdf - Technical specs temperature meters
- 9.27.- Rice Lake Operating Manual.pdf - Technical specs weighbridge
- 9.29.- Precision pesometro Siemens.png - Technical specs weighbridge
- 9.30.- Recomendacion pesometrosSiemens.pdf - Technical specs weighbridge
- 9.31.- Kouvo.pdf - Technical specs weighbridge
- 9.32.- Frecuencia de calibracion KUOVO belt scales (3).pdf - Technical specs weighbridge
- 9.34.- Recomendacion termobalanza.pdf - Technical specs moisture analyzer
- 9.35.- Carta Clientes.pdf - Technical specs weighbridge
- 9.36.- Cambio iones 2013.pdf - Records of energy meters change
- 9.37.- Informe tecnico romana Nueva Aldea.pdf - Weighbridges report
- 9.38.- user guide manual 7330.pdf - Technical specs energy meter
- 9.39.- Manual de instalacion ion7330 schneider.pdf - Technical specs energy meter
- 9.40.- Certificados de fabrica.pdf - Energy meters supplier calibration certificates
- 9.41.- Manual-Precision 465PIT9001B.pdf - Technical specs pressure meters
- 9.42.- RE listado equipos crıticos bonos de carbono Fase 1.msg - List of monitoring equipments



9.44.- VS Conveyor belt data confirmation.msg - Technical specs conveyor belt weight meter  
 9.45.- HB43-S Tolerance.pdf - Technical specs moisture analyzer  
 9.46.- NIST H44 2014.pdf - Specifications, tolerances and other technical requirements for weighing and measuring devices, NIST, USA  
 9.47.- OMCL\_ Qualification of balances.pdf - OMCL, Qualification of equipment. Annex 8: qualification of balances  
 9.48.- DpOIML76 HB43-S.xls - OMCL, balance classification  
 10.1.1 ROMANA 01 110727.pdf - Weighbridge calibration certificate  
 10.1.2 ROMANA 01 120124.pdf - Weighbridge calibration certificate  
 10.1.3 ROMANA 01 130130.pdf - Weighbridge calibration certificate  
 10.1.4 ROMANA 01 130731.pdf - Weighbridge calibration certificate  
 10.1.5 ROMANA 02 110727.pdf - Weighbridge calibration certificate  
 10.1.6 ROMANA 02 120124.pdf - Weighbridge calibration certificate  
 10.1.6.b ROMANA 2 120124 ver2.pdf - Weighbridge calibration certificate  
 10.1.7 ROMANA 02 120725.pdf - Weighbridge calibration certificate  
 10.1.8 ROMANA 02 130130.pdf - Weighbridge calibration certificate  
 10.1.9 ROMANA 02 130731.pdf - Weighbridge calibration certificate  
 10.1.10 ROMANA 03 110727.pdf - Weighbridge calibration certificate  
 10.1.11 ROMANA 03 120124.pdf - Weighbridge calibration certificate  
 10.1.12 ROMANA 03 120725.pdf - Weighbridge calibration certificate  
 10.1.13 ROMANA 03 130130.pdf - Weighbridge calibration certificate  
 10.1.14 ROMANA 03 130731.pdf - Weighbridge calibration certificate  
 10.1.15 ROMANA 01 120725.pdf - Weighbridge calibration certificate  
 10.2.1 431 FIQ 502 111213.pdf - Conveyor belt weight meter calibration certificate  
 10.2.2 431 FIQ 502 120626.pdf - Conveyor belt weight meter calibration certificate  
 10.2.3 431 FIQ 502 121226.pdf - Conveyor belt weight meter calibration certificate  
 10.2.4 431 FIQ 502 130604.pdf - Conveyor belt weight meter calibration certificate  
 10.3.1 461 LT 0460 110607.pdf - Level transmitter calibration certificate  
 10.3.2 461 LT 0460 120709.pdf - Level transmitter calibration certificate  
 10.3.3 461 LT 0460 130115.pdf - Level transmitter calibration certificate  
 10.3.4 461 LT 0460 130822.pdf - Level transmitter calibration certificate  
 10.4.1 462FT9150 101208.pdf - Steam flow meter calibration certificate  
 10.4.2 462FT9150 120107.pdf - Steam flow meter calibration certificate  
 10.4.3 462FT9150 120702.pdf - Steam flow meter calibration certificate  
 10.4.4. 462FT9150 130820.pdf - Steam flow meter calibration certificate  
 10.5.1 463FIQ174 111213.pdf - Conveyor belt weight meter calibration certificate  
 10.6.1 463FT0402 101207.pdf - Steam flow meter calibration certificate  
 10.6.2 463FT0402 120709.pdf - Steam flow meter calibration certificate  
 10.6.3 463FT0402 130820.pdf - Steam flow meter calibration certificate  
 10.7.1 463PT0106 101207.pdf - Pressure meter calibration certificate  
 10.7.2 463PT0106 120107.pdf - Pressure meter calibration certificate  
 10.7.3 463PT0106 120710.pdf - Pressure meter calibration certificate  
 10.7.4 463PT0106 130820.pdf - Pressure meter calibration certificate  
 10.8.1 463PT0403 101207.pdf - Pressure meter calibration certificate  
 10.8.2 463PT0403 120709.pdf - Pressure meter calibration certificate  
 10.8.3 463PT0403 130821.pdf - Pressure meter calibration certificate  
 10.9.1 463TT0110 101207.pdf - Temperature meter calibration certificate  
 10.9.2 463TT0110 120709.pdf - Temperature meter calibration certificate  
 10.9.3 463TT0110 130823.pdf - Temperature meter calibration certificate  
 10.10.1 463TT0406 100812.pdf - Temperature meter calibration certificate  
 10.10.2 463TT0406 120713.pdf - Temperature meter calibration certificate  
 10.10.3 463TT0406 130822.pdf - Temperature meter calibration certificate  
 10.11.1 465FT9019 101209.pdf - Steam flow meter calibration certificate

10.11.2 465FT9019 120711.pdf - Steam flow meter calibration certificate  
 10.11.3 465FT9019 130823.pdf - Steam flow meter calibration certificate  
 10.12.1 465FT9023 101210.pdf - Steam flow meter calibration certificate  
 10.12.2 465FT9023 120710.pdf - Steam flow meter calibration certificate  
 10.12.3 465FT9023 130823.pdf - Steam flow meter calibration certificate  
 10.13.1 465FT9025 101209.pdf - Steam flow meter calibration certificate  
 10.13.2 465FT9025 120711.pdf - Steam flow meter calibration certificate  
 10.13.3 465FT9025 130822.pdf - Steam flow meter calibration certificate  
 10.14.1 465FT9027 101209.pdf - Steam flow meter calibration certificate  
 10.14.2 465FT9027 120711.pdf - Steam flow meter calibration certificate  
 10.14.3 465FT9027 130822.pdf - Steam flow meter calibration certificate  
 10.15.1 465PIT9000A 101210.pdf - Pressure meter calibration certificate  
 10.15.2 465PIT9000A 120709.pdf - Pressure meter calibration certificate  
 10.15.3 465PIT9000A 130820.pdf - Pressure meter calibration certificate  
 10.16.1 465PIT9000B 101210.pdf - Pressure meter calibration certificate  
 10.16.2 465PIT9000B 120709.pdf - Pressure meter calibration certificate  
 10.16.3 465PIT9000B 130820.pdf - Pressure meter calibration certificate  
 10.17.1 465PIT9001A 101209.pdf - Pressure meter calibration certificate  
 10.17.2 465PIT9001A 120710.pdf - Pressure meter calibration certificate  
 10.17.3 465PIT9001A 130821.pdf - Pressure meter calibration certificate  
 10.18.1 465PIT9001B 101209.pdf - Pressure meter calibration certificate  
 10.18.2 465PIT9001B 120710.pdf - Pressure meter calibration certificate  
 10.18.3 465PIT9001B 130822.pdf - Pressure meter calibration certificate  
 10.18.4.- 465PIT9001B 140401.pdf - Pressure meter calibration certificate  
 10.19.1 465PIT9002A 101209.pdf - Pressure meter calibration certificate  
 10.19.2 465PIT9002A 120107.pdf - Pressure meter calibration certificate  
 10.19.3 465PIT9002A 120710.pdf - Pressure meter calibration certificate  
 10.19.4 465PIT9002A 130820.pdf - Pressure meter calibration certificate  
 10.19.5 465PIT9002A 130820.pdf - Pressure meter calibration certificate  
 10.20.1 465PIT9002B 101210.pdf - Pressure meter calibration certificate  
 10.20.2 465PIT9002B 120107.pdf - Pressure meter calibration certificate  
 10.20.3 465PIT9002B 120712.pdf - Pressure meter calibration certificate  
 10.20.4 465PIT9002B 130822.pdf - Pressure meter calibration certificate  
 10.21.1 465PIT9002C 101210.pdf - Pressure meter calibration certificate  
 10.21.2 465PIT9002C 120107.pdf - Pressure meter calibration certificate  
 10.21.3 465PIT9002C 120712.pdf - Pressure meter calibration certificate  
 10.21.4 465PIT9002C 130820.pdf - Pressure meter calibration certificate  
 10.22.1 465TT9024 101211.pdf - Temperature meter calibration certificate  
 10.22.2 465TT9024 120707.pdf - Temperature meter calibration certificate  
 10.22.3 465TT9024 130822.pdf - Temperature meter calibration certificate  
 10.23.1 465TT9026 101211.pdf - Temperature meter calibration certificate  
 10.23.1b 465TT9026 101211 ver2.pdf - Temperature meter calibration certificate  
 10.23.2 465TT9026 120707.pdf - Temperature meter calibration certificate  
 10.23.3 465TT9026 130821.pdf - Temperature meter calibration certificate  
 10.24.1 465TT9028 101209.pdf - Temperature meter calibration certificate  
 10.24.2 465TT9028 120707.pdf - Temperature meter calibration certificate  
 10.24.3 465TT9028 130822.pdf - Temperature meter calibration certificate  
 10.25 468PM003 121101.pdf - Energy meter calibration certificate  
 10.26 468PM006 121031.pdf - Energy meter calibration certificate  
 10.27 468PM008 121005.pdf - Energy meter calibration certificate  
 10.28.1 531WI5518A 110901.pdf - Conveyor belt weight meter calibration certificate  
 10.28.2 531WI5518A 120607.pdf - Conveyor belt weight meter calibration certificate



- 10.28.3 531WI5518A 121114.pdf - Conveyor belt weight meter calibration certificate
- 10.28.3b 531WI5518A 121114 ver2pdf - Conveyor belt weight meter calibration certificate
- 10.28.4 531W15518A 130905.pdf - Conveyor belt weight meter calibration certificate
- 10.29.1 565FT0965 110324.pdf - Steam flow meter calibration certificate
- 10.29.2 565FT0965 120710.pdf - Steam flow meter calibration certificate
- 10.29.3 565FT0965 130822.pdf - Steam flow meter calibration certificate
- 10.30.a- Electronic moisture analyzer 150711.pdf - Moisture analyzer calibration certificate
- 10.30.b - First certificate Mettler Toledo.pdf - Moisture analyzer calibration certificate
- 10.30.c.-Termobalanza HB 43S131231.pdf - Moisture analyzer calibration certificate
- 10.31.- RV Cambio termobalanza Proyecto MDL.msg - Moisture analyzer replacement record
- 10.32. Termobalanza sartorius120621.pdf - Calibration certificate
- 10.33.- Informe Validacion ION7330.pdf - Validation report energy meters
- 11.1. Chequeo RPG NAF1 2012 14221F.xlsx - QA/QC records per parameter, 2012
- 11.2. Chequeo RPG NAF1 2013 14221 V2.xlsx - QA/QC records per parameter, 2013
- 11.3. Informe Auditoria Trup n140422.docx - Internal audit report
- 11.4. TA05-GEN-PR-013 Monitoreode variables para el calculo de emisiones abatidas de GEI (v8) preliminar.docx - Operative/internal monitoring procedure
- 12.1. Df,m folder - Road map
- 12.2. Compra EE Ene 2012-Abr 213 - Energy purchase invoices, 2012
- 12.3 Compra EE May 2013-Dic 213 - Energy purchase invoices, 2013
- 12.4 Ventas EE - Energy selling invoices, 2012-2013
- 12.5 Resumen facturacion Compra\_Venta EE CP2 MP1 NAF1.xlsx – Energy balance, summary of energy generation, buying and selling, 2012 - 2013
- 13.1.- Verification Report CP1MP1(01 Jan 05 - 30 Sep 06).pdf - Verification Report CP1 MP1(01 Jan 05 - 30 Sep 06) - First Monitoring Period verification report, dated 14/01/2007
- 13.2.- Revised Verification and Certification Report CP1 MP2 (01 Oct 06 - 30 Sep 07).pdf - Verification Report CP1 MP2 (01 Oct 06 - 30 Sep 07) - Second Monitoring Period verification report, dated 27/05/2008
- 13.3.- CDM VER0122 MP3 Verification report 111029 (01 Oct 07-30 Sep 08).doc - Verification report CP1 MP3 (01 Oct 07-30 Sep 08) - Third Monitoring Period verification report, dated 06/12/2011
- 13.4.- verification report MP4pdf - Verification report CP1 MP4 - Fourth Monitoring Period verification report (01/10/2008 – 31/12/2009), dated 06/01/2012
- 13.5.- UK AR6 CDM VER0122 CP1MP5 Clean 14.08.2013\_JA.pdf - Verification report CP1 MP5 (01/01/2010 – 31/12/2010)- Fifth Monitoring Period verification report, dated 02/08/2013
- 13.6 UK AR6 CDM VER0122 MP6 214.05.30.pdf - Verification report CP1 MP6 (01/01/2011 – 31/12/2011)- Sixth Monitoring Period verification report, dated 30/05/2014
- 14. Project installation and commissioning records - Projects installation records
- 15. Data management - Plant procedures linked to equipments verifications and internal (lab) tests
- 16.1. Electricity invoices - Energy invoices reviewed on site
- 16.2. Fossil Fuel invoices - Fossil fuel invoices reviewed on site
- 17. On site pics - Photographic evidence – Main installations
- 18. Capacidad\_instalada\_generacion\_CNE.xlsx - SIC installed capacity
- 19.1.- Generador.jpg - Generator plate
- 19.2.- Caldera.jpg - Boiler plate
- 19.3.- Respaldos capacidad Caldera.pdf - Technical report power plant system
- 20. Moisture content - Moisture content test
- 21. Bitacora incendio NAF1.pdf - Power plant logs from 31/12/2011 until 14/01/2012
- 22. Carta GPTNA-001-C-12 Informa Siniestro de Planta Terciado Nueva Aldea.pdf - Letter sent to the Local Authority reporting the fired
- 23.- RV Crediting Period Renewal for 0258 NAF1.msg - Mail from UNFCCC approving the second crediting period of the project
- 24.- Tiempos fuera servicio NAF1CP2MP1.xls - Records of the power plant periods out of service
- 25.- Law Number 701, Regulation to establish forestry.

## 16. Findings Overview

### Findings Overview Summary

	CARs	CLs	FARs
Total Number raised	5	11	-

Date:	20/06/2014	Raised by:	Alicia Fernández		
Type:	CAR	Number:	1	Reference:	AU4 section 2 - MR
Lead Assessor Comment:			Date: 20/06/2014 & 27/06/2014		
<b>Monitoring Report</b> During the review of the Monitoring Report v1 it was found that the document was not in compliance with the "Instructions for filling out the monitoring report form" (attachment of MR template form version 04.0). Please update the MR using the latest template available (version 04.0) and ensure that information of section D.2 is reported in accordance with the "Instructions" and the Monitoring Plan available in the registered PDD (ref 5a). <b>CAR 1 was raised.</b>					
Project Participant Response:			Date: 20/08/2014		
PP applied the updated form of MR (version 04.0) and created a new corrected version of the monitoring report, including all the raised observations during the auditory. Ref: "Monrep NAF1 CP2 MP1 140820 ver2.docx".					
<b>Documentation Provided as Evidence by Project Participant:</b>					
Monrep NAF1 CP2 MP1 140820 ver2.docx"					
<b>Information Verified by Lead Assessor:</b>					
Monrep NAF1 CP2 MP1 140820 ver2.docx, MR version 2 dated 20/08/2014 (ref 4b)					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>					
The updated MR (ref 4b) and updated ER excel file (ref 5b) were reviewed: <ul style="list-style-type: none"><li>- MR contains some editorial issues, it refers to actions corresponding to this monitoring activities of the period as "will be".</li><li>- MR in page 56 refers to the EFom 2011, it has to be reviewed.</li><li>- MR section 6 does not contain all the issues that generates a difference of ERs in comparison with the registered PDD.</li><li>- MR will have to be updated considering the changes in the figures due to the open findings.</li><li>- It was found that the ERs spreadsheet contains some figures, outsides of the tables, with no units or explanations, please clarify what these figures represents.</li></ul>					
<b>CAR 1 remains open.</b>					
Acceptance and Close out by Lead Assessor:			Date: 08/09/2014		
Project Participant Response:			Date: 23/09/2014		
Observations to MR and ER excel file were considered. A new version of the MR, the ER excel file and support information were presented to the assessment team. Ref: "Monrep NAF1 CP2 MP1 141008 ver3.docx", "NAF1 monit CP2 MP1 140929 ver3.xlsx", "Tiempo fuera servicio NAF1 CP2MP1.xlsx", "RV Crediting Period Renewal for 0258 NAF1.msg"					
<b>Documentation Provided as Evidence by Project Participant:</b>					
Monrep NAF1 CP2 MP1 141008 ver3.docx NAF1 monit CP2 MP1 140929 ver3.xlsx Tiempo fuera servicio NAF1 CP2MP1.xlsx RV Crediting Period Renewal for 0258 NAF1.msg					
<b>Information Verified by Lead Assessor:</b>					
Monrep NAF1 CP2 MP1 141008 ver3.docx (ref 4c) NAF1 monit CP2 MP1 140929 ver3.xlsx (ref 5c) Tiempo fuera servicio NAF1 CP2MP1.xlsx (ref. 24) RV Crediting Period Renewal for 0258 NAF1.msg (ref 23)					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>					
It was verified that MR version 3 (ref 4c) contains the correction to the issues previously identified. Item closed. Additionally it was verified that information reported on page 7 (project events) is correct against the general records of the plant (ref 24).					

It was verified that PP deleted from the ER excel file (ref 5c) figures that were not related to the ER calculations. **Item closed.**

Please revise the data informed in MR against ER spreadsheet, the figures of the following parameters don't match:

- Biomass residues categories and quantities used in the project activity (and all the other biomass parameters).
- FR<sub>fm</sub>

**Item open**

**CAR 1 remains open**

<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 15/10/2014
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<b>Project Participant Response:</b>	<b>Date:</b> 16/10/2014
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PP clarified that data informed in MR for parameters related with Biomass residues categories are according file "NAF1 monit CP2 MP1 141016 ver4.xlsx", sheets "2012 emissions" and "2013 emissions". In sheet "Monrep tables" of the same file, the values of Biomass residues categories to calculate baseline emissions due to uncontrolled burning, were adjusted according temporary deviation explained in section B.2.1 of MR. No correction was applied.

Values of FR<sub>fm</sub> in sheets "2012 emissions" and "2013 emissions" had typo mistakes. PP corrected in a new version of MR. Ref: "Monrep NAF1 CP2 MP1 141016 ver4.docx"

**Documentation Provided as Evidence by Project Participant:**

Monrep NAF1 CP2 MP1 141016 ver4.docx

**Information Verified by Lead Assessor:**

Monrep NAF1 CP2 MP1 141016 ver4.docx (ref. 4d)

**Reasoning for not Acceptance or Acceptance and Close Out:**

It was verified that information reported in MR version 3 (ref 4c) and version 4 (ref 4d), is correct against the ER excel calculation file (ref 5c). Similarly it was verified that MR version 4 (ref 4d) corrected the data corresponding to parameter FR<sub>fm</sub>, the information now is consistent against the ER calculation file. **Item closed.**

**CAR 1 closed on 20/10/2014, reopened on 26/11/2014.**

- Please revise MR, in order to report properly the Parties related with the project activity in MR section A.3
- In MR. section B.1. (page 9), please use the international system "." for decimals and "," for thousands.
- In MR section B.2.3., only have to be reported "Permanent changes to the MP or methodology". Please revise.
- In MR section D.1. and D.2., there are parameters that are linked only to baseline or project emissions, while they are related to both. Please revise.

**CAR 1 remains open.**

<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 20/10/2014, 26/11/2014
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<b>Project Participant Response:</b>	<b>Date:</b> 28/11/2014
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PP corrected MR according issues raised on 26/11/2014. A new version of MR was presented to assessment team. Ref: "Monrep NAF1 CP2 MP1 141202 ver5.docx".

**Documentation Provided as Evidence by Project Participant:**

Monrep NAF1 CP2 MP1 141202 ver5.docx

**Information Verified by Lead Assessor:**

Monrep NAF1 CP2 MP1 141202 ver5.docx (ref. 4e)

**Reasoning for not Acceptance or Acceptance and Close Out:**

It was verified that all issues were addressed as follow:

- The PP provided the corrected MR<sup>/4e/</sup> where section A.3. was properly updated according with the information available in the UNFCCC project web page. In order to keep consistency between the web page records and the PDD, the PP introduced this correction in a revised PDD<sup>/1.1/</sup> in order to correct the information of the Parties related with the project. It was verified that MR version 5<sup>/4e/</sup>, section A.4 was correctly filled. Item closed.
- The PP provided the corrected MR<sup>/4e/</sup> where all the editorial issues previously identified were corrected.

**CAR 1 was closed on 03/12/2014, re-opened on 23/12/2014**

Please revise and consider the following issues in the MR & PDD:

1. Please revise that MR and PDD are filled in compliance with the corresponding guidance to complete them.
2. Revise section MR section A.4 and ensure that all Tools linked with the projects are included, similarly please revise and complete PDD section B.7.4.
3. Revise the project coordinates reported on MR page 3.
4. In MR section B.2.2.:
  - o Please include all the changes introduced to PDD (i.e. inclusion of section. B.7.4, correction of GWP, etc)
  - o Please refer to PDD's Appendix instead annex. .
5. Correct MR section D.1., parameter " $LFC_{HG,h}$ ", item "unit", it is not correct as per PDD.
6. Please note that in MR the following editorial issues have to be addressed:
  - o When dates are reported, in some cases is dd/mm/yyyy, please correct the editorial "/" issue.
  - o In section B.2.1., it refers to equation 14 of the meth as located on page 63, but should be 33.
  - o In section D.2. the parameter table margins have been tampered with and correct the template and delete the empty spaces.
  - o In section D.2. VVS is mentioned, but no version is reported, similarly it refers to IPCC but does not mention the year. Please complete.
  - o Please revise the MR when PDD is mentioned, detailing if is "registered", "revised" or both, similarly please identify the page numbers properly.
7. In the ER excel file, please consider the following:
  - o Throughout the tabs on this spreadsheet, it states "according to the PDD", please specify "registered" or "revised" PDD.
  - o Please revise the consistency of the figures reported in every file, spreadsheet and MR.

**CAR 1 remains open**

<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 03/12/2014, 23/12/2014
<b>Project Participant Response:</b>	<b>Date:</b> 24/12/2014
<p>a. PP confirms that MR and PDD are filled in compliance with the corresponding guidance to complete them, including all the information described in Monitoring report form (version 04.0.0) and Project design document form for CDM project activities (Version 05.0). typo mistakes are corrected in a new version of the MR: Ref: Monrep NAF1 CP2 MP1 141224 ver7.docx</p> <p>b. PP revises section A.4 of MR and includes tool "Assessment of the validity of the original/current baseline and to update the baseline at the renewal of a crediting period (Version 03.0.1)" according to information in section B.7.4. of the revised PDD, page 118. PP confirm that version of applied tools are correct. Ref: Monrep NAF1 CP2 MP1 141224 ver7.docx</p> <p>c. PP revises coordinates reported on MR page 3, and corrected according coordinates declared in revised PDD, page 4. Ref: "Monrep NAF1 CP2 MP1 141224 ver7.docx"</p> <p>d. PP corrected MR section B.2.2. according the following:</p> <ol style="list-style-type: none"> <li>1. Inclusion of all the changes introduced to PDD.</li> <li>2. Correction of PDD's "annex" by PDD's "appendix".</li> </ol> <p>Ref: "Monrep NAF1 CP2 MP1 141224 ver7.docx"</p> <p>e. PP correct units of parameter "<math>LFC_{HG,h}</math>", according registered and revised PDD. Ref: "Monrep NAF1 CP2 MP1 141224 ver7.docx"</p> <p>f. PP corrected editorial issues as follows:</p> <ol style="list-style-type: none"> <li>1. Correct the editorial "/" in some reported dates.</li> <li>2. Reference page for equation 14 was corrected.</li> <li>3. Table margins and empty spaces in section D.2. were corrected.</li> <li>4. In section D.2, inclusion of the version of VVS: Version 07, and 2006 as reference year for IPCC guideline.</li> <li>5. PDD is mentioned as registered and/or revised, and the pages of the references are accordingly identified in the new version of the MR.</li> </ol> <p>Ref: "Monrep NAF1 CP2 MP1 141224 ver7.docx"</p>	

- g. In the ER excel file, please consider the following:
1. PP corrected tabs accordingly.
  2. PP confirms that all figures are consistent between ER spreadsheet and MR. As is explain in section E, page 53, PP considered as conservative and accurate procedure use all the decimal permitted by excel program and truncate and round down only the final calculation of requested CERs. Section E cited:

1.- Differences in baseline and project emission calculations included in tables below (section E of MR) are due to the fact that all calculations are done directly in excel spreadsheets with full decimals (no rounding), this implies a decimal precision that is not carried onto word formatted tables because decimals are shown truncated and rounded down. Exact values can be viewed directly in emission reduction calculation spreadsheet.

2.- In emission reduction calculation spreadsheet, sheet "Summary" the final result of emission reduction (cells C45 and C46) are truncated and rounded down to be conservative with the quantity of requested CERs.

3. Since the emission reduction calculation for the project activity was done monthly, in some cases year-averages were employed the calculations presented below (section E of the MR).

Nevertheless, PP revised the consistency of all figures in MR and ER spreadsheet, including notes when numbers are truncated or rounded down.

Ref: "Monrep NAF1 CP2 MP1 141224 ver7.docx", "NAF1 monit CP2 MP1 141224 ver6.xlsx"

#### Documentation Provided as Evidence by Project Participant:

Monrep NAF1 CP2 MP1 141224 ver7.docx

NAF1 monit CP2 MP1 141224 ver6.xlsx

PDDV4\_141224.docx

#### Information Verified by Lead Assessor:

Monrep NAF1 CP2 MP1 141224 ver7.docx (ref. 4g)

NAF1 monit CP2 MP1 141224 ver6.xlsx (ref. 5f)

PDDV4\_141224.docx(ref 1.3)

#### Reasoning for not Acceptance or Acceptance and Close Out:

1. It was verified that MR version 7 (ref 4g) and PDD version 4 (ref 1.3) were corrected and they are properly filled. Item closed.
2. It was verified that MR version 7 (ref 4g) now reports in a complete manner the tolls involved with the project. Item closed.
3. It was verified that MR version 7 (ref 4g) corrected the coordinates of the project location. Item closed.
4. It was verified that MR version 7 (ref 4g), section B.2.2. includes the missing changes introduced to PDD. Item closed.
5. It was verified that MR version 7 (ref 4g), section D.1., corrected the units of parameter "LFC<sub>HG,h</sub>". Item closed.
6. It was verified that MR version 7 (ref 4g), corrected the editorial issues spotted. Item closed.
7. It was verified that the updated ER spreadsheet (ref. 5f) refers properly to the registered and revised PDD. Additionally it was verified that calculation tables available in the excel files are correct and the PP properly inform in the MR (relevant tables) that the excel file shows the figures obtained with the calculations using all decimal figures, which is correct. The PP properly rounded the final figures in tab "summary". Item closed.

#### CAR 1 was closed on 26/12/2014 and re-opened on 16/02/2015

7. In the ER excel file, please consider the following:
  - Tab "Summary", cells B54 and B55 do not include the information source.
  - Tab "Summary", please clarify the difference between tables contained in lines 39-42 and 45-47.
  - Tabs "2012 Data" and "2013 Data", please identify the version of the PDD that is referring to.

**Item re-opened.**
8. Please revise MR and complete the version/date of IPCC used, please check pages 10, 15, 16, 33 and 52. **Item open.**
9. Please revise MR B.2.2. and B.2.3. and check consistency of the PDD version that is mentioned. **Item open.**

<b>CAR 1 remains open.</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 26/12/2014, 16/02/2015
<b>Project Participant Response:</b>	<b>Date:</b> 17/02/2015
<p>7.- PP corrected ER spreadsheet according observations. Corrections were presented in new version of ER spreadsheet "NAF1 monit CP2MP1 150217 ver7.xlsx".</p> <p>8.- PP included version of IPCC used in new version of MR. Ref: "Monrep NAF1 CP2 MP1 150207 ver8.docx".</p> <p>9.- PP clarified that PDD cited version correspond to version fourth in new version of MR. Ref: "Monrep NAF1 CP2 MP1 150207 ver8.docx".</p>	
<b>Documentation Provided as Evidence by Project Participant:</b>	
NAF1 monit CP2MP1 150217 ver7.xlsx Monrep NAF1 CP2 MP1 150217 ver8.docx	
<b>Information Verified by Lead Assessor:</b>	
NAF1 monit CP2MP1 150217 ver7.xlsx (ref. 5g) Monrep NAF1 CP2 MP1 150217 ver8.docx (ref. 4h)	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
<p>7. It was verified that ER excel file (ref. 5g), tab "Summary" inform correctly the source of the estimated ER and tabs "2012 Data &amp; 2013 Data" inform the PDD version with the committed accuracy meters. Additionally it was verified that the PP clarified the difference between two tables, adding a title that explain the rounding criteria applied for the CERs claimed. Item closed.</p> <p>8. It was verified that MR (ref 4h), reports properly the IPCC guidelines used (version 2006) thorough the document. <b>Item closed.</b></p> <p>9. It was verified that MR (ref 4h), section B.2.2 and B.2.3, reports correctly the version of the revised PDD. <b>Item closed.</b></p>	
<b>CAR 1 closed on 18/02/2015, re-opened on 10/04/2015</b>	
<p>7. In the ER excel file, item re-opened, please consider the following:  Tab "Summary", cells B55 refers wrongly to PDD version, please note that the same mistake is on tab "2012 Data", "2013 Data", cell C11  Item re-opened.</p>	
<b>CAR 1 remains open.</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 10/04/2015
<b>Project Participant Response:</b>	<b>Date:</b> 13/04/2015
<i>PP corrected accordingly. Ref: "NAF1 monit CP2 MP1 150413 ver8.xlsx"</i>	
<b>Documentation Provided as Evidence by Project Participant:</b>	
NAF1 monit CP2 MP1 150413 ver8.xlsx	
<b>Information Verified by Lead Assessor:</b>	
NAF1 monit CP2 MP1 150413 ver8.xlsx (ref. 5h)	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
<p>The updated ER excel file (ref. 5h) provided by the PP was reviewed, it was verified that the typo linked to the version of the registered PDD was corrected.</p> <p>CAR 1</p>	
<b>CAR 1 was closed.</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 13/04/2015



Date:	20/06/2014	Raised by:	Alicia Fernández		
Type:	CL	Number:	2	Reference:	AU4 section 2 – temporary deviation
<b>Lead Assessor Comment:</b>				<b>Date:</b> 20/06/2014	
<p><b>NCV<sub>BR,n,y</sub> Temporary deviation</b></p> <p>During this monitoring period, the PP is presenting 3 temporary deviations. One of them refers to two gaps in the measurement frequency of the parameter NCV<sub>BR,n,y</sub>. In order to cover this issue, the PP decided to use the minim value published by IPCC 2006 during the gaps; please clarify how this approach is in compliance with the PS v 7 appendix 1.</p> <p><b>CL 2 was raised.</b></p>					
<b>Project Participant Response:</b>				<b>Date:</b> 20/08/2014	
<p>This clarification was explained to the assessment team during the auditory visit. The new version of the methodology applied for the project Nueva Aldea phase 1 in its second crediting period (ACM0006 version 12.1.1), consider the use of inequalities (see page 65 of current PDD) to determine the quantity of biomass-based heat generation. If PP used “0” in parameter NCV<sub>BR,n,y</sub> the quantity of biomass-based heat generation would be undefined.</p> <p>Nevertheless, and to be sure of apply a conservative temporary deviation in compliance with the PS v 7 appendix 1, PP used the Biomass NCV lower value published by IPCC 2006 and declare as “0” (zero) the Baseline emissions due to aerobic decay or uncontrolled burning of biomass residues during the periods described in section B.2.1 of the MR (Please see cell F173 of ‘2012 emissions’ and cell F173 of ‘2013 emissions’ data sheets in file “NAF1 monit CP2 MP1 140820 ver2.xlsx”). Ref: “NAF1 monit CP2 MP1 140820 ver2.xlsx”.</p>					
<b>Documentation Provided as Evidence by Project Participant:</b>					
NAF1 monit CP2 MP1 140820 ver2.xlsx					
<b>Information Verified by Lead Assessor:</b>					
NAF1 monit CP2 MP1 140820 ver2.xlsx, ER spreadsheet version 2 (ref 5b)					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>					
<p>It was verified that the two periods where the PP didn't monitor the parameter NCV<sub>BR,n,y</sub> were addressed following a conservative approach. The NCV has two delayed measurements, thus there are two gaps, the first one from 28/11/2012 – 27/12/2012 and the second one from 28/06/2013 – 27/10/2013</p> <p>As per the methodology, it was verified that the parameter is involved in the Baseline Emissions due to the aerobic decay or uncontrolled burning of the biomass and in the Project Emissions due to the biomass combustion. Thus considering that the same parameter is used in project and baseline emissions it was verified that the PP considers a conservative approach separately for BE and PE. Thus baseline emissions were considered zero for the deviated periods, it was verified that BE for December 2012 was considered zero in the ER spreadsheet (ref 5b), tab “2012 Emissions” cell E167, the same approach was followed from July to October 2013 tab “2013 Emissions” cell F167.</p> <p>Regarding the period where the correction was applied it is deemed correct because for 2012 deviation, the whole month of December was considered in order to compensate the 3 days (28 to 20 November), it is deemed correct because December has one day more, thus it is conservative. The same approach was followed for the second deviated period, the correction was done for July to October.</p> <p>Regarding PE, given that PE are as <math>PE_{BR,y} = GWP_{CH4} * EF_{CH4,BR} * \sum BR_{PJ,n,y} * NCV_{BR,n,y}</math> and <math>EF_{CH4,BR} = 0</math> (based on the measurements done), the application of a higher NCV value does not have impact because <math>PE_{BR,y}</math> was already zero.</p> <p>Therefore, it was verified that the approach followed by the PP is correct as per the PS v 7 appendix 1. Even though all the calculation was done correctly PP is requested to clarify in MR (page 9) the periods identified as gap. <b>Item remains open.</b></p> <p>This clarification has been assessed as well considering the information provided with CL 13 and the MR version 2 (ref 4b). As per the NCV test available (ref. 8.12.1, 8.12.2), it was verified that the NCV of the biomass from forestry operations (type 5) was not determined by the external lab, thus the temporary deviation identified in MR version 2 (ref 4b) section B.2.1. is correct.</p> <p><b>CL 2 remains open.</b></p>					
<b>Acceptance and Close out by Lead Assessor:</b>				<b>Date:</b> 27/08/2014	



<b>Project Participant Response:</b>	<b>Date:</b> 24/09/2014
PP corrected gap's information in section B.2.1 of the new version of MR. Ref: "Monrep NAF1 CP2 MP1 141008 ver3.docx".	
<b>Documentation Provided as Evidence by Project Participant:</b>	
Monrep NAF1 CP2 MP1 141008 ver3.docx	
<b>Information Verified by Lead Assessor:</b>	
Monrep NAF1 CP2 MP1 141008 ver3.docx (ref 4c)	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
It was verified that MR version 3 (ref 4c) was completed, the PP provides in section B.2.1. the information about the deviated periods and the correction applied. As it was previously assessed the deviations were correctly treated following the Appendix 1 of the project Standard.	
<b>CL 2 closed, re-opened on 23/12/2014</b>	
In MR section B.2.1., please report the dates of the deviated period, corrected one and criteria applied.	
<b>CL 2 remains open.</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 15/10/2014, 23/12/2014
<b>Project Participant Response:</b>	<b>Date:</b> 24/12/2014
PP includes in section B.2.1 of the MR the dates of the deviated period and the period corrected for "Frequency of the NCVBR,n,y samples" temporary deviation. The correction criteria applied is explain in section B.2.1, page 10. Ref: "Monrep NAF1 CP2 MP1 141224 ver7.docx".	
<b>Documentation Provided as Evidence by Project Participant:</b>	
Monrep NAF1 CP2 MP1 141224 ver7.docx	
<b>Information Verified by Lead Assessor:</b>	
Monrep NAF1 CP2 MP1 141224 ver7.docx (ref 4g)	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
It was verified that MR version 7, section B.2.1. now reports in a complete manner the deviated period and correction done.	
<b>CL 2 was closed.</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 26/12/2014

Date:	20/06/2014		Raised by:	Alicia Fernández	
Type:	CL	Number:	3	Reference:	AU4 section 2 – calibrations
<b>Lead Assessor Comment:</b>				<b>Date:</b> 20/06/2014	
<p><b>Monitoring equipment clarification</b></p> <p>By the review of the calibration data, the following was identified:</p> <ol style="list-style-type: none"> <li>1. Parameter Moisture analyze. The calibration certificates corresponding to the moisture analyzer Mettler Toledo HB43-S were not provided. Please provide the missing information</li> <li>2. Parameter BR<sub>PJ,n,Y</sub>, equipment tag 531-WI_5518A, the calibration certificate (ref.10.28.3) is dated 11/12/2012, however the letter is dated 03/01/2012. Please clarify.</li> <li>3. Parameter BR<sub>PJ,n,Y</sub>, in the MR, weighbridge RICE Lake, it is indicated on p16 that a calibration was performed on 27/07/2011. However, no such calibration certificate was provided. Please provide or correct the monitoring report accordingly.</li> <li>4. Parameter BR<sub>PJ,n,Y</sub>, the accuracy class indicated in section D.2 for the weighbridge Rice Lake s/n 325078 is not consistent with the information indicated on page 6, section B.1 of the Monitoring Report version 1. Please amend in a consistent manner.</li> <li>5. Parameter BR<sub>PJ,n,Y</sub>, the accuracy indicated in section D.2 for the Weighbridge 2 S/N 5429421-5EF (south entrance) is Class III (+/- 30 kg). Calibration certificates only indicate Class III accuracy, so please provide relevant documentation to support that equivalence.</li> <li>6. Parameter BR<sub>PJ,n,Y</sub>, the name of the equipment is incorrectly stated in the calibration certificate corresponding to the calibration performed on 24/01/2012 to the weighbridge 2 (ref.10.1.6) Please clarify (5GF instead of 5EF).</li> <li>7. Parameter HC<sub>BL,y</sub>, Level transmitter tag 461-LT-0460. The Calibration frequency reported in MR section D.2 (ref 4a) (18 months) is not consistent with the calibration frequency stated in PDD page 109 /ref 1/. Please clarify.</li> <li>8. Parameter HC<sub>BL,y</sub>, Temperature transmitter tag 465-TT-.9026. The serial number in the calibration certificate issued on 11/12/2010 is not consistent with the serial number indicated in the monitoring report. Please clarify accordingly.</li> <li>9. Parameter HC<sub>BL,y</sub>, Flow transmitter tag 465FT9023. The calibration date indicated in the monitoring report (11/07/2012) is not consistent with its corresponding calibration certificate (ref. 12.12.1) (10/07/2012). Please clarify.</li> <li>10. Parameter HC<sub>BL,y</sub>, Pressure transmitter tag 465-PIT-9002-A: The calibration date indicated in the MR (ref 4a) (10/12/2010) is not consistent with the calibration certificates provided (ref. 10.19.4) (09/10/2010). Please clarify.</li> <li>11. Parameter EL. No calibration certificates or declaration of conformity were provided for the power meters replaced in the power plant. Additionally please report in section D.2. (parameter detail) the change of the meter.</li> </ol>					
<ol style="list-style-type: none"> <li>12. Parameter EL<sub>-PJ Gross, Aux and Imp</sub>: As per PDD the power meters accuracy should be +/-0.3%. As per the MR (ref 5a) section D.2. the accuracy of the meters PB-0401A161-11, PB-0607A312 and PB-0401A178-11 is +/- 0.5%. Please clarify how this is in compliance with the registered PDD.</li> <li>13. In Monitoring Report (ref 4a) page 12, are reported among the monitoring equipments the “Field biomass conveyor belt”, tag 431-FIQ-903 and the “Biomass to storage conveyor belt”, Tag 431-FIQ 910, however none them are linked/identified in section D.2. Please clarify.</li> </ol>					
<b>CL 3 was raised.</b>					
<b>Project Participant Response:</b>				<b>Date:</b> 20/08/2014	

- 1.- PP provided the corresponding certificate for moisture analyzer Mettler Toledo HB43-S. Ref: "termobalanza sartorius 110715.pdf", "RV Cambio termobalanza Proyecto MDL.msg", "Termobalanza HB 43S 121207.pdf", "Termobalanza HB 43S 131231.pdf".
- 2.- PP clarified that the correct date for calibration certificate 531-WI-5518A cited in issue 2/CL 03 is 14/11/2012. The first page of certificate is a presentation letter where the date is wrong (is has to be 03/01/2013). Due to the mistake is only in a presentation letter and not in the certificate itself, the certificate was corrected erasing the presentation letter. Ref: "531WI5518A 121214 ver2.pdf"
- 3.- PP clarified that in date cited in issue 3/CL03, weighbridge Rice Lake was not installed. As was informed in MR (page 7), Rice Lake weighbridge was installed in 24/01/2012 and before this day was installed Jagxtreme weighbridge. PP corrected tables BR<sub>PJ,n,y</sub> in a new version of MR and provided the corresponding certificate for 27/07/2011. Ref: "ROMANA 1 110727", "Monit NAF1 CP2 MP1 140820 ver2.docx".
- 4.- PP corrected in a new version of MR. Ref: "Monit NAF1 CP2 MP1 140820 ver2.docx".
- 5.- PP clarified that when an equipment indicate an accuracy class, the accuracy must be calculated according international standard OIML. In CESMEC web page, it is explain the methodology to obtain the accuracy of an equipment that weigh (<http://www.cesmec.cl/nueva/div/dm/inf/4/2/11.act>). The accuracy for the different classes of non-automatic scales is given by the following table:



Una Empresa Bureau Veritas

**Acerca de Cesium**

**Servicios**

**Noticias**

**Acceso a Clientes**

**Cotizaciones**

**Contacto**

Paso 3:

Ahora utilizamos la Tabla 2. En ella buscamos la columna que corresponde a la clase III y obtenemos:

En el rango 20 g a 500 g, el EMP de la balanza es igual a 1 g (una vez e)

En el rango 501 g a 2000 g, el EMP de la balanza es es igual a 2 g (dos veces e), el EMP de la balanza es igual a 1 g (una vez e)

Finalmente, en el rango 2001 g a 10000 g, el EMP de la balanza es es igual a 3 g (tres veces e).

**Tabla 2**

EMP (servicio) para cargas m expresadas en intervalos de verificación de escala e				
EMP	CLASE I	CLASE II	CLASE III	CLASE IIII
1 e	$0 \leq m \leq 50000$	$0 \leq m \leq 5000$	$0 \leq m \leq 500$	$0 \leq m \leq 50$
2 e	$50000 < m \leq 200000$	$5000 < m \leq 20000$	$500 < m \leq 2000$	$50 < m \leq 200$
3 e	$200000 < m$	$20000 < m \leq 100000$	$2000 < m \leq 10000$	$200 < m \leq 1000$

For Weigh meters in project NAF1,  $e = 10$  Kg (please see as reference any of the calibration certificates of the monitoring period). Then, according the table above is possible obtain the following accuracies:

- For loads between 10 and 5.000 Kg, and accuracy equal to  $\pm 10$  Kg.
- For loads between 5.000 and 20.000, and accuracy equal to  $\pm 20$  Kg.
- For loads between 20.000 and 100.000 and accuracy equal to  $\pm 30$  Kg.

The last interval is the informed one, because the trucks have an average weight of 45 ton.

6.- PP provided the corrected calibration certificate. Ref: "ROMANA 2 120124 ver2.pdf"

7.- PP clarified that TAG 461-LT-0460 is related with parameter  $FC_{i,project\ plant}$  and not with  $HC_{BL,y}$ . PP corrected MR accordingly and incorporated a gap calibration between 07/06/2012 to 09/07/2012 in a new version of the emission reduction calculation spreadsheet. Ref: "NAF1 monit CP2 MP1 140820 ver2.xlsx"

8.- PP provided the corrected calibration certificate. Ref: "465TT9026 101211 ver2.pdf"

9.- PP corrected the date informed in MR. Ref: "Monrep NAF1 CP2 MP1 140820 ver2.docx".

10.- PP corrected the date informed in MR. Ref: "Monrep NAF1 CP2 MP1 140820 ver2.docx".

11.- PP provided the corresponding certificates and complete the information in section D.2. Ref: "Monrep NAF1 CP2 MP1 140820 ver2.docx".

12.- PP corrected the measurements of these instruments applying the difference, in a conservative manner, between the accuracies ( $\pm 0.2\%$ ) in a new version of the Emission reduction calculation spreadsheet. Ref: "NAF1 monit CP2 MP1 140820 ver2.xlsx".

13.- PP clarified that the different types of biomass are monitored according the following table:

<i>Biomass residues category k</i>	<i>Biomass residues type</i>	<i>Biomass residues source</i>	<i>Instruments</i>
1	Sludge from industrial operations	Off-site production	Weigh meters
2+3	Mix of sawdust and bark from industrial operations.	On-site production	463-FIQ-174 431-FIQ-502 Weigh meters
4	Mix of sawdust and bark from industrial operations	Off-site production	531-WI-5518A Weigh meters
5	Sawdust/bark forestry operations	Off-site production	Weigh meters

The cited instrument in diagram page 12 of MR (TAG 431-FIQ-903 and 431-FIQ-910), refers to conveyor belt scales used to crosscheck the quantity of type of biomass. To avoid misunderstandings, PP eliminated these instruments from the diagram. Ref: "Monrep NAF1 CP2 MP1 140820 ver2.docx".

#### Documentation Provided as Evidence by Project Participant:

Termobalanza sartorius 110715.pdf  
RV Cambio termobalanza Proyecto MDL.msg  
Termobalanza HB 43S 121207.pdf  
Termobalanza HB 43S 131231.pdf  
531WI5518A 121214 ver2.pdf  
ROMANA 1 110727  
Monrep NAF1 CP2 MP1 140820 ver2.docx  
NAF1 monit CP2 MP1 140820 ver2.xlsx  
ROMANA 2 120124 ver2.pdf  
465TT9026 101211 ver2.pdf

<b>Information Verified by Lead Assessor:</b> Termobalanza sartorius 110715.pdf (ref.10.30.a) RV Cambio termobalanza Proyecto MDL.msg (ref.9.4) Termobalanza HB 43S 121207.pdf (ref. 10.30.b) Termobalanza HB 43S 131231.pdf (ref. 10.30.c) 531WI5518A 121214 ver2.pdf (ref. 10.28.3b) ROMANA 1 110727 (ref 10.1.1.) Monrep NAF1 CP2 MP1 140820 ver2.docx (ref 4b) NAF1 monit CP2 MP1 140820 ver2.xlsx ROMANA 2 120124 ver2.pdf (ref. 10.1.6.b) 465TT9026 101211 ver2.pdf (ref. 10.23.1.b) Certificados de fabrica.pdf (ref. 9.40), the file was received from the PP as part of their response but it was not listed by PP in the section above.
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b> <ol style="list-style-type: none"> <li>1. The PP provided the missing certificates (ref. 10.30.a, 10.30.b, 10.30.c), it was verified that the calibration certificates reported in the MR version2 (ref.4b) is correct against the certificates (ref. 10.30.a, 10.30.b, 10.30.c). <b>Item closed.</b></li> <li>2. It was reviewed against the document previously available (ref. 10.28.3) and considered the PP's explanation. The certificate provided (ref 10.28.3.b) has been accepted. <b>Item closed.</b></li> <li>3. It was verified that MR version 2 (ref 4b) corrected the calibration dates of the of the weighbridge RICE Lake (s/n 325078). <b>Item closed.</b></li> <li>4. It was verified that MR version 2 (ref 4b) was corrected, the accuracy class of the weighbridge Rice Lake s/n 325078 is now consistently reported in section B1 and D.2. <b>Item closed.</b></li> <li>5. It was verified that class III is equivalent to +/-30 kg, this considering the information published by CESMEC (a certified national organization) and the capacity of each weighbridge. <b>Item closed.</b></li> <li>6. The PP provided the correct calibration certificate (ref 10.1.6.b), it was verified that it is correct considering the S/N of the equipment informed in the MR and verified on site. <b>Item closed.</b></li> <li>7. It was verified that MR version 2 (ref 4b) reported correctly the calibration frequency defined for the level transmitter TAG 461-LT-0460 linked to the parameter <math>FC_{i,Project\ Plant,y}</math>. Additionally it was verified that the PP acknowledge a gap in the calibration from 07/06/2012 to 09/07/2012, this issue is assessed in CAR 5 item 1. <b>Item closed.</b></li> <li>8. The new calibration certificate received from the PP (ref. 10.23.1.b) was reviewed and found correct, the serial number of the equipment is consistent with the one informed in the MR and verified on site. <b>Item closed.</b></li> <li>9. It was verified that the calibration date of the meter tag 465-FT-9023 was corrected in MR version 2 (ref 4b) accordingly with the calibration certificate (ref. 12.12.1) (10/07/2012). <b>Item closed.</b></li> <li>10. It was verified that the calibration date of the meter tag 465-PIT-9002-A was corrected in MR version 2 (ref 4b) accordingly with the calibration certificate (ref. 10.19.4) (09/10/2010). <b>Item closed.</b></li> <li>11. It was verified that MR version 2 (ref 4b), section D.2., informs the date when the electricity meters (ELPJ,gross,y ELPJ,aux,y and ELPJ,imp,y) were changed, however still is incomplete section B.1. (replacement of meter tag 468-PM-003 is not reported). <b>Item remains open.</b></li> <li>12. It was verified that the PP acknowledge the incompliance of the electricity meters accuracy (for period 01/01/2012 until 22/08/2013, when they were replaced by the new ones). As per PDD the committed accuracy was +/- 0.3%, while the accuracy of meters installed in the cited period was +/- 0.5%, in accordance with PS version 7, appendix 1, paragraph 4, this permanent change does not require prior approval by the board. It was verified that the ER calculation was conservative corrected, <math>EL_{PJ,gross,y}</math> was diminished in 0.2% and while <math>EL_{PJ,imp,y}</math> and <math>EL_{PJ,aux,y}</math> was increased in 0.2%. The ER spreadsheet version 2 (ref 5b) reports the monitored data in tabs "2012 Data" and "2013 Data", and the application of the cited correction is done in tabs "2012 Emissions" and "2013 Emissions", cell E99, the correction was done for the whole 2012 and from January until August 2013.  In order to provide a complete information the PP is requested to report the temporary deviation related </li> </ol>

with the electricity meters in MR section B.2.1. **Item remains open.**

13. The PP clarified that “*Field biomass conveyor belt*”, tag 431-FIQ-903 and the “*Biomass to storage conveyor belt*”, Tag 431-FIQ 910 are not involved with the parameters monitoring, the same was confirmed during the site visit. It was verified that MR version 2 (ref 4b) delete the cited equipments from section C. **Item closed.**

**CL 3 remains open.**

<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 27/08/2014
<b>Project Participant Response:</b>	<b>Date:</b> 25/09/2014
11.- PP corrected MR, section B.1, including information corresponding to the replacement of electric meter 468-PM-003. Ref: “Monrep NAF1 CP2 MP1 141008 ver3.docx”	
12.- PP report a temporary deviation, corresponding to the differences between the accuracy of the installed energy meters and the declared accuracy in PDD, in a new version of the MR. Ref: “Monrep NAF1 CP2 MP1 141008 ver3.docx”.	
<b>Documentation Provided as Evidence by Project Participant:</b>	
Monrep NAF1 CP2 MP1 141008 ver3.docx	
<b>Information Verified by Lead Assessor:</b>	
Monrep NAF1 CP2 MP1 141008 ver3.docx (ref 4c)	
Cambio iones 2013.pdf (ref 9.36), the file was received from the PP but it was not listed by PP in the section above.	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
11. It was verified that the PP completed section B.1 correctly informing the replacement of meter tag 468-PM-003. The equipment description is correct against the information verified on site and the replacement date was found correct against the meters provider records (ref. 9.36). <b>Item closed.</b>	
12. It was verified that MR version 3 (ref 4c) reports correctly the temporary deviation linked to the energy meters. As it is described in the MR (ref 4c) and verified on site, from 01/01/2012 until 21/08/2013 the energy meters installed had an accuracy equal to +/- 0.5% (ref. 9.18), while the committed accuracy in the registered PDD (ref. 1) is +/- 0.3%. As per Project Standard, appendix 1, item 4 the situation previously described does not require prior approval, it was verified as well that the PP adjusted the measured value using the difference between the committed and real accuracy of the meters (ref. 5c). <b>Item closed.</b>	
<b>CL 3 was closed on 13/10/2014, re-opened 26/11/2014</b>	
12. Please clarify and revise the approach followed with the monitoring of $EL_{PJ,gross,y}$ , $EL_{PJ,imp,y}$ and $EL_{PJ,aux,y}$ during the period 01/01/2014 – 21/08/2014, considering PS version 7.	
<b>CL 3 remains open.</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 13/10/2014, 26/11/2014



<b>Project Participant Response:</b>	<b>Date:</b> 02/12/2014
<p>Second version of PDD declared the electric meters accuracy programmed to be replaced during second crediting period. Replacement of the electric meters was performed the 21/08/2013 (page 11, section B.2.3 of the MR). Meanwhile, the equipment installed for the first crediting period, with an accuracy level of +/-0.5%, operated applying all the quality control and assurance procedures. In knowledge of this discrepancy, Project Participant decided to apply a correction to all measures collected with mayor accuracy than the compromised in PDD. Due to Appendix 1, item 4 of Project Standard (Version 07) does not exactly explained this issue, Project Participant decided to correct PDD in a new version, considering that, due to operational reasons, the equipment installed to measured parameters <math>EL_{PJ,gross,y}</math>, <math>EL_{PJ,imp,y}</math> and <math>EL_{PJ,aux,y}</math> might be replaced in the future. Ref: "PDDV4_141202.docx"</p>	
<b>Documentation Provided as Evidence by Project Participant:</b>	
PDDV4_141202.docx	
<b>Information Verified by Lead Assessor:</b>	
<p>PDDV4_141202.docx (ref. 1.1)  Monrep NAF1 CP2 MP1 141202 ver5.docx (ref 4e), the file was received from the PP but it was not listed by PP in the section above.  NAF1 monit CP2 MP1 141202 ver5.xlsx (ref. 5e), the file was received from the PP but it was not listed by PP in the section above.</p>	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
<p>As per registered PDD<sup>1/</sup> the committed accuracy was +/- 0.3%, while the accuracy of meters (s/n PB-0401A161-11, PB-0607A312-11 and PB-0401A178-11) installed during 01/01/2012 - 22/08/2013 was +/- 0.5%. It was verified that from 22/08/2013 onwards, the Monitoring Plan<sup>4e/</sup> implemented was in compliance with the registered PDD<sup>1/</sup> because the accuracy of the meters is the same than the committed in the MP. Thus in order to overcome this situation, the PP presented the corrected PDD<sup>1.1/</sup> where the Monitoring Plan has been corrected in order to reflect both meters involved. It was verified that this change to the monitoring plan is in compliance with PS version 7, appendix 1, paragraph 4, thus it does not require prior approval and is presented together with the verification.</p> <p>In compliance with PS version 7, appendix 1, paragraph 4a, the PP states in the revised MP<sup>1.1/</sup> that measurements have to be corrected in those cases where the accuracy of the installed equipment is lower than the one committed in the PDD. Following the PS guidance, the PP applied a correction of 0.2%, equivalent to the difference between the committed accuracy (0.3%) and the real one (0.5%), over the parameter. The ER spreadsheet version 5<sup>5e/</sup> reports the monitored data in tabs "2012 Data" and "2013 Data". Given that this parameter is involved in baseline emissions, following a conservative approach the records of the parameter were diminished in 0.2%. The application of the cited correction is done in tabs "2012 Emissions" and "2013 Emissions", cell E99, the correction was done for the whole 2012 and from January until August 2013..</p> <p>The correction applied followed correctly the conservative approach required by PS version 7, appendix 1, paragraph 4, finally it was verified that this change to the monitoring plan does not require prior approval by the board. <b>Item 12 closed.</b></p>	
<b>CL 3 was closed.</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 03/12/2014



Date:	20/06/2014		Raised by:	Alicia Fernández		
Type:	CL	Number:	4		Reference:	AU4 section 2 – technical specifications

**Lead Assessor Comment:**
**Date:** 20/06/2014 & 27/06/2014

**Monitoring equipment supporting information**

In accordance with the information reported in the MR v1:

1. please provide technical data sheets, including calibration frequency and accuracy, of the following equipment:

Equipment name	Serial number or Tag	Missing information
Log processing Bark conveyor belt weight meter BW500	431-FIQ-502	Calibration frequency and accuracy
Pulp Mill Bark conveyor Belt weight meter KEPRO 2200	TAG 531-Wi-5518A	Calibration frequency and accuracy
Mettler Toledo HB43-S	S/N B235265966	Calibration frequency
Weighbridge Rice Lake IQ+355	325078	Calibration frequency

2. Please provide the supporting evidence that record the dates when each equipment identified in MR section B.1. was changed/replaced.
3. During the site visit it was found that meter tag 465-PIT-9001-B was replaced. Please report this accordingly in the MR and provide the following support: record of the replacement date, technical sheet of the new equipment and its calibration certificate.

**CL 4 was raised.**
**Project Participant Response:**
**Date:** 20/08/2014

- 1.- PP provided the corresponding supports for the cited equipment:

Equipment name	Serial number or Tag	Support document
Log processing Bark conveyor belt weight meter BW500	431-FIQ-502	Accuracy: "Precisión pesómetro Siemens.PNG" Calibration frequency: "Recomendación pesómetros Siemens.pdf"
Pulp Mill Bark conveyor Belt weight meter KEPRO 2200	TAG 531-Wi-5518A	Accuracy: "Kuovo.pdf". Calibration frequency: "Frecuencia calibración Kuovo belt scales (3).pdf"
Mettler Toledo HB43-S	S/N B235265966	Calibration frequency: "Recomendación termobalanza.pdf"
Weighbridge Rice Lake IQ+355	325078	Calibration frequency: "Carta Clientes.pdf"

- 2.- PP provided the corresponding supports for the cited equipment:

Equipment name	Serial number or Tag	Missing information
Weighbridge Rice Lake IQ+355	325078	"Informe técnico romana Nueva Aldea.pdf"
Energy meters ION 7330	468-PM-008 468-PM-003 468-PM-006	"cambio iones 2013.pdf" "User guide manual 7330.pdf" "Manual instalación ion 7330 schneider.pdf" "Certificados de fabrica.pdf"
Pressure transmitter 5.5 bar (main line)	465-PIT-9002A	"465 PIT 9002A 130820.pdf"
Mettler Toledo HB43-S		"RV cambio termobalanza.msg"

3.- PP clarified that pressure meter TAG 465-PIT-9001B was replaced in 01 of April, 2014, after the monitoring period reported in this Monitoring Report. PP provided support documents related with the equipment change. Ref: "465PIT9001B 140401.pdf", "Manual-Precisión 465PIT9001B.pdf", "RE listado equipos críticos bonos de carbono Fase 1.msg".

**Documentation Provided as Evidence by Project Participant:**

Precisión pesómetro Siemens.PNG  
Recomendación pesómetros Siemens (3).pdf  
Kuovo.pdf  
Frecuencia calibración KUOVO belt scales.pdf  
Recomendación termobalanza.pdf  
Carta Clientes.pdf  
Informe técnico romana Nueva Aldea.pdf  
cambio iones 2013.pdf  
User guide manual 7330.pdf  
Manual instalación ion 7330 Schneider.pdf  
Certificados de fabrica.pdf  
465 PIT 9002A 130820.pdf  
RV cambio termobalanza.msg  
465PIT9001B 140401.pdf  
Manual-Precisión 465PIT9001B.pdf  
RE listado equipos críticos bonos de carbono Fase 1.msg

**Information Verified by Lead Assessor:**

Precisión pesómetro Siemens.PNG (ref. 9.29)  
Recomendación pesómetros Siemens (3).pdf (ref. 9.30)  
Kuovo.pdf (ref. 9.31)  
Frecuencia calibración KUOVO belt scales.pdf (ref. 9.32)  
Recomendación termobalanza.pdf (ref. 9.34)  
Carta Clientes.pdf (Ref. 9.35)  
Informe técnico romana Nueva Aldea.pdf (ref. 9.37)  
cambio iones 2013.pdf (ref. 9.36)  
User guide manual 7330.pdf (ref. 9.38)  
Manual instalación ion 7330 Schneider.pdf (ref. 9.39)  
Certificados de fabrica.pdf (ref. 9.40)  
465 PIT 9002A 130820.pdf (ref. 10.19.4)  
RV cambio termobalanza.msg (ref. 10.31)  
465PIT9001B 140401.pdf (ref. 10.18.4)  
Manual-Precisión 465PIT9001B.pdf (ref. 9.41)  
RE listado equipos críticos bonos de carbono Fase 1.msg (ref. 9.42)

**Reasoning for not Acceptance or Acceptance and Close Out:**

1. please provide technical data sheets, including calibration frequency and accuracy, of the following equipment:

Equipment name	Serial number or Tag	Assessment
Log processing Bark conveyor belt weight meter BW500	431-FIQ-502	The PP provided the required support (ref 9.29 and 9.30), the accuracy informed in MR version 2 is correct. About the calibration frequency, the provider recommends every two years, however the PP will follow a conservative approach every 1 year. <b>Item closed.</b>
Pulp Mill Bark conveyor Belt weight meter KEPRO 2200	TAG 531-Wi-5518A	The PP provided a mail from the provider (ref. 9.32) where it is confirmed that calibration should be done at least every year, the information included in MR version 2 (ref 4b) is correct against the source. About accuracy the PP provide a information note from the provider (ref 9.31), please clarify the that the cited document corresponds to the involved equipment. <b>Item remains open.</b> It has to be noted that MR version 2 (ref 4b) does not provide the identification (S/N) of this meter and during the site visit it was available. Please complete. <b>Item remains open.</b>
Mettler Toledo HB43-S	S/N B235265966	The PP provided the required support (ref 9.34), the calibration frequency informed by the provider states "it is recommended a calibration at least once every 12 months", which is annually. Please note that the footnote 5 (on page 50) of MR version 2, is not consistent with the provider recommendation. <b>Item remains open.</b>
Weighbridge Rice Lake IQ+355	325078	The PP provided the required support (ref 9.35), the calibration frequency informed in MR version 2 is correct. <b>Item closed.</b>

2. Regarding the date when monitoring equipment was replaced the following table summarize the assessment:

Equipment name	Serial number or Tag	Assessment
Weighbridge Rice Lake IQ+355	325078	The PP provided the required support (ref 9.37), the date of replacement of the equipment informed in MR version 2 is correct. <b>Item closed.</b>
Energy meters ION 7330	468-PM-008 468-PM-003 468-PM-006	The PP provided the required support (ref 9.36, 9.38, 9.39, 9.40). It was verified that the electricity meters changed (reported in section D.2 and B.1 of MR version 2 is correct against the report issued by the provider (ref 9.36). It was verified against the technical specifications of the meter (ref 9.39) that the meters accuracy is +/-0.3% thus the information reported in MR version 2 is correct. <ul style="list-style-type: none"> <li>- It is worth to mention that MR section B.1. reports wrongly the model of new meter 468-PM-008 and that does not report the change of meter 468-PM003, which is informed in section D.2 and was verified during the site visit. Please correct. <b>Item remains open.</b></li> <li>- Please report the model of the new electricity meter in a complete manner in section D.2. <b>Item remains open.</b></li> <li>- As per the calibration factory certificates (ref 9.40), the new meters were calibrated as follow :</li> </ul>

Equipment name	Serial number or Tag	Assessment			
		Tag	S/N	Factory Calibration (ref 9.40)	Calibration date as per MR (ref 4b)
		468-PM-008	PB-1210A067-11	05/10/2012	22/08/2013
		468-PM-003	PB-1210A504-11	01/11/2012	22/08/2013
		468-PM-006	PB-1210A467-11	31/10/2012	22/08/2013
		Please clarify the difference in the calibration date (MR and certificates). <b>Item remains open.</b>			
Pressure transmitter 5.5 bar (main line)	465-PIT-9002A	The PP provided the required support (ref 10.19.4), the date of replacement of the equipment informed in MR version 2 is correct. Based on the technical specifications of the new meter (ref. 9.41) it was verified that the new device is equal (same brand and model) thus it has the same accuracy than the previous one <b>Item closed.</b>			
Mettler Toledo HB43-S		The PP provided the required support (ref 10.31), the date of replacement of the equipment informed in MR version 2 is correct. <b>Item closed.</b>			

3. It was verified that MR version 2 (ref 4b), section B.1. reports the change of the equipment tag 465-PIT-9001-B. The PP provided the required support (ref 10.18.4), the date of replacement of the equipment informed in MR version 2 is correct. Similarly based on the technical specifications of the new meter (ref. 9.41) it was verified that the new device has the same accuracy than the previous one. **Item closed.**

**CL 4 remains open.**

<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 27/08/2014
<b>Project Participant Response:</b>	<b>Date:</b> 24/09/2014
<p>1.- For the instrument Kepro 2200 TAG 531-WI-5518A, Pulp mill bark conveyor belt weight meter, PP clarified:</p> <ul style="list-style-type: none"> <li>PP contacted the provider and received confirmation that equipment cited in document "Kouvo.pdf" correspond to model Kepro 2200. Ref: "VS Conveyor belt data confirmation.msg".</li> <li>PP corrected monitoring report an included the serial number of the equipment. Ref: "Monrep NAF1 CP2 MP1 141008 ver3.docx".</li> </ul> <p>For the equipment Mettler Toledo HB43-S, PP clarified:</p> <ul style="list-style-type: none"> <li>Monitoring report was corrected according provider recommendation. Ref: "Monrep NAF1 CP2 MP1 141008 ver3.docx"</li> </ul> <p>2.- For Energy meters ION 7330, TAGs 468-PM-003, 468-PM-006 and 468-PM-008, PP clarified:</p> <ul style="list-style-type: none"> <li>MR was corrected: Model of new meter 468-PM-008 was corrected to ION 7330 and that the change of meter 468-PM-003 was included. Ref: "Monrep NAF1 CP2 MP1 141008 ver3.docx".</li> <li>Section D.2. of the MR was corrected including the completely model description of ION 7330 Energy meters. Ref: "Monrep NAF1 CP2 MP1 141008 ver3.docx".</li> <li>PP wrongly reported the date of installation of the instruments as calibration date. MR was corrected the corresponding calibration dates and presented the calibration certificates separately. Ref: "Monrep NAF1 CP2 MP1 141008 ver3.docx", "468PM003 121101.pdf", "468PM006 121031.pdf", "468PM008 121005.pdf"</li> </ul>	
<b>Documentation Provided as Evidence by Project Participant:</b>	
VS Conveyor belt data confirmation.msg Monrep NAF1 CP2 MP1 141008 ver3.docx 468PM003 121101.pdf 468PM006 121031.pdf 468PM008 121005.pdf	
<b>Information Verified by Lead Assessor:</b>	

<p>VS Conveyor belt data confirmation.msg (ref. 9.44)  Monrep NAF1 CP2 MP1 141008 ver3.docx (ref. 4c)  468PM003 121101.pdf (ref. 10.25)  468PM006 121031.pdf (ref 10.26)  468PM008 121005.pdf (ref. 10.27)</p>	
<p><b>Reasoning for not Acceptance or Acceptance and Close Out:</b></p>	
<p>1.  - It was verified by an e-mail from the provider (ref. 9.44) that the technical specs available (ref. 9.31) corresponds to the KEPRO2200, which is the installed equipment and verified on site (ref 17). <b>Item closed.</b>  - It was verified that MR version 3 (ref. 4c) reports properly the S/N of the meter KEPRO 2200 (TAG 531-WI-5518A), the number reported is correct against the one verified on site (ref. 17). <b>Item closed.</b>  - It was verified that MR version 3 (ref 4c) reports correctly the calibration frequency of the “moisture analyzer” as per the equipment provider (ref. 9.34). <b>Item closed.</b></p> <p>2.  - It was verified that MR version 3 (ref 4c), section B1. Has been corrected, the information now reported is correct against the information verified on site (ref. 17) and it is consistent with information reported in section D.2. <b>Item closed.</b>  - It was verified that the calibration date of the new energy meters installed on 22/08/2013 has been corrected in MR version 3 (ref 4c) and the information is correct against the calibration certificates (ref. 9.40, ref. 10.25, 10.26 &amp; 10.27). <b>Item closed.</b>  <b>CL 4 is closed.</b></p>	
<p><b>Acceptance and Close out by Lead Assessor:</b></p>	<p><b>Date:</b> 14/10/2014</p>

Date:	20/06/2014		Raised by:	Alicia Fernández		
Type:	CAR	Number:	5		Reference:	AU4 section 2 – delayed calibrations

**Lead Assessor Comment:**
**Date:** 20/06/2014

**Monitoring equipment calibration gaps**

- During the review of the documents, the following calibration gaps were found:

Tag	Name	Calibration date	Expected calibration before:	Actual calibration
463-FT-0402	Steam flow meter 85 bar ABB S/N 6403015454	07/12/2010	07/06/2012	09/07/2012
463-PT-0403	Pressure transmitter 85 bar s/n 6403015460	07/12/2010	07/06/2012	09/07/2012
465-PIT-9000-A	Pressure transmitter 19 bar ABB S/N 6404008677	10/12/2010	10/06/2012	09/07/2012
465-PIT-9000-B	Pressure transmitter 19 bar (main line) ABB S/N 6404008676	10/12/2010	10/06/2012	09/07/2012
465-PIT-9001-A	Pressure transmitter 11.5 bar (main line) ABB S/N 6404008680	09/12/2010	09/06/2012	10/07/2012
465-PIT-9001-B	Pressure transmitter 11.5 bar (main line) S/N 6404008679	09/12/2010	09/06/2012	10/07/2012
461-LT-0460	Level transmitter 264HCHRBEFSSA1	07/06/2011	07/06/2012	09/07/2012

Please correct the measurements in accordance with the provisions in VVS v7.0:

2. Weighbridge 1 North entrance Rice Lake IQ+355: the calibration frequency specified for this equipment is twice a year, however it was calibrated only once in the year 2012. Please correct the measurements in accordance with VVS guidelines.
3. Electronic moisture analyzer: according to the information reported in the MR version 1, the calibration frequency for the moisture analyzer Sartorius AG S/N 17302238 is 14/07/2012. However, it was identified that it did not undergo calibration until 07/12/2012, 5 months later. Please clarify how this is considered to meet the calibration requirements of this equipment.
4. Electronic moisture analyzer Sartorius (accuracy class I) was replaced by another of different accuracy class (Mettler Toledo HB43-S, accuracy Class II). Please confirm how this comply with the requirements of the PDD.

**CAR 5 was raised.**

Project Participant Response:

Date: 20/08/2014

1. PP corrected according the following table:

Tag	Name	Correction applied	Corrected period	Reference
463-FT-0402	Steam flow meter 85 bar ABB S/N 6403015454	+0.075% (-0.125% is Maximum error in 463-FT-0402 120709.pdf, then it was applied the maximum defined accuracy)	07/06/2012 to 09/07/2012	TA05-PTE-FO-021 Resumen Vapores 2012 ver2.xlsx TA05-PTE-FO-024 Integradores 2012 ver2.xlsx
463-PT-0403	Pressure transmitter 85 bar s/n 6403015460	-0.075%	2012	NAF1 monit CP2 MP1 140820 ver2.xlsx
465-PIT-9000-A	Pressure transmitter 19 bar ABB S/N 6404008677	-0.075%	2012	NAF1 monit CP2 MP1 140820 ver2.xlsx
465-PIT-9000-B	Pressure transmitter 19 bar (main line) ABB S/N 6404008676	-0.075%	2012	NAF1 monit CP2 MP1 140820 ver2.xlsx
465-PIT-9001-A	Pressure transmitter 11.5 bar (main line) ABB S/N 6404008680	-0.075%	2012	NAF1 monit CP2 MP1 140820 ver2.xlsx
465-PIT-9001-B	Pressure transmitter 11.5 bar (main line) S/N 6404008679	-0.075%	2012	NAF1 monit CP2 MP1 140820 ver2.xlsx
461-LT-0460	Level transmitter 264HCHRBEFSSA1	+ 0.295% over the level measured during gap. (Original measurement: 91.4% of tank capacity)	June and July 2012	TA05-PTE-FO-018 Consumo combustibles fósiles 2012 ver2.xlsx

The enthalpies related with instruments 463-PT-0403, 465-PIT-9000-A, 465-PIT-9000-B, 465-PIT-9001-A, 465-PIT-9001-B were calculated using a special program for excel: Steamdat.exe

2. PP clarified that exist other calibration certificate during 2012. All Weighbridge (1, 2 and 3) were always calibrated together. The second calibration were executed in 25<sup>th</sup> of July, 2012. PP provided the corresponding support document. Ref: "ROMANA 01 120725.pdf".

3. PP clarified that the information in version 1 of the Monitoring Report was incomplete. Moisture Analyzer Sartorius AG S/N 17302238 had a calibration during 2012. PP provided the corresponding document and corrected MR as properly. Ref: "Termobalanza Sartorius 120621.pdf"

4. PP clarified that the accuracy of a scale is defined by the measurement range were it is used and not only for the accuracy class. As is showed in CESMEC web page, <http://www.cesmec.cl/nueva/div/dm/inf/4/2/11.act>, and considering that the measurement range are limited by the maximum capacity of the scale, the accuracies of the scales are defined by the following table:

Scale and accuracy class	Measurement range	Verification range (e)	Accuracy (equal to 1e)
Sartorius Class I	0-100 g	0.001 g	+/-0.001 g
Mettler Toledo Class II	0-50 g	0.001 g	+/-0.001 g



Documentation Provided as Evidence by Project Participant:			
TA05-PTE-FO-021 Resumen Vapores 2012 ver2.xlsx TA05-PTE-FO-024 Integradores 2012 ver2.xlsx NAF1 monit CP2 MP1 140820.xlsx TA05-PTE-FO-018 Consumo combustibles fósiles 2012 ver2.xlsx ROMANA 01 120725.pdf Termobalanza Sartorius 120621.pdf			
Information Verified by Lead Assessor:			
TA05-PTE-FO-021 Resumen Vapores 2012 ver2.xlsx (ref. 8.10.2b) TA05-PTE-FO-024 Integradores 2012 ver2.xlsx (ref. 8.10.1b) NAF1 monit CP2 MP1 140820.xlsx (ref. 5b) TA05-PTE-FO-018 Consumo combustibles fósiles 2012 ver2.xlsx (ref. 8.7.1.b) ROMANA 01 120725.pdf (10.1.15) Termobalanza Sartorius 120621.pdf (ref. 10.32)			
Reasoning for not Acceptance or Acceptance and Close Out:			
1.			
Tag	Name	Error Found vs Accuracy	assessment
463-FT-0402	Steam flow meter 85 bar ABB S/N 6403015454	Error found in calibration (ref. 10.6.2): 0.193%; 0.49%; 0.5%; 0.478%; 0.125% Accuracy: +/- 0.075%	It was found that that the PP applied a correction in the Excel file (ref. 8.10.1.b) that contains the daily steam records. The correction was done from 07/06_2012 until 09/07/2012. Later it was verified that the sum of the daily values was transcribed into "integradores" (ref. 8.10.2.b). The correction was done in a conservative way, however the PP is requested to revise again the error found in the calibration and compare them with the accuracy. <b>Item remains open.</b>
463-PT-0403	Pressure transmitter 85 bar s/n 6403015460	Error found in calibration (ref. 10.8.2): 0.213% ; 0.3% ; 0.3% ; 0.225% ;0.1% Accuracy: +/- 0.075%	It was found that that the PP applied a correction in the in the value of the pressure used to determine the steam enthalpy (ref. 5b). The correction applied was done in a conservative way, however the PP is requested to revise again the error found in the calibration and compare them with the accuracy. <b>Item remains open.</b>
465-PIT-9000-A	Pressure transmitter 19 bar ABB S/N 6404008677	Error found in calibration (ref. 10.15.2): 0.038%; 0.231%; 0.269%; 0.231%; 0.269% Accuracy: +/- 0.075%	
465-PIT-9000-B	Pressure transmitter 19 bar (main line) ABB S/N 6404008676	Error found in calibration (ref. 10.16.2): 0.231%; 0.077%; 0.115%; 1.731%; 0.115% Accuracy: +/- 0.075%	
465-PIT-9001-A	Pressure transmitter 11.5 bar (main line) ABB S/N 6404008680	Error found in calibration (ref. 10.17.2): 0.032%; -0.032%; 0.036%; 0.036%; 0.036% Accuracy: +/- 0.075%	It was found that that the PP applied a correction in the in the value of the pressure used to determine the steam enthalpy (ref. 5b). It was verified that the error found at the calibration were lower than the accuracy. The value applied for the correction was 7.5%, PP is requested to review the proper application of the correction. <b>Item remains open.</b>
465-PIT-9001-B	Pressure transmitter 11.5 bar (main line) S/N 6404008679	Error found in calibration (ref. 10.18.2): 0.053%; 0.04%; 0.007%; 0.033%; 0.033%. Accuracy: +/- 0.075%	
461-LT-0460	Level transmitter 264HCHRBEFSSA1	Error found in calibration (ref. 10.3.2): 0.31%; 0.31%; 0.44%; 0.12 % Accuracy: +/- 0.075%	It was found that the correction done in file ref. 8.7.1.b (June and July 2012) applies an error equal to 0.075%, however as per the PP answer the error applied should be 0.295%. PP is requested to review the error applied. On the other hand in was found that the corrected fossil fuel reported in the ER excel file version 2 (ref 5b) neither match with ref. 8.7.1.b nor corresponds to the application of 0.295%. <b>Item remains open.</b>
2. The PP provided the missing certificate corresponding to the second calibration performed in 2012 (ref. 10.1.15), it was verified that the Weighbridge 1 North entrance Rice Lake IQ+355 was calibrated on 25/07/2012 (ref. 10.1.15) and on 24/01/2012 (ref. 10.1.2). Thus the calibration was performed in accordance with the			

committed calibration frequency defined by the provider (ref. 9.35). Thus there is no gap in the calibration. **Item closed.**

3. The PP provided the missing certificate corresponding to the second calibration performed in 2012 (ref. 10.32), it was verified that the *Moisture Analyzer Sartorius* was calibrated on 21/06/2012 (ref. 10.32) and on 15/07/2011 (ref. 10.30.a). Thus the calibration was performed in accordance with the committed calibration frequency defined by the provider (ref. 9.19). Thus there is no gap in the calibration. **Item closed.**

5. The PP is requested to provide the accuracy class of the new balance defined by the equipment provider. **Item remains open.**

**CAR 5 remains open**

**Acceptance and Close out by Lead Assessor:**

**Date:** 04/09/2014

**Project Participant Response:**

**Date:** 08/10/2014

1.-

Tag	Name	Error applied	assessment
463-FT-0402	Steam flow meter 85 bar ABB S/N 6403015454	0.5%	PP corrected daily data from 07/06/2012 to 09/07/2012 applying an error of 0.5%. Files TA05-PTE-FO-021 Resumen Vapores 2012 and ER spreadsheet calculation were accordingly corrected. Ref: "TA-PTE-FO-024 Integradores 2012 ver3.xlsx", "TA-PTE-FO-021 Resumen vapors 2012 ver3.xlsx", "NAF1 monit CP2 MP1 140929 ver3.xlsx"
463-PT-0403	Pressure transmitter 85 bar s/n 6403015460	0.3%	PP applied the declared correction in pressure set point value used to determine the steam enthalpy. Enthalpy was calculated using excel complement "Steamdat.xla". Ref: "NAF1 monit CP2 MP1 140929 ver3.xlsx"
465-PIT-9000-A	Pressure transmitter 19 bar ABB S/N 6404008677	1.731%	
465-PIT-9000-B	Pressure transmitter 19 bar (main line) ABB S/N 6404008676		
465-PIT-9001-A	Pressure transmitter 11.5 bar (main line) ABB S/N 6404008680	0.075%	PP applied the declared correction in pressure set point value used to determine the steam enthalpy. Enthalpy was calculated using excel complement "Steamdat.xla". Ref: "NAF1 monit CP2 MP1 140929 ver3.xlsx".
465-PIT-9001-B	Pressure transmitter 11.5 bar (main line) S/N 6404008679		
461-LT-0460	Level transmitter 264HCHRBESSA1	0.295%	PP applied the declared correction to the fossil fuel combusted in power boiler. ER spreadsheet calculation was accordingly corrected. Ref: "TA05-PTE-FO-018 Consumos combustibles fósiles 2012 ver3.xlsx", "NAF1 monit CP2 MP1 140929 ver3.xlsx".

5. - According the document "HB43-S tolerance.pdf" emitted by the provider of the equipment, model HB43-S has a readability ("d") of 1 mg (0.001 g) and a verification scale interval ("e") equal to "d". According to document "NIST HB44 (2014) Specifications, Tolerances and Others Technical Requirements for Weighing and Measuring Devices" published by National Institute of Standards and Technology ([www.nist.gov](http://www.nist.gov)) in section 2, paragraph S.1.2.2.1, page 2-8, the Verification scale interval ("e") for a balance class I, class II or Dynamic Monorail scales is:

$$d < e < 10 \cdot d$$

Then, according to table 2 of the document "OMCL\_ Qualification of balance.pdf" (attached table below), and the excel file "DpOIML76 HB43-S.xlsx", published in CESMEC webpage (<http://www.cesmec.cl/cgi-bin/documento.cgi?id=319>, date of consulting: 02.10.2014), it's possible to calculate the accuracy class of the instrument as follow:

**Table 2:** The verification scale interval, number of verification scale intervals and minimum capacity in relation to the accuracy class of an instrument.

Accuracy class	Verification scale interval ( $e$ )	Number of verification scale intervals ( $n = \text{Max}/e$ )		Minimum capacity (Min) (Lower limit)
		minimum	maximum	
Special I	$0.001 \text{ g} \leq e$ (*)	50 000 (**)	-	100 $e$
High II	$0.001 \text{ g} \leq e \leq 0.05 \text{ g}$	100	100 000	20 $e$
Medium III	$0.1 \text{ g} \leq e$	5 000	100 000	50 $e$
Ordinary III	$0.1 \text{ g} \leq e \leq 2 \text{ g}$	100	10 000	20 $e$
	$5 \text{ g} \leq e$	500	10 000	20 $e$
	$5 \text{ g} \leq e$	100	1 000	10 $e$

\* It is not normally feasible to test and verify an instrument to  $e < 1 \text{ mg}$  due to the uncertainty of the test loads.

\*\* For an instrument of class I with  $d < 0.1 \text{ mg}$ ,  $n$  may be less than 50000. The minimum capacity is reduced to  $5 e$  for grading instruments, i.e. instruments that determine a transport tariff or toll (e.g. postal scales and instruments weighing waste material).

On multiple range instruments, the verification scale intervals are  $e_1, e_2, \dots, e_r$  with  $e_1 < e_2 < \dots < e_r$ . Similar sub-scripts are also used with the terms Min,  $n$  and Max.

On multiple range instruments, each range is treated as if it were an instrument with one range.

For special applications that are clearly marked on the instrument, an instrument may have weighing ranges in classes I and II, or in classes II and III. The instrument as a whole shall then comply with the more severe requirements of 3.9 Variations due to influence quantities and time applicable to either of the two classes (see OIML R76-1 International Recommendation document)

As  $e = d = 0.001 \text{ g}$  and  $\text{Max} = 54 \text{ g}$ , then  $n = 54\text{g}/0.001\text{g} = 54.000$

Maximum capacity / g	54
Minimum capacity / g	0.5
Verification scale interval ( $e$ ) / g	0.001
Minimum capacity ( $N^* e$ )	500
$n$	54000
Accuracy class	I

Then, moisture analyser Mettler Toledo model HB43-S is an accuracy class I.

PP corrected information in MR accordingly. Ref: "HB43-S tolerance.pdf", "NIST HB44 2014.pdf", "OMCL\_Qualification of balance.pdf", "DpOIML76 HB43-S.xlsx", "Monrep NAF1 CP2 MP1 141008.docx",

#### Documentation Provided as Evidence by Project Participant:

TA-PTE-FO-024 Integradores 2012 ver3.xlsx  
TA-PTE-FO-021 Resumen vapores 2012 ver3.xlsx  
NAF1 monit CP2 MP1 140929 ver3.xlsx  
TA05-PTE-FO-018 Consumos combustibles fósiles 2012 ver3.xlsx  
HB43-S tolerance.pdf  
NIST HB44 2014.pdf  
OMCL\_Qualification of balance.pdf  
DpOIML76 HB43-S.xlsx  
Monrep NAF1 CP2 MP1 141008.docx"

#### Information Verified by Lead Assessor:

TA-PTE-FO-024 Integradores 2012 ver3.xlsx (ref. 8.10.1.c)  
TA-PTE-FO-021 Resumen vapores 2012 ver3.xlsx (ref. 8.10.2.c)  
NAF1 monit CP2 MP1 140929 ver3.xlsx (ref 5c)  
TA05-PTE-FO-018 Consumos combustibles fósiles 2012 ver3.xlsx (8.7.1.c)  
HB43-S tolerance.pdf (ref. 9.45)  
NIST HB44 2014.pdf (ref. 9.46)  
OMCL\_Qualification of balance.pdf (ref. 9.47)  
DpOIML76 HB43-S.xlsx (ref. 9.48)  
Monrep NAF1 CP2 MP1 141008.docx (ref. 4c)

**Reasoning for not Acceptance or Acceptance and Close Out:**

Tag	Name	Error Found vs Accuracy	assessment
<b>463-FT-0402</b>	Steam flow meter 85 bar ABB S/N 6403015454	Error found in calibration (ref. 10.6.2): 0.193%; 0.49%; 0.5%; 0.478%; 0.125% Accuracy: +/- 0.075%	It was found that that the PP applied a correction in the Excel file (ref. 8.10.1.c) that contains the daily steam records. The correction was done from 07/06_2012 until 09/07/2012. Later it was verified that the sum of the daily values was transcribed into "integradores" (ref. 8.10.2.c). The correction was done in a conservative way because the higher error (0.5%) between the found in the calibration and the accuracy was applied.. <b>Item closed.</b>
<b>463-PT-0403</b>	Pressure transmitter 85 bar s/n 6403015460	Error found in calibration (ref. 10.8.2): 0.213% ; 0.3% ; 0.3% ; 0.225% ; 0.1% Accuracy: +/- 0.075%	It was found that that the PP applied a correction in the in the value of the pressure used to determine the steam enthalpy (ref. 5c). The correction applied was done in a conservative way, it was verified that for each of the related equipments the higher error (0.3% and 1.731% respectively) between the ones found at the calibration and the accuracy was applied. <b>Item closed.</b>
<b>465-PIT-9000-A</b>	Pressure transmitter 19 bar ABB S/N 6404008677	Error found in calibration (ref. 10.15.2): 0.038%; 0.231%; 0.269%; 0.231%; 0.269% Accuracy: +/- 0.075%	It was found that that the PP applied a correction in the in the value of the pressure used to determine the steam enthalpy (ref. 5c). The correction applied was done in a conservative way, it was verified that for each of the related equipments the higher error (0.075%) between the ones found at the calibration and the accuracy was applied. <b>Item closed.</b>
<b>465-PIT-9000-B</b>	Pressure transmitter 19 bar (main line) ABB S/N 6404008676	Error found in calibration (ref. 10.16.2): 0.231%; 0.077%; 0.115%; 1.731%; 0.115% Accuracy: +/- 0.075%	
<b>465-PIT-9001-A</b>	Pressure transmitter 11.5 bar (main line) ABB S/N 6404008680	Error found in calibration (ref. 10.17.2): 0.032%; -0.032%; 0.036%; 0.036%; 0.036% Accuracy: +/- 0.075%	It was found that that the PP applied a correction in the in the value of the pressure used to determine the steam enthalpy (ref. 5c). The correction applied was done in a conservative way, it was verified that for each of the related equipments the higher error (0.075%) between the ones found at the calibration and the accuracy was applied. <b>Item closed.</b>
<b>465-PIT-9001-B</b>	Pressure transmitter 11.5 bar (main line) S/N 6404008679	Error found in calibration (ref. 10.18.2): 0.053%; 0.04%; 0.007%; 0.033%; 0.033%. Accuracy: +/- 0.075%	It was found that the correction done in file ref. 8.7.1.c (June and July 2012) applies an error equal to 0.295%, which is the equivalent error (in liters) of the maximum error found. <b>Item closed.</b>
<b>461-LT-0460</b>	Level transmitter 264HCHRBEFSSA1	Error found in calibration (ref. 10.3.2): 0.31%; 0.31%; 0.44%; 0.12 % Accuracy: +/- 0.075%	

5. It was verified that the new moisture analyzer (Mettler Toledo Class II) has the same accuracy class and permissible error than the previous one (Sartorius). Based on the technical sheet (ref 9.45) obtained from the provider, it was verified that accuracy class of the moisture analyzer HS-43 (Mettler Toledo) is class I, which is equivalent to +/- 0.001 gr, which is the value committed in the registered PDD. Additionally it was reviewed the complementary information supplied by the PP (ref 9.46, 9.47, 9.48), it was verified that accuracy classification of the moisture analyzer is consistent with the international regulations. **Item closed.**

**CAR 5 closed on 15/10/2014, and re-opened on 27/11/2014**

6. Please clarify how the "Moisture analyzer" (Mettler Toledo, S/N B235365966) for the period 07/12/2012 – 31/12/2013 is in compliance with the calibration frequency defined.

**CAR 5 remains open**
**Acceptance and Close out by Lead Assessor:**
**Date:** 15/10/2014, 27/11/2014

**Project Participant Response:**
**Date:** 02/12/2014

There was a gap from 07/12/2012 to 31/12/2013. PP applied a correction to moisture contain for December 2013, according the declared accuracy of the instrument (+/-0.001 g.) and corrected properly in MR and ER spreadsheet. Ref: "Monrep NAF1 CP2 MP1 141202 ver5.docx", "NAF1 monit CP2 MP1 141202 ver5.xlsx".

**Documentation Provided as Evidence by Project Participant:**

Monrep NAF1 CP2 MP1 141202 ver5.docx

NAF1 monit CP2 MP1 141202 ver5.xlsx

<b>Information Verified by Lead Assessor:</b>	
Monrep NAF1 CP2 MP1 141202 ver5.docx (ref. 4e) NAF1 monit CP2 MP1 141202 ver5.xlsx (ref. 5e)	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
The PP acknowledged there is a delay in the calibration of the moisture analyzer for the period 07/12/2013 and 31/12/2013. As per VVS version 7 para 283, the PP corrected the measured values applying the maximum permissible error, which is lower than error found at the calibration (ref. 10.30.c). It was verified that the error was applied in a conservative way in the ER spreadsheet calculation version 5 (ref. 5e), tab "2013 Data", cells Q51:Q5, thus the values of the whole month (December 2013) were corrected. The error is applied in order to reflect the error in the measurement of the wet and dry biomass. Due to this correction there was a decrease of 1 ER in the verified period, in comparison with the previous version of the ER spreadsheet (ref 4e).	
<b>CAR 5 was closed on 03/12/2014, re-opened on 23/12/2014</b>	
As it was previously discussed in item 1, the equipments 463-FT-0402, 463-PT-0403, 465-PIT-9000-A, 465-PIT-9000-B, 465-PIT-9001-A, 465-PIT-9001-B had a delayed calibration thus the monitored data was properly corrected, however it is not informed in the MR that the correction was done.	
<b>CAR 5 item remains open.</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 03/12/2014, 23/12/2014
<b>Project Participant Response:</b>	<b>Date:</b> 24/12/2014
PP includes a note in table D.2 parameter HC <sub>BL,y</sub> , "Additional comments" including equipment, dates between calibration was affected and correction criteria. Ref: "Monrep NAF1 CP2 MP1 141224 ver7.docx"	
<b>Documentation Provided as Evidence by Project Participant:</b>	
Monrep NAF1 CP2 MP1 141224 ver7.docx	
<b>Information Verified by Lead Assessor:</b>	
Monrep NAF1 CP2 MP1 141224 ver7.docx (ref. 4g)	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
It was verified that MR version 7 (ref 4g), section D2, parameter HC <sub>BL</sub> , part "additional comments" reports properly the equipments with delayed calibration and define the correction done.	
<b>CAR 5 was closed on 26/12/2014, reopened on 11/04/2015</b>	
In MR, page 49, please check the period of delayed calibration of the meter "Mettler Toledo HB43-S. Item 6 re-opened.	
<b>CAR 5 remains open.</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 11/04/2015
<b>Project Participant Response:</b>	<b>Date:</b> 13/04/2015
PP corrected in a new version of MR. Ref: "Monrep NAF1 CP2 MP1 150413 ver9.docx"	
<b>Documentation Provided as Evidence by Project Participant:</b>	
Monrep NAF1 CP2 MP1 150413 ver9.docx	
<b>Information Verified by Lead Assessor:</b>	
Monrep NAF1 CP2 MP1 150413 ver9.docx (ref. 4i)	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
It was verified that MR version 9 (ref. 4i), reports correctly the period of time while the analyzer "Mettler Toledo HB43-S" operated with the calibration delayed. As it was verified previously the cited analyzer was calibrated on 07/12/2012 (ref. 10.30b) and later on 31/12/2013 (ref. 10.30c), considering that it has to be calibrated annually it operated without calibration from 07/12/2013 until 31/12/2013, that corresponds to the period already verified and now properly reported in MR (ref. 4i). Item closed.	
<b>CAR 5 was closed</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 13/04/2015



Date:	20/06/2014	Raised by:	Alicia Fernández		
Type:	CL	Number:	6	Reference:	AU4 section 3 – parameter 1 to 6
<b>Lead Assessor Comment:</b>				<b>Date:</b> 20/06/2014 & 27/06/2014	
BR <sub>k</sub> (Biomass used per type) and operation records 1. During the site visit a crosscheck was done, some differences were found for biomass type 1. Please revise the figures and provide the full supporting evidence related with the BR <sub>k</sub> . 2. Please provide the topographic measurements or other supporting evidence to demonstrate that the biomass is not stored for more than 1 year. 3. Please provide the forms filled onsite to record the biomass consumption from the DCS (hourly records on days 1, 5, 10 & 15 of January, June and December). 4. Please provide as sample of 4 days per month (1, 5, 10 & 15) of the records of the operational control of the power plant which is later transferred into "Integradores".					
<b>CL 6 was raised.</b>					
<b>Project Participant Response:</b>				<b>Date:</b> 20/08/2014	
1.- PP corrected accordingly the supports documents provided to the assessment team. Ref: "NAF1 monit CP2 MP1 140820 ver2.xlsx", "Resumen dhm Nueva Aldea 2012 140813 ver2.xlsx", "Resumen dhm Nueva Aldea 2013 140813 ver2.xlsx", folder Control Recepción Lodos. 2.- PP provided the corresponding monthly topographic measurements as is required. Please note that the topographic measurements were not executed during months January, February and March 2012 due to repairing works in biomass storage area needed after fire (see section B.2.1 of MR). Ref: Folder Topographic Reports. 3.- PP clarified that the forms filled onsite to record the biomass consumption from the DCS has a data frequency per shift and not per hour. PP provided the required supports. Ref: Folder Planilla Integradores 2012, Folder Planilla Integradores 2013. 4.- PP provided the corresponding supports. Ref: "1 <sup>st</sup> semester 2012.pdf", "2 <sup>nd</sup> semester 2012.pdf", "1 <sup>st</sup> semester 2013.pdf", "2 <sup>nd</sup> semester 2013.pdf".					
<b>Documentation Provided as Evidence by Project Participant:</b>					
NAF1 monit CP2 MP1 140820 ver2.xlsx Resumen dhm Nueva Aldea 2012 140813 ver2.xlsx Resumen dhm Nueva Aldea 2013 140813 ver2.xlsx Folder Control Recepción Lodos Folder Topographic Reports Folder Planilla Integradores 2012 Folder Planilla Integradores 2013. 1 <sup>st</sup> semester 2012.pdf 2 <sup>nd</sup> semester 2012.pdf 1 <sup>st</sup> semester 2013.pdf 2 <sup>nd</sup> semester 2013.pdf					
<b>Information Verified by Lead Assessor:</b>					
NAF1 monit CP2 MP1 140820 ver2.xlsx (ref.5b) Resumen dhm Nueva Aldea 2012 140813 ver2.xlsx (ref. 8.5.7b) Resumen dhm Nueva Aldea 2013 140813 ver2.xlsx (ref. 8.5.8b) Folder Control Recepción Lodos (ref. 8.5.3.b & 8.5.4.b) Folder Topographic Reports (ref. 8.5.9) Folder Planilla Integradores 2012 (ref. 8.5.11) Folder Planilla Integradores 2013 (ref. 8.5.12) 1 <sup>st</sup> semester 2012.pdf (ref. contained in ref. 8.5.10) 2 <sup>nd</sup> semester 2012.pdf (ref., contained in ref. 8.5.10) 1 <sup>st</sup> semester 2013.pdf (ref. contained in ref. 8.5.10) 2 <sup>nd</sup> semester 2013.pdf (ref. contained in ref. 8.5.10)					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>					

<p>1. The amount of biomass reported in the updated ER excel file (ref. 5b) was crosschecked against the data recorded in the files "Resumen dhm Nueva Aldea 2012 140813 ver2.xlsx" (ref. 8.5.7b) and "Resumen dhm Nueva Aldea 2013 140813 ver2.xlsx" (ref. 8.5.8b), the data was found correct for year 2013, however differences were found in year 2012 for the "mix of biomass from on-site industrial operation" for January and August to December. <b>Item remains open.</b></p> <p>2. The PP provided the monthly topographic measurements carried out from December 2011 until December 2013 (ref 8.5.9), the cited measurements are done and reported by a third independent party Serviad (ref. 8.5.8). The measurements reports the volume of biomass stored in the plant, it was verified that the summary spreadsheets (ref.8.5.7.b &amp; 8.5.8.b) are consistent with the monthly information in the reports (ref. 8.5.9). About the storage time of the biomass, according to the biomass volumetric balance, the biomass consumed is equivalent to the biomass stock; since there is no accumulation, it is not possible that the biomass is stored for more than one year. <b>Item closed.</b></p> <p>3. The data recorded in supporting files "Resumen dhm Nueva Aldea 2012 140813 ver2.xlsx" (ref. 8.5.7.b) and "Resumen dhm Nueva Aldea 2013 140813 ver2.xlsx" (ref. 8.5.8.b) was crosschecked against data recorded in "Folder Planilla Integradores 2012" (ref 8.11) and "Folder Planilla Integradores 2013" (ref 8.12). The following records were found inconsistent: meter tag "431 FIQ 502" November 2012, and meter tag "531WI5518A" January 2013, May 2013 and October 2013. Please revise. <b>Item remains open.</b></p> <p>4. The information recorded operational control records (ref. 8.5.10.1-8.5.10.4) was crosschecked against information recorded in files named "0x Integradores Month 201X.xls" (ref 8.5.11 &amp; 8.5.12), it corresponded to an additional review done by the assessment team (not required by the monitoring plan) and the data was found consistent. <b>Item closed.</b></p> <p><b>CL 6 remains open.</b></p>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 04/09/2014
<b>Project Participant Response:</b>	<b>Date:</b> 29/09/2014
<p>1.- Please, refer to section B.2.1 Temporary deviations. The item "mix of biomass from on-site industrial operation" it is not comparable to "industrial interna" (column Q, rows 5 to 16, sheet "Resumen DHM"), because all the internal sawdust was subtracted from the total of internal biomass (it must to be considered that "Resumen dhm Nueva Aldea 2012 140812 ver2.xlsx" presented estimated values for sawdust to support the internal sale of this material). To cross check this parameter it has to be used column F, rows 5 to 16, sheet "Resumen DHM" that contains the quantity of internal bark. No corrections were necessary.</p> <p>3.- PP corrected according the following review:</p> <p>- Months of November 2012, May 2013 and October 2013, was detected a mistake in the reported biomass. PP corrected according the information in "11 Integradores Nov 2012.xlsx", "05 Integradores May 2013.xlsx" and "10 Integradores Oct 2013.xlsx". A new version of ER spreadsheet calculation was presented to the assessment team. Ref: "NAF1 monit CP2 MP1 140929 ver3.xlsx".</p> <p>- For January 2013, value reported for total of biomass measured by meter tag 531WI5518A was wrong. PP corrected file "01 Integradores Ene 2013.xlsx" (now in version 2). No correction was necessary.</p>	
<b>Documentation Provided as Evidence by Project Participant:</b>	
NAF1 monit CP2 MP1 140929 ver3.xlsx	
<b>Information Verified by Lead Assessor:</b>	
NAF1 monit CP2 MP1 140929 ver3.xlsx (ref 5c)	
Monrep NAF1 CP2 MP1 141008.docx (ref. 4c), the file was received from the PP but it was not listed by PP in the section above.	
"01 Integradores Ene 2013.xlsx" (8.5.12.b), the file was received from the PP but it was not listed by PP in the section above.	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
<p>1. It was verified that the differences found are due to the deviation applied, where the sawdust was deducted from calculations following a conservative approach. <b>Item closed.</b></p> <p>2. The ER spreadsheet version 3 (ref 5c) was reviewed against "Folder Planilla Integradores 2013" (ref 8.12). and the updated "01 Integradores Ene 2013.xlsx" (ref. 8.5.12.b), it was found that January, May and October 2013 remains with error. Please revise. <b>Item remains open.</b></p> <p><b>CL 6 remains open.</b></p>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 15/10/2014
<b>Project Participant Response:</b>	<b>Date:</b> 16/10/2014



PP corrected ER spreadsheet according supports "Folder Planilla Integradores 2013" months: January, May and October. A new version of the ER spreadsheet is provided to assessment team. Ref: "NAF1 monit CP2 MP1 141016 ver4.xlsx"	
<b>Documentation Provided as Evidence by Project Participant:</b>	
NAF1 monit CP2 MP1 141016 ver4.xlsx	
<b>Information Verified by Lead Assessor:</b>	
NAF1 monit CP2 MP1 141016 ver4.xlsx (ref 5d) Folder Planilla Integradores 2013 (ref. 8.5.12), the file was received from the PP but it was not listed by PP in the section above.	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
The ER excel file version 4 (ref 5d) was reviewed, it was verified that the amount of biomass reported in the ER excel file (ref 5d) is correct against data recorded "Folder Planilla Integradores 2013" (ref 8.12). and the updated "01 Integradores Ene 2013.xlsx" (ref. 8.5.12.b). <b>Item closed.</b>	
<b>CL 6 closed on 17/10/2014, re-opened on 23/12/2014</b>	
Please revise the sum (total biomass) reported in MR, section D.1. parameter "Biomass residues categories and quantities used in the project activity".	
<b>CL 6 remains open.</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 17/10/2014, 23/12/2014
<b>Project Participant Response:</b>	<b>Date:</b> 24/12/2014
As PP explain in CAR 1, PP confirms that all figures are consistent in MR. section E, page 53, explain that calculation criteria, considered as conservative and accurate, uses all decimal permitted by excel program and truncate and round down only the final calculation of requested CERs. Section E cited: 1.- Differences in baseline and project emission calculations included in tables in section E of MR are due to the fact that all calculations are done directly in excel spreadsheets with full decimals (no rounding), this implies a decimal precision that is not carried onto word formatted tables because decimals are shown truncated and rounded down. Exact values can be viewed directly in emission reduction calculation spreadsheet. 2.- In emission reduction calculation spreadsheet, sheet "Summary" the final result of emission reduction (cells C45 and C46) are truncated and rounded down to be conservative with the quantity of requested CERs. 3. Since the emission reduction calculation for the project activity was done monthly, in some cases year-averages were employed the calculations presented below (section E of the MR). Nevertheless, and due to this CL, PP revised the consistency between the tables in MR and ER spreadsheet. When some difference due to no rounding criteria applied in calculations is identified, PP includes a note to indicate when numbers are truncated and/or rounded down. Considering this, PP confirms the result of the total biomass for parameter "Biomass residues categories and quantities used in the project activity", section D.1. Ref: "Monrep NAF1 CP2 MP1 141224 ver7.docx".	
<b>Documentation Provided as Evidence by Project Participant:</b>	
Monrep NAF1 CP2 MP1 141224 ver7.docx	
<b>Information Verified by Lead Assessor:</b>	
Monrep NAF1 CP2 MP1 141224 ver7.docx (ref. 4g)	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
MR version 7 was reviewed, it was verified that information is consistent with the ER spreadsheet, and that differences that appear in some cases are because the ER calculation file considers all the decimals figures, while the values put in the word are rounded. This explanation is in the MR.	
<b>CL 6 was closed.</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 26/12/2014

Date:	20/06/2014		Raised by:	Alicia Fernández		
Type:	CL	Number:	7		Reference:	AU4 section 3 – parameter 7
Lead Assessor Comment:				Date: 20/06/2014 & 27/06/2014		
<b>Biomass transported</b> ( $FR_{f,m}$ )  1. During the review of the parameter Total mass of freight transported in freight transportation activity $f$ in monitoring period $m$ ( $FR_{f,m}$ ) it was found that the values for $FR_{f,m}$ per month reported in the ERs spreadsheet (ref. 5a.) are not consistent with the document “Project emissions road transportation freight.xlsx” (ref. 8.2). Please clarify. 2. Please provide dispatch orders/control tickets per truck (5 samples per month). 3. During the site visit the steps to obtain the project emissions by the biomass transport were reviewed, the PP is asked to clarify how is included all the freight related with off-site biomass transport as per the requirements of Monitoring Plan, ACM0006 version 12.1.1. and the Tool “Project and leakage emissions from transportation of freight”.						
<b>CL 7 was raised.</b>						
Project Participant Response:				Date: 20/08/2014		
1. PP clarified that there data of Mix of sawdust and bark from forest operations were improperly reported when the data was copy to ER calculation spreadsheet. PP corrected accordingly and provided to the assessment team the corresponding support documents. Ref: “NAF1 monit CP2 MP1 140820 ver2.xlsx”, “DHM romana 2012 140813 ver3.xlsx”, “DHM romana 2013 140813 ver1.xlsx”, “Resumen dhm Nueva Aldea 2012 140813 ver2.xlsx”, “Resumen dhm Nueva Aldea 2013 140813 ver2.xlsx”, “Medición humedad 2012 140221 ver2.xlsx”, “Medición humedad 2013 140221 ver2.xlsx”. 2. PP provided the required supports. Ref: Folders Dispatch orders 2012, Dispatch orders 2013. 3. PP corrected and included the biomass type 1 in calculation of the project emissions road transportation freight. Ref: “Project emissions road transportation freight ver2.xlsx”, “Distancia lodos.jpg”.						
<b>Documentation Provided as Evidence by Project Participant:</b>						
NAF1 monit CP2 MP1 140820 ver2.xlsx DHM romana 2012 140813 ver3.xlsx DHM romana 2013 140813 ver2 Resumen dhm Nueva Aldea 2012 140813 ver2.xlsx Resumen dhm Nueva Aldea 2013 140813 ver2.xlsx Medición humedad 2012 140221 ver2.xlsx Medición humedad 2013 140221 ver2.xlsx Folder Dispatch orders 2012 Folder Dispatch orders 2013 Project emissions road transportation freight ver2.xlsx Distancia lodos.jpg						
<b>Information Verified by Lead Assessor:</b>						
NAF1 monit CP2 MP1 140820 ver2.xlsx (ref 5b) DHM romana 2012 140813 ver3.xlsx (ref. 8.6.2) DHM romana 2013 140813 ver2.xlsx (ref. 8.6.3) Resumen dhm Nueva Aldea 2012 140813 ver2.xlsx (ref. 8.5.7b) Resumen dhm Nueva Aldea 2013 140813 ver2.xlsx (ref. 8.5.8b) Medición humedad 2012 140221 ver2.xlsx (ref. 8.1.3b) Medición humedad 2013 140221 ver2.xlsx (ref. 8.1.4.b) Folder Dispatch orders 2012 (ref. 8.13) Folder Dispatch orders 2013 (ref. 8.14) Project emissions road transportation freight ver2.xlsx (ref. 8.2.b) Distancia lodos.jpg (ref. 8.6.4)						

<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
1. The PP provided the updated file (ref. 8.2b) where $FR_{f,m}$ is calculated, it was verified that it includes all the biomass transported, however the information reported in the cited file and the updated ER excel file (ref 5b) is not consistent. Please revise the MR accordingly. <b>Item remains open.</b>	
2. The data of biomass per truck, biomass source, biomass type (linked to each truck) reported in files "DHM romana 2012 140813 ver3.xlsx" (ref. 8.6.3) and "DHM romana 2013 140813 ver2.xlsx" (ref. 8.6.3) was reviewed against the control/dispatch tickets (ref. 8.13 & 8.14) no mistakes were found. <b>Item closed.</b>	
3. It was verified that PP completed the set of data related with the mass of biomass transported and the distance for all the of site biomass. The file "Project emissions road transportation freight ver2.xlsx" (ref 8.2b) contains the mass of all the biomass transported per origin including sludge, that was not considered previously. <b>Item closed.</b>	
<b>CL 7 remains open</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 03/09/2014
<b>Project Participant Response:</b>	<b>Date:</b> 23/09/2014
1.- PP corrected ER spreadsheet to specify the quantity of sludge and combustible biomass transported to power plant. A mistake was found in the quantity of sludge for 2013. File Project emissions road transportation freight was corrected to a new version. Ref: "Project emissions road transportation freight ver3.xlsx", "NAF1 monit CP2 MP1 140929 ver3.xlsx".	
<b>Documentation Provided as Evidence by Project Participant:</b>	
Project emissions road transportation freight ver3.xlsx NAF1 monit CP2 MP1 140929 ver3.xlsx	
<b>Information Verified by Lead Assessor:</b>	
Project emissions road transportation freight ver3.xlsx (ref 8.2.c) NAF1 monit CP2 MP1 140929 ver3.xlsx (ref. 5c)	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
The updated ER excel file (ref 5c) was reviewed, still some errors were found for January, May and October 2013 (combustible biomass). This error is linked with the mistake found and remained in CL 6. Please revise. <b>Item remains open.</b>	
<b>CL 7 remains open</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 15/10/2014
<b>Project Participant Response:</b>	<b>Date:</b> 16/10/2014
According corrections applied in CL 06, PP corrected ER spreadsheet. Ref: "NAF1 monit CP2 MP1 141016 ver4.xlsx".	
<b>Documentation Provided as Evidence by Project Participant:</b>	
NAF1 monit CP2 MP1 141016 ver4.xlsx	
<b>Information Verified by Lead Assessor:</b>	
NAF1 monit CP2 MP1 141016 ver4.xlsx (ref 5d) Resumen dhm Nueva Aldea 2012 140813 ver2.xlsx (ref. 8.5.7b), the file was received from the PP but it was not listed by PP in the section above Resumen dhm Nueva Aldea 2013 140813 ver2.xlsx (ref. 8.5.8b), the file was received from the PP but it was not listed by PP in the section above	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
It was verified that ER excel file version 4 (ref 5d) reports correctly the parameter $FR_{f,m}$ , it is correct against the records available at "Resumen dhm Nueva Aldea 2012 140813 ver2.xlsx" (ref. 8.5.7b) and "Resumen dhm Nueva Aldea 2013 140813 ver2.xlsx" (ref. 8.5.8b). <b>Item closed.</b>	
<b>CL 7 closed</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 17/10/2014

Date:	20/06/2014		Raised by:	Alicia Fernández		
Type:	CL	Number:	8		Reference:	AU4 section 3 – parameter 9
Lead Assessor Comment:				Date: 20/06/2014		
<b>EF<sub>CO<sub>2</sub>,i,y</sub> (fossil fuels)</b> As per the registered PDD (ref 1) the parameter EF <sub>CO<sub>2</sub>,i,y</sub> (Weight average CO <sub>2</sub> emission factor of fuel type i in year y) will be obtained following option d) “IPCC default value at the upper limit of the uncertainty at a 95% confidence interval as provided in table 1.4 of Chapter 1 of Vol.2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories” of the “Tool to calculate project or leakage CO <sub>2</sub> emissions from fossil fuel combustion” version 02. Later this parameter will be used as per option B of the Tool in order to calculate the COEF <sub>i,y</sub> .  According to the ERs spreadsheet (ref. 5a) tabs “2012 Emissions” and “2013 Emissions”, lines 66 – 99, it was found that the mentioned option B was not followed, please clarify.  <b>CL 8 was raised.</b>						
Project Participant Response:				Date: 20/08/2014		
PP corrected calculation according the registered PDD. Ref: “NAF1 monit CP2 MP1 140820 ver2.xlsx”						
<b>Documentation Provided as Evidence by Project Participant:</b>						
NAF1 monit CP2 MP1 140820 ver2.xlsx						
<b>Information Verified by Lead Assessor:</b>						
NAF1 monit CP2 MP1 140820 ver2.xlsx (ref 5b)						
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>						
The updated ER excel file (ref. 5b) was reviewed, it was verified that PP corrected the calculation to obtain COEF <sub>i,y</sub> according with the “Tool to calculate project or leakage CO <sub>2</sub> emissions from fossil fuel combustion” version 02”. It was verified as well that EF <sub>CO<sub>2</sub>,i,y</sub> of the reported fuels (diesel, fuel oil and LPG) are correct against IPCC 2006, <i>table 1.4 of Chapter 1 of Vol.2 (Energy)</i> .  <b>CL 8 closed was closed on 27/08/2014, re-opened on 27/11/2014</b>  Please revise the EFco2, informed in MR section D.2. for Fuel Oil and LPG.  <b>CL 8 remains open.</b>						
Acceptance and Close out by Lead Assessor:				Date: 27/08/2014, 27/11/2014		
Project Participant Response:				Date: 02/12/2014		
PP corrected according information in PDD. Ref: “Monrep NAF1 CP2 MP1 141202 ver5.docx”.						
<b>Documentation Provided as Evidence by Project Participant:</b>						
Monrep NAF1 CP2 MP1 141202 ver5.docx						
<b>Information Verified by Lead Assessor:</b>						
Monrep NAF1 CP2 MP1 141202 ver5.docx (ref 4e)						
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>						
It was verified that the PP corrected in MR section D.2. the EF <sub>co2</sub> informed for Fuel Oil and LPG, it is worth to mention that this was a typo and values were correct in the ER spread sheet.  <b>CL 8 was closed.</b>						
Acceptance and Close out by Lead Assessor:				Date: 03/12/2014		

Date:	20/06/2014		Raised by:	Alicia Fernández	
Type:	CL	Number:	9	Reference:	AU4 section 3 – parameter 10, 11, 12
<b>Lead Assessor Comment:</b>			<b>Date:</b> 20/06/2014 & 27/06/2014		
<b>FC (fossil fuel consumption)</b> 1. Please provide the supporting evidence of the parameters: <ul style="list-style-type: none"> <li>- <math>FC_{i, \text{Project Plant}, y}</math></li> <li>- <math>FC_{i, \text{Project Site}, y}</math></li> <li>- <math>FC_{i, \text{Biomass Processing}, y}</math> (for fuel consumption obtained from subcontractors, please provide the supporting evidence for 2012 and 2013 of the following months: June, August, October, November).</li> </ul> 2. During the site visit a crosscheck (random) of the parameter $FC_{\text{project, plant}}$ site was done, it was found that data corresponding to January 2012 reported in the ER excel file (ref 5a) was not consistent with the supporting evidence. Please revise and correct.					
<b>CL 9 was raised.</b>					
<b>Project Participant Response:</b>			<b>Date:</b> 20/08/2014		
1. PP provided the support documents to assessment team: <ul style="list-style-type: none"> <li>- <math>FC_{i, \text{Project Plant}, y}</math>: Ref: Folder FCi Project plant,y</li> <li>- <math>FC_{i, \text{Project Site}, y}</math>: Ref: Folder FCi Project site,y</li> <li>- <math>FC_{i, \text{Biomass Processing}, y}</math>: Ref: Folder FCi Biomass processing,y</li> </ul> 2. PP revised and corrected accordingly the supports documents presented. Ref: "NAF1 monit CP2 MP1 140820 ver2.xlsx".					
<b>Documentation Provided as Evidence by Project Participant:</b>					
Folder FCi Project plant,y Folder FCi Project site,y Folder FCi Biomass processing,y NAF1 monit CP2 MP1 140820 ver2.xlsx					
<b>Information Verified by Lead Assessor:</b>					
Folder FCi Project plant,y (ref. 8.16) Folder FCi Project site,y(ref. 8.8.2b – Ref. 8.8.3b) RESPALDO CONSUMOS 2013 PASA.xls (ref. 8.8.6b), the file was received from the PP but it was not listed by PP in the section above RESPALDO CONSUMOS ISOLA 2012.xls (ref. 8.8.7), the file was received from the PP but it was not listed by PP in the section above Folder FCi Biomass processing,y (ref. 8.15.1- 8.15.2 – 8.15.3) NAF1 monit CP2 MP1 140820 ver2.xlsx (ref 5b)					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>					
1. It was verified that the diesel consumption corresponding to the parameter " $FC_{i, \text{Biomass Processing}}$ " is correct against the information from the external provider who is in charge of processing the biomass from forest operation. Similarly it was verified the diesel consumption corresponding to " $FC_{i, \text{Project Site}}$ " against the records of the machinery (trucks, bulldozers and front loaders) (ref. 8.8.2b), the information was found correct except for the records corresponding to December 2012. <b>Item remains open.</b> 2. The fossil fuel consumption in the power plant reported in the updated ER excel file (ref. 5b) was reviewed against the "TA05-PTE-FO-018 Consumo combustibles fósiles 2012 ver2.xls" (8.7.1.b.) and the inventory records (ref. 8.7.4). The information was found correct for diesel and gas consumption. <b>Item closed.</b> <b>CL 9 remains open.</b>					
<b>Acceptance and Close out by Lead Assessor:</b>			<b>Date:</b> 02/09/2014		
<b>Project Participant Response:</b>			<b>Date:</b> 29/09/2014		
1.- PP corrected ER spreadsheet according the presented support. Ref: "NAF1 monit CP2 MP1 140929 ver3.xlsx"					
<b>Documentation Provided as Evidence by Project Participant:</b>					
NAF1 monit CP2 MP1 140929 ver3.xlsx					

<b>Information Verified by Lead Assessor:</b>	
NAF1 monit CP2 MP1 140929 ver3.xlsx (ref. 5c)	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
It was verified that the ER spreadsheet (ref 5c) was correctly updated and the data is consistent with the supporting evidence (ref. 8.8.2b). Item closed.	
<b>CL 9 closed on 15/10/2014, reopened on 27/11/2014</b>	
Please revise the parameter $FF_{i,project\ plant}$ , confirm if Fuel Oil was consumed and clarify how it was measured (in case of consumption).	
<b>CL 9 remains open.</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date: 15/10/2014, 27/11/2014</b>
<b>Project Participant Response:</b>	<b>Date: 02/12/2014</b>
PP declared that the fuel oil consumption in version 4 of the MR was a typo mistake. Even though in the conceptual studies and preliminary design of the Power plant it was considered Fuel oil as combustible, the necessary equipment to burn it was not have installed. Then, is impossible for Power plant burned Fuel Oil. PP corrected properly in MR. Ref: "Monrep NAF1 CP2 MP1 141202 ver5.docx"	
<b>Documentation Provided as Evidence by Project Participant:</b>	
Monrep NAF1 CP2 MP1 141202 ver5.docx	
<b>Information Verified by Lead Assessor:</b>	
Monrep NAF1 CP2 MP1 141202 ver5.docx (ref. 4e)	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
It was verified that MR version 5 (ref 4e) corrected the information about Fuel Oil consumption, it is zero for this period. During the site visit conducted, it was verified that there is not any tank for fuel oil to feed the boiler, thus there is no consumption fuel oil consumption.	
<b>CL 9 was closed.</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date: 02/12/2014</b>



Date:	20/06/2014	Raised by:	Alicia Fernández		
Type:	CL	Number:	10	Reference:	AU4 section 3 – parameter 14
<b>Lead Assessor Comment:</b>				<b>Date:</b> 20/06/2014	
<p><b>EF<sub>CH4, BR</sub> (CH4 emission factor for the combustion of biomass residues)</b></p> <p>Based on the PDD (ref. 1) review, the parameter, EF<sub>CH4, BR</sub>, “<i>will be determined by taking samples from the power boiler flue gases and performing a gas stack analysis using calibrated analyser in a specialized laboratory</i>”. The sampling will be “<i>at least quarterly, taking at least three samples per measurement</i>.”</p> <p>Based on the ERs spreadsheet (ref. 5a) review, it was found that in the tabs “2012 Emissions” and “2013 Emissions”, only a “0” has been included. Please provide the support of the analysis performed, to confirm that this value is correct.</p> <p><b>CL 10 was raised.</b></p>					
<b>Project Participant Response:</b>				<b>Date:</b> 20/08/2014	
<p>PP clarified that the samples were collected using sampling equipment and training from the USDA Fire Sciences Laboratory, Missoula Montana, USA. The samples were collected from the exhaust stack through a sampling port to achieve a representative emissions sample. The samples were returned to the Missoula Fire Sciences Laboratory for chemical analysis using established methods. The PP and the Missoula Fire Sciences Laboratory maintain a contract for this service and the reports were sending by email. PP provided the support of the analysis performed, an email with the attached report as an example, and the copy of the corresponding service contract. Ref: “NA_03_30_12_EFs.pdf”, “NA_04_02_13_EFs.pdf”, “NA_06_28_12_EFs.pdf”, “NA_06_29_13_EFs.pdf”, “NA_09_28_12_EFs.pdf”, “NA_09_28_13_EFs.pdf”, “NA_12_28_12_EFs.pdf”, “NA_12_28_13_EFs.pdf”, “RV gas samples.msg”, “US FOREST SERVICE CONTRACT 2013 SIGNED.pdf”, “US FOREST SERVICE CONTRACT 2009 SIGNED.pdf”.</p>					
<b>Documentation Provided as Evidence by Project Participant:</b>					
NA_03_30_12_EFs.pdf NA_04_02_13_EFs.pdf NA_06_28_12_EFs.pdf NA_06_29_13_EFs.pdf NA_09_28_12_EFs.pdf NA_09_28_13_EFs.pdf NA_12_28_12_EFs.pdf NA_12_28_13_EFs.pdf RV gas samples.msg US FOREST SERVICE CONTRACT 2013 SIGNED.pdf US FOREST SERVICE CONTRACT 2009 SIGNED.pdf					
<b>Information Verified by Lead Assessor:</b>					
NA_03_30_12_EFs.pdf (ref. 8.11.1) NA_04_02_13_EFs.pdf (ref. 8.11.5) NA_06_28_12_EFs.pdf (ref. 8.11.2) NA_06_29_13_EFs.pdf (ref. 8.11.6) NA_09_28_12_EFs.pdf (ref. 8.11.3) NA_09_28_13_EFs.pdf (ref. 8.11.7) NA_12_28_12_EFs.pdf (ref. 8.11.4) NA_12_28_13_EFs.pdf (ref. 8.11.8) RV gas samples.msg (ref. 8.11.9) US FOREST SERVICE CONTRACT 2013 SIGNED.pdf (ref. 8.11.11) US FOREST SERVICE CONTRACT 2009 SIGNED.pdf (ref. 8.11.10)					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>					



<p>The PP provided the result of the test performed in 2012 and 2013, it was verified that the parameter was monitored according with the monitoring plan requirements.</p> <p><b>CL 10 closed on 27/08/2014 and re-opened.</b></p> <ul style="list-style-type: none"> <li>Please revise and correct the monitoring date of the last measurement conducted on 2013 for parameter EFch4.</li> </ul> <p><b>CL 10 remains open.</b></p>		
<b>Acceptance and Close out by Lead Assessor:</b>		<b>Date:</b> 27/08/2014 – 26/11/2014
<b>Project Participant Response:</b>		<b>Date:</b> 02/12/2014
PP corrected properly. Ref: "Monrep NAF1 CP2 MP1 141202 ver5.docx".		
<b>Documentation Provided as Evidence by Project Participant:</b>		
Monrep NAF1 CP2 MP1 141202 ver5.docx		
<b>Information Verified by Lead Assessor:</b>		
Monrep NAF1 CP2 MP1 141202 ver5.docx (ref. 4e)		
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>		
It was verified that MR version 5 (ref. 4e) reported correctly the date of the last EFch4 measurement (28/12/2013), it was crosschecked against the lab report (ref. 8.11.8)		
<b>CL 10 was closed on 03/12/2014, re-opened on 09/12/2014</b>		
PP is requested to report the value of the parameter exactly as they are reported by the laboratory results.		
<b>CL 10 remains open</b>		
<b>Acceptance and Close out by Lead Assessor:</b>		<b>Date:</b> 03/12/2014, 09/12/2014
<b>Project Participant Response:</b>		<b>Date:</b> 09/12/2014
<p>According to methodology ACM0006 version 12.1.1, for parameter EF<sub>CH<sub>4</sub>,BR</sub> it is specified in page 49: "To determine the CH<sub>4</sub> emission factor (EF<sub>CH<sub>4</sub>,BR</sub>), project participants may conduct measurements at the plant site or use IPCC default values, as provided in Table 4 below".</p> <p>The approved Monitoring plan indicates in page 112: "The CH<sub>4</sub> emission factor will be determined by taking samples from the power boiler flue gases and performing a stack gas analysis using calibrated analyser in a specialized laboratory." The adopted measurement frequency is that indicated in the methodology "At least quarterly, taking at least three samples per measurement".</p> <p>During 2006, the Project Participant requested a third party study to determine EF<sub>CH<sub>4</sub>,BR</sub>. The U.S. Forest Service Fire Sciences Laboratory at Rocky Mountain Research Station, Missoula, Montana, USA, developed the study and in "Methane Emissions from Sawdust/Bark Fired in Central Chile, 2006.pdf" page 6 concluded that: "The methane concentrations in the flue gases of power plants (0.55 ppm) were exceedingly low, even lower than clean air levels (~1.7 ppm to 2.2 ppm). Hence, the combustion process in power generation results in a net loss of methane from the combustion air used. The exhaust gas from the power plant is dominated by CO<sub>2</sub> of 10%-13 % (100,000 ppm to 130,000 ppm) with a trace amount of CO and methane. These measured CO<sub>2</sub> and CO concentrations are similar to those reported by Hao [1986] for CO<sub>2</sub> and CO emissions from power plants in Massachusetts, USA". Since it is not possible to consider a negative methane emission factor, the Project Participant believes that 0 (tCH<sub>4</sub>/GJ) is a conservative and therefore an appropriate estimate in this case. If a measurement results zero, and due to stack gas analysis is a very accurate procedure, it is not necessary carried out a new measurement.</p> <p>To comply with methodology and monitoring plan, the PP has signed a contract with the reputed and specialized USDA Forest Service Fire Sciences Laboratory to measure the CH<sub>4</sub> emission factor from the power boiler, according to the frequency defined by methodology. This parameter is measured for other Arauco facilities too. Then the parameter is compared with flue gases of power boilers with similar conditions. All the samples are taken from the power boiler stack according to procedure defined by the USDA Forest Service, and sent to Missoula, USA, for laboratory stack gas analysis. According to this, the measurements for the present monitoring period in the Nueva Aldea power plant were:</p>		
Date	Averaged emission factor for methane [metric tons CH <sub>4</sub> / GJ]	Standard deviation [t/ GJ]
30/03/2012	0.000000	0.000000
28/06/2012	0.000000	0.000000

	28/09/2012	0.000000	0.000000
	28/12/2012	0.000000	0.000000
	02/04/2013	0.000000	0.000000
	29/06/2013	0.000000	0.000000
	28/09/2013	0.000000	0.000000
	28/12/2013	0.000000	0.000000
PP corrected MR including all zeros in EF <sub>CH<sub>4</sub>,BR</sub> value reported. Ref: "Methane Emissions from Sawdust/Bark Fires in Central Chile, 2006.pdf", "Monrep NAF1 CP2 MP1 141209 ver06.docx".			
<b>Documentation Provided as Evidence by Project Participant:</b>			
Methane Emissions from Sawdust/Bark Fires in Central Chile, 2006.pdf US FOREST SERVICE CONTRACT 2013 SIGNED.pdf Monrep NAF1 CP2 MP1 141209 ver6.docx			
<b>Information Verified by Lead Assessor:</b>			
Methane Emissions from Sawdust/Bark Fires in Central Chile, 2006.pdf (ref.8.11.12) US FOREST SERVICE CONTRACT 2013 SIGNED.pdf (ref.8.11.11) Monrep NAF1 CP2 MP1 141209 ver6.docx (ref. 4f)			
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>			
It was verified that MR version 6 reports the values of the parameter EF <sub>CH<sub>4</sub>,BR</sub> correctly (including same decimals) than the report issued by the lab <sup>/8.11.1-8.11.9/</sup> .			
The PP provided additional information about a study conducted in 2006 (ref. 8.11.12), it was verified that at time the CH <sub>4</sub> concentration in the gases from the power plant was 0.55ppm, which is comparable with the values obtained during this monitoring period.			
<b>16.1 CL 10 closed</b>			
<b>Acceptance and Close out by Lead Assessor:</b>			<b>Date:</b> 09/12/2014

Date:	20/06/2014	Raised by:	Alicia Fernández		
Type:	CL	Number:	11	Reference:	AU4
<b>Lead Assessor Comment:</b>			<b>Date:</b> 20/06/2014		
<b>Boiler operation</b> <p>As per the MR (ref 5a) section B.1., given the forest fire that started on 31/12/2011 and affected Nueva Aldea Plywood mill and the biomass storage area, there was a period of 6 days (08/01/2012 – 13/01/2012) where the power boiler operated only with diesel.</p> <ol style="list-style-type: none"> <li>1. Please provide the daily operations records from 01/01/2012 – 14/01/2012.</li> <li>2. Please provide the supporting evidence (logbook or similar) to support that on 14/01/2012 the power boiler started biomass consumption.</li> <li>3. Please clarify the reasons why during 6 days (08/01/2012 – 13/01/2012) the power boiler operated only with fossil fuel (diesel) and explain how this in compliance with the methodology (ACM0006 version 12.1.1.).</li> </ol>					
<b>CL 11 was raised</b>					
<b>Project Participant Response:</b>			<b>Date:</b> 20/08/2014		
<p>1.- PP provided the daily operations records from 01/01/2012 to 14/01/2012. Ref: "Bitacora incendio NAF1.pdf".</p> <p>2.- As is possible read in page 34 of "Bitacora incendio NAF1.pdf" the power boiler started to operate with biomass in 14/01/2012, due to the starting operation of instruments of area 431 (to feed biomass combustible to the power boiler).</p> <p>3.- As is described in section B.2.1 of MR, fire occurred in Nueva Aldea complex destroy plywood mill, however, Nueva Aldea sawmill and Log-merchandizer should restart there operations after the incident and Power plant must provide the energy for that. The most damage area in Power Plant was 431 area: Biomass Storage and transport, then, the only source of fuel enable was Diesel.</p> <p>Nueva Aldea complex decided to start the operations using Diesel in exceptional manner until the biomass feeding system was enabled to operate. This took six days (between 8 and 13 of January, 2012) when an auxiliary feeding hooper start to operate providing biomass to the boiler till march, 2012 when 431 area was ready to operate (Dragnet, cribbing system, biomass storage, reclaimers and conveyor belts).</p> <p>All the electricity generated during this six days was subtracting from parameter <math>EL_{PJ, gross, y}</math> and ER calculation spreadsheet was corrected. Ref: "TA05-PTE-FO-051 respaldo Balance EE 2012-01 ver2.xlsx", "NAF1 monit CP2 MP1 140820 ver2.xlsx".</p>					
<b>Documentation Provided as Evidence by Project Participant:</b>					
Bitacora incendio NAF1.pdf TA05-PTE-FO-051 respaldo Balance EE 2012-01 ver2.xlsx Carta GPTNA-001-C-12 Informa Siniestro de Planta Terciado Nueva Aldea.pdf NAF1 monit CP2 MP1 140820 ver2.xlsx					
<b>Information Verified by Lead Assessor:</b>					
Bitacora incendio NAF1.pdf (ref.21) TA05-PTE-FO-051 respaldo Balance EE 2012-01 ver2.xlsx (ref. 8.9.1.1b) Carta GPTNA-001-C-12 Informa Siniestro de Planta Terciado Nueva Aldea.pdf (ref. 22) NAF1 monit CP2 MP1 140820 ver2.xlsx (ref. 5b)					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>					
<p>The PP provided the required documents.</p> <p>It was reviewed all the records available in the power plant logbook (ref. 21) from 01/01/2012 until 14/01/2012. It was verified that on 01/01/2012 the plant was operating with biomass, but later on 02/01/2012 the operation was stopped. In addition to the logbook, it was verified that Arauco informed to the local authorities (ref 22) that the plant was stopped on 02/01/2012 by security reasons. It was verified that on 08/01/2012 (ref 21) the power plant operation was restored with diesel, which is consistent with the electricity generation records (ref. 8.9.1) where no generation is recorded from 02/01/2012 until 07/01/2012. Finally it was verified that the change from diesel to biomass started on 08/01/2012 at 15:30 hrs, on 14/01/2012 the boiler was burning only biomass (ref 21).</p> <p>Based on the diesel and biomass consumption records it was verified that over the monitoring period the diesel consumed represent less than 80% of the total energy consumed, it was verified that even just considering only the month January 2012 the amount of diesel consumed was less than 80%.</p>					

<p>Finally it was verified that the PP deduct all the energy generated from 08/01/2012 until 13/01/2012 (ref. 8.9.1.1b), thus the amount of energy generated in January 2012 decreased from 11,491 (MWh) (ref. 5a) to 9,835 (MWh) (ref 5b). Similarly it was verified that the ER calculation (ref. 5b) following a conservative approach considers the entire diesel burned during the 6 days that the power plant couldn't consume biomass.</p> <p>Thus based on the information verified and the conservative approach followed by the PP, it is confirmed that the project operated in compliance with the methodology requirements.</p> <p><b>CL 11 was closed.</b></p>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 28/08/2014

Date:	20/06/2014	Raised by:	Alicia Fernández		
Type:	CL	Number:	12	Reference:	AU4 section 3 – parameter 16, 17, 18
Lead Assessor Comment:			Date: 20/06/2014		
<b>EL (Electricity generation &amp; imports)</b>  In the ERs spreadsheet (ref. 5a) the monthly information for the following parameters, for years 2012 and 2013, are detailed; but not supporting evidence were provided in order to confirm that the reported values are correct:  <ul style="list-style-type: none"><li>- <math>EL_{PJ,gross,y}</math></li><li>- <math>EL_{PJ,imp,y}</math></li><li>- <math>EL_{PJ,aux,y}</math></li></ul> Please provide the supporting evidence linked to the QA/QC of each parameter.  <b>CL 12 was raised.</b>					
Project Participant Response:			Date: 20/08/2014		
PP provided the corresponding supports and corrected the typing mistakes in $EL_{PJ,imp,y}$ and $EL_{PJ,aux,y}$ . Please, considered that due to a failure in the communication between Power plant and Arauco Bioenergía, occurred in November 2012, the support provided from November 2012 until July 2013 correspond to the integrators file that maintained Power plant. ER calculation spreadsheet was corrected according the support documents provided. Ref: Folder Respaldos EE.  To check the parameters, PP used the information in the electricity invoices of importation and exportation from and to the grid, respectively. From May 2013 Nueva Aldea complex unified the electricity invoices of the entire complex and started to emit only one importation invoice. To complement the invoices information PP includes the electricity balance provided by Arauco Bioenergía commercial area, which included the transfers of electricity within the complex Nueva Aldea. Ref: Folder Compra EE Ene 2012-Abr 2013, folder Compra EE May 2013-Dic 2013, folder Ventas EE, “Resumen facturación Compra-Venta EE CP2 MP1 NAF1.xlsx”.					
<b>Documentation Provided as Evidence by Project Participant:</b> Folder Respaldos EE Folder Compra EE Ene 2012-Abr 2013 Folder Compra EE May 2013-Dic 2013 Folder Ventas EE Resumen facturación Compra-Venta EE CP2 MP1 NAF1.xlsx					
<b>Information Verified by Lead Assessor:</b> Folder Respaldos EE (ref. 8.9.1.1b & 8.9.2b) Folder Compra EE Ene 2012-Abr 2013 (ref. 12.2) Folder Compra EE May 2013-Dic 2013 (ref. 12.3) Folder Ventas EE (ref. 12.4) Resumen facturación Compra-Venta EE CP2 MP1 NAF1.xlsx (ref. 12.5)					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b> It was verified that the $EL_{PJ,gross}$ , $EL_{PJ,imp}$ , $EL_{PJ,aux}$ , reported in the updated ER excel file (ref. 5b) are correct against the energy records obtained from the corresponding meters every 15 minutes (ref. 8.9.1b & 8.9.2b). Additionally the information was crosschecked against the corresponding invoices (when available) (ref. 12.2, 12.3 & 12.3) and the balance (ref. 12.5) performed by the PP in order cover the internal administrative change that had impact the way how the electricity is invoiced (from/to) the grid operator. The information was found correct. It was verified that in MR version 2 (ref 4b) PP reports the QA/QC, however it seems there was a editorial mistake given that same information is reported for $EL_{PJ,gross}$ , $EL_{PJ,imp}$ , $EL_{PJ,aux}$ . Please revise. <b>Item remains open.</b> <b>CL 12 remains open</b>					
Acceptance and Close out by Lead Assessor:			Date: 03/09/2014		
Project Participant Response:			Date: 23/09/2014		
PP corrected and clarified the QA/QC procedure in a new version of MR. Ref: “Monrep NAF1 CP2 MP1 141008 ver3.docx”.					
<b>Documentation Provided as Evidence by Project Participant:</b>					

Monrep NAF1 CP2 MP1 141008 ver3.docx	
<b>Information Verified by Lead Assessor:</b>	
Monrep NAF1 CP2 MP1 141008 ver3.docx (ref 4c)	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
It was verified that MR version 3 (ref 4c) reports properly the QA/QC actions carried out for parameters EL <sub>PJ,gross</sub> , EL <sub>PJ,imp</sub> , EL <sub>PJ,aux</sub> , <b>CL 12 closed</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 20/10/2014

Date:	20/06/2014	Raised by:	Alicia Fernández		
Type:	CL	Number:	13	Reference:	AU4 section 3 – parameter 19
<b>Lead Assessor Comment:</b>			<b>Date:</b> 20/06/2014		
<p><b>NCV<sub>BR,n,y</sub> (net calorific value of biomass residues)</b></p> <p>In accordance to the applicable methodology and registered PDD; the parameter NCV<sub>BR,n,y</sub> has to be measured at least every six months, taking at least 3 samples for each measurement. Also the measurement has to be performed on dry-basis and in reputed local laboratories and according to relevant international standards.</p> <ol style="list-style-type: none"> <li>1. Please provide the corresponding laboratory analysis and supports to comply with the above mentioned requirements.</li> <li>2. Please report the parameter in MR as per the required monitoring frequency.</li> </ol> <p><b>CL 13 was raised.</b></p>					
<b>Project Participant Response:</b>			<b>Date:</b> 20/08/2014		
<ol style="list-style-type: none"> <li>1. PP provided the corresponding support documents. Ref: "Informe PCI 111130.pdf", "Informe PCI 120528.pdf", "Informe PCI 121228.pdf", "Informe PCI 131028.pdf".</li> <li>2. PP corrected parameter NCV<sub>BR,n,y</sub> in MR accordingly. Ref: "Monrep NAF1 CP2 MP1 140820 ver2.docx".</li> </ol>					
<b>Documentation Provided as Evidence by Project Participant:</b>					
Informe PCI 111130.pdf Informe PCI 120528.pdf Informe PCI 121228.pdf Informe PCI 131028.pdf Monrep NAF1 CP2 MP1 140820 ver2.docx					
<b>Information Verified by Lead Assessor:</b>					
Informe PCI 111130.pdf (ref. 8.12.1) Informe PCI 120528.pdf (ref. 8.12.2) Informe PCI 121228.pdf (ref. 8.12.3) Informe PCI 131028.pdf (ref. 8.12.4) Monrep NAF1 CP2 MP1 140820 ver2.docx (ref 4b)					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>					
<ol style="list-style-type: none"> <li>1. The PP provided the result of the NCV test conducted on: 30/11/2011 (<i>ref. 8.12.1</i>); 28/05/2012 (<i>ref. 8.12.2</i>) and 28/10/2013 (<i>ref. 8.12.4</i>). As per MR version 2 (ref 4b), section B.2.1. there was a NCV measurement done on 28/12/2012, please provide the corresponding result of the test. It has to be noted that file named "Informe PCI 121228.pdf" (ref. 8.12.3) does not contain information of this project activity. <b>Item remains open.</b></li> <li>2. It was verified that MR version 2 (ref. 4b), section 0 D.2, reports the parameter once per semester, the equivalent values are included in the ER excel file (ref 5b). Please revise the value reported for biomass type 5 82012 and first semester 0032 013). <b>Item remains open.</b>  It was verified that NCV for biomass type 1 reported in MR version 2 (ref 4b) and ER excel file (ref 5b), first semester 2012 is correct against the source (ref 8.12.1), however the data reported for type 2, 3 and 4 do not match with the source (ref. 8.12.2 -4). Please revise. <b>Item remains open.</b></li> </ol>					
<b>CL 13 remains open</b>					
<b>Acceptance and Close out by Lead Assessor:</b>			<b>Date:</b> 25/08/2014		



<b>Project Participant Response:</b>	<b>Date:</b> 23/09/2014
<p>1.- PP clarified that file "Informe PCI 121228.pdf" correspond to another facility. PP corrected and provided the correct information to the assessment team. Ref: "Informe PCI 121228 ver2.pdf"</p> <p>2.- PP clarified that parameter <math>NCV_{BR,n,y}</math>, could not be obtain during 2012. PP presented a temporary deviation (See section B.2.1 of MR) using the lower value of the <math>NCV_{BR,n,y}</math> published in IP CC guideline (2006) for wood/waste wood, 7.90 (TJ/1000 ton) to the entire year. The baseline emission reductions due to uncontrolled burning of forest biomass residues during 2012 were considered zero. For first semester of 2013, the quantity of forestry biomass to power boiler was zero and that is the reason why the PP did not present a value of <math>NCV_{BR,n,y}</math>. To be clearer, PP corrected MR and used "N/D" identified 2012 cells and "N/A" for 1<sup>st</sup> semester of 2013. Ref: "Monrep NAF1 CP2 MP1 141008 ver3.docx"</p> <p>3.- PP revised and identified a mistake in <math>NCV_{BR,n,y}</math> for biomass type 2, 3 and 4 during first semester of 2012. PP corrected MR and ER spreadsheet accordingly. Ref: "Monrep NAF1 CP2 MP1 141008 ver3.docx", "NAF1 monit CP2 MP1 140929 ver3.xlsx".</p>	
<b>Documentation Provided as Evidence by Project Participant:</b>	
Informe PCI 121228 ver2.pdf Monrep NAF1 CP2 MP1 141008 ver3.docx NAF1 monit CP2 MP1 140929 ver3.xlsx	
<b>Information Verified by Lead Assessor:</b>	
Informe PCI 121228 ver2.pdf (ref. 8.12.3b) Monrep NAF1 CP2 MP1 141008 ver3.docx (ref 4c) NAF1 monit CP2 MP1 140929 ver3.xlsx (ref 5c)	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
<p>1. The PP provided the NCV analysis performed by a third party on 28/12/2012 (ref. 8.12.3b), it was verified that it contains the NCV corresponding to this project activity. It was verified that NCV reported for the period January-June 2013 in the ER excel file (ref 5c) and the MR (ref 4c) is correct against the laboratory report (ref.8.12.3b). <b>Item closed.</b></p> <p>2. It was verified that NCV values reported in the MR version 3 (ref 4c) are correct against the ER excel file (ref 5c) and the labs reports (ref. 8.12.1 to 8.12.4). <b>Item closed.</b></p>	
<b>CL 13 closed on 15/10/2014, re-opened on 26/11/2014</b>	
In MR, section D.2, parameter $NCV_{BR,n,y}$ please clarify whether the NCV measurements where done internally or by a third party.	
<b>CL 13 remains open.</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 15/10/2014, 26/11/2014
<b>Project Participant Response:</b>	<b>Date:</b> 02/12/2014
PP clarified that samples to obtain NCV value were taken internally, but measurement of NCV parameter required a certificated procedure executed in an external laboratory. PP corrected MR to prevent misunderstandings. Ref: "Monrep NAF1 CP2 MP1 141202 ver5.docx"	
<b>Documentation Provided as Evidence by Project Participant:</b>	
Monrep NAF1 CP2 MP1 141202 ver5.docx	
<b>Information Verified by Lead Assessor:</b>	
Monrep NAF1 CP2 MP1 141202 ver5.docx (ref 4e)	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
It was verified that MR version 5 (ref 4e), section D.2, parameter $NCV_{BR,n,y}$ completed properly the source from where this parameter is obtained. As per revised MR (ref 4e) the parameter is measured and calculated by a third independent party. It was verified that the NCVBr test were conducted by CESMEC, a reputed national laboratory.	
<b>CL 13 was closed.</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 03/12/2014

Date:	20/06/2014	Raised by:	Alicia Fernández		
Type:	CAR	Number:	14	Reference:	AU4 section 3 – parameter 20
<b>Lead Assessor Comment:</b>				<b>Date:</b> 20/06/2014	
<p><b>Biomass moisture content</b></p> <p>The PP provided records of the measurements of the biomass moisture content of the sludge, internal and external biomass residues and forest biomass residues, for the entire monitoring period.</p> <p>1. During 2012, by the review of the following documents: “Humedad lodo.xlsx” and “Planilla medición de humedad 2012 140221.xl” against the information reported in the ERs spreadsheet (ref. 5a), the following issues were found:</p> <ul style="list-style-type: none"> <li>- Sludge moisture reported for January 2012. Please revise.</li> <li>- Mix of sawdust and bark from off site for May &amp; June 2012. Please revise.</li> </ul> <p><b>CAR 14 was raised.</b></p>					
<b>Project Participant Response:</b>				<b>Date:</b> 20/08/2014	
<p>PP corrected in ER spreadsheet calculation the following data according the support documents:</p> <ul style="list-style-type: none"> <li>- Sludge moisture reported: January 2012.</li> <li>- Mix of sawdust and bark from on site for industrial operations Moisture: December 2012.</li> <li>- Mix of sawdust and bark from off site for industrial operations Moisture: May and June 2012.</li> </ul> <p>PP mentioned that due to corrections in CL 07, support file of moisture content was updated to “Medición humedad 2012 140221 Ver2.xlsx”</p> <p>Ref: “NAF1 monit CP2 MP1 140820 ver2.xlsx”.</p>					
<b>Documentation Provided as Evidence by Project Participant:</b>					
Medición humedad 2012 140221 Ver2.xlsx					
NAF1 monit CP2 MP1 140820 ver2.xlsx					
<b>Information Verified by Lead Assessor:</b>					
Medición humedad 2012 140221 Ver2.xlsx (ref. 8.1.3b)					
NAF1 monit CP2 MP1 140820 ver2.xlsx (ref 4b)					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>					
It was reviewed the updated ER excel file (ref. 5b) and MR version 2 (ref. 4b),, it was verified that the data is correct against the file that records the measurements performed (ref. 8.1.3.b).					
<b>CAR 14 was closed</b>					
<b>Acceptance and Close out by Lead Assessor:</b>				<b>Date:</b> 26/08/2014	

Date:	20/06/2014		Raised by:	Alicia Fernández	
Type:	CAR	Number:	15	Reference:	AU4 section 3 – parameters 21-26
Lead Assessor Comment:				Date: 20/06/2014	
Grid Emission factor					
By the review of the grid emission factor calculation, the following issues were found:					
<div>a) NCV<sub>i,y</sub> reported on page 38 are different to those reported in sheet “fossil fuel data” in 2012 and 2013’s Grid emission factor calculation spreadsheets. Similarly it was found that the <i>EFCO2,i</i> /carbon content used in 2012&amp;2013 for the coal is wrong. Please revise and clarify.</div>					
<div>b) The MR indicates that 2012 Energy Balance will be used as an official source of information for this parameter, NCV<sub>i,y</sub>. However, 2012 and 2013 GEF calculation spreadsheets mention 2011 and 2010 Energy balance as data source. Please correct the information source accordingly.</div>					
<div>c) In the calculation of 2013 OM emission factor, the spreadsheet “SGA_20131224.xls” is indicated as source for determining the specific fuel consumption, however such spreadsheet was not provided. In addition, CDEC-SIC 2013’s yearbook is indicated as information source, although the latest version available at CDEC-SIC’s website includes information up to 2012. Please provide the missing documentation and clarify the information source used to determine the specific fuel consumption during 2013.</div>					
<div>d) In the GEF calculation spreadsheets 2012 and 2013, sheets “Gen SIC data”, “SIC emission indices” and “SIC emissions”, wind power plants are referred to as “Aeolics”. Please correct.</div>					
<div>e) Power plant Watts is identified as CDM project in the calculation of 2013’s grid emission factor, but not for 2012’s GEF.</div>					
<div>f) In the 2013’s GEF calculation spreadsheet, sheet “Fossil fuel data”: the Fossil fuel CO2 emission factor EF<sub>CO2i,y</sub> is not calculated as specified in the Monitoring plan in the registered PDD. Please correct the calculation accordingly.</div>					
<div>g) In the spreadsheet corresponding to 2012 GEF calculation, sheet “SIC emission indices”, fuel consumption of the power plants San Isidro GNL, Guacolda 1,2, 3 &amp;4, Nehuenco TG 9B GN, Trapen, Teno, El Peñon, Candelaria Diesel, Nueva Renca FA, Nueva Renca GN, Degan, Punta Colorada IFO, Cem Bio Bio IFO, are not consistent with the value verified in the data source. Please correct accordingly.</div>					
<div>h) According to the registered PDD and the Tool to calculate the emission factor for an electricity system v3.0, for the second crediting period, the build margin emission factor shall be calculated ex ante at the time of submission of the request for renewal of the crediting period. A BM of 0.695 tCO2e/MWh was validated at the revalidation stage; despite this a BM of 0.643 tCO2e was calculated for this monitoring period in the 2012 GEF calculation spreadsheet. Please correct GEF calculation spreadsheet accordingly.</div>					
<div>i) The reported values for 2013 Specific fuel consumption of the power plants Esperanza 1 and Esperanza 2 are not consistent with the data source indicated in the spreadsheet (CEDC-SIC node price report, October 2013). Please correct accordingly.</div>					
CAR 15 was raised.					

<b>Project Participant Response:</b>	<b>Date:</b> 17/07/2014
<p>a) The NCV<sub>i</sub>s reported on page 38 are those published in the National Energy Balance. In the GEF calculation spreadsheets these values have been deducted 5% in the case of solid and liquid fossil fuels and 10% in the case of gaseous fuels. This is due to the fact that it is unknown whether published values are net or gross calorific values. Additionally, the EF<sub>CO<sub>2</sub>i</sub> for coal has been changed from that of bituminous coal to that of sub-bituminous coal. Ref: "Emission Factor SIC 2012 ACM0002 Ver13 ver1 NAPH1.xlsx", "Emission Factor SIC 2013 ACM0002 Ver13 ver1 NAPH1.xlsx".</p> <p>b) The information source has been corrected in the GEF calculation spreadsheets. For the calculation of the 2012 GEF, the 2011 National Energy Balance was used, while for the 2013 GEF, the 2012 edition was used. Ref: "BNE 2011.xlsx", "BNE 2012.xlsx".</p> <p>c) File "SGA_20131224.xlsx" is provided along with this Findings Overview. While the 2013 CDEC-SIC yearbook has not yet been officially published, the Project Participant has access to preliminary data gathered in file "Anuario_04-13_v1.xlsx". This file is sent along with this Findings Overview. Ref: "SGA_20131224.xlsx", "Anuario_04-13_v1.xlsx".</p> <p>d) The term "Aeolics" has been changed to "Wind" in all spreadsheets in which it appears. Ref: "Emission Factor SIC 2012 ACM0002 Ver13 ver1 NAPH1.xlsx", "Emission Factor SIC 2013 ACM0002 Ver13 ver1 NAPH1.xlsx".</p> <p>e) Power plant Watts is not a CDM project. This mistake has been corrected in the 2013 GEF calculation spreadsheet. Ref: "Emission Factor SIC 2013 ACM0002 Ver13 ver1 NAPH1.xlsx".</p> <p>f) Calculation of EF<sub>CO<sub>2</sub>i</sub> has been re-done according to the registered PDD in the 2013 GEF calculation spreadsheet. Ref: "Emission Factor SIC 2013 ACM0002 Ver13 ver1 NAPH1.xlsx".</p> <p>g) Fossil fuel consumption of the San Isidro GNL, Guacolda 1,2, 3 &amp; 4, Nehuenco TG 9B GN, Trapen, Teno, and El Peñon power plants has been modified in the 2012 GEF calculation to reflect the value published in the data source. As for power plants Candelaria Diesel, Nueva Renca FA, Nueva Renca FA GN, Degan, Punta Colorada IFO, Cem Bio Bio IFO, the 2012 CDEC-SIC Yearbook does not contain any information. Therefore, as stated in the 2012 GEF calculation spreadsheet, specific fuel consumption published in the October 2012 node price report has been used for the GEF calculation. Ref: "Informe precio nudo Octubre 2012.xlsx".</p> <p>h) The BM emission factor calculation has been eliminated from the 2012 and 2013 GEF calculation spreadsheets and the value calculated ex ante has been applied to the calculation of the GEF. Ref: "Emission Factor SIC 2012 ACM0002 Ver13 ver1 NAPH1.xlsx", "Emission Factor SIC 2013 ACM0002 Ver13 ver1 NAPH1.xlsx".</p> <p>i) Specific fuel consumption for power plants Esperanza 1 and 2 is expressed in m<sup>3</sup>/Mwh in the October 2013 node price report, while in the GEF calculation spreadsheet it is expressed in kg/kwh. Therefore, in the GEF calculation spreadsheet, published fuel consumption is multiplied by the diesel density reported in the National Energy Balance (also present the "Fossil fuel data" worksheet).</p>	
<b>Documentation Provided as Evidence by Project Participant:</b>	
Emission Factor SIC 2012 ACM0002 Ver13 ver1 NAPH1.xlsx Emission Factor SIC 2013 ACM0002 Ver13 ver1 NAPH1.xlsx BNE 2011.xlsx BNE 2012.xlsx SGA_20131224.xlsx Anuario_04-13_v1.xlsx Informe precio nudo Octubre 2012.xlsx	
<b>Information Verified by Lead Assessor:</b>	
Emission Factor SIC 2012 ACM0002 Ver13 ver1 NAPH1.xlsx (ref. 6.1.b) Emission Factor SIC 2013 ACM0002 Ver13 ver1 NAPH1.xlsx (ref 7.1.b) BNE 2011.xlsx (ref 6.4) BNE 2012.xlsx (ref. 7.5) SGA_20131224.xlsx (ref. 7.6) Anuario_04-13_v1.xlsx (ref. 7.7) Informe precio nudo Octubre 2012.xlsx (ref. 7.8)	

<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
<p>a) It was verified that NCV values included in the grid emission factor spreadsheets (ref 6.1b &amp; 7.1b) are correct against the source. It was verified as well that MR include the calorific value reported by the CNE (ref. 6.4 &amp; 7.5), this value is corrected by a factor equal to 5% in order to convert the values in NCV for the ER calculations (ref 5b). In order to avoid misunderstanding the PP is requested to clarify this issue in the MR. Additionally please revise the “additional comment” stated for the parameter. Regarding EFco2, it was verified that values reported in MR version 2 are correct against the source. <b>Item remains open.</b></p> <p>b) It was verified that the updated grid emission factor spreadsheets (ref 6.1b &amp; 7.1b) refers to National Energy Balance 2011 &amp; 2012 (ref. 6.4 &amp; 7.5), it worth to mention that the NCV reported in national Energy Balances 2011 &amp; 2012 are the same. <b>Item closed.</b></p> <p>c) The specific consumption 2013 of the plants that couldn't be verified before was crosschecked with the data available in the report “SGA_20131224.xls” (ref. 7.6), it was found that the information was correct against the source. <b>Item closed.</b></p> <p>d) It was verified that the updated GEF calculation spreadsheets 2012 and 2013 (ref 6.1b &amp; 7.1b), sheets “Gen SIC data”, “SIC emission indices” and “SIC emissions” were corrected. <b>Item closed.</b></p> <p>e) It was verified that the updated GEF calculation spreadsheets 2012 and 2013 (ref 6.1b &amp; 7.1b) corrected the status of “Watts” (no CDM plant). <b>Item closed.</b></p> <p>f) It was verified that the PP corrected the calculation procedure for year 2013 (ref 7.1.b) to obtain the emission factor (tCO2/ton) of each fuel. It is correctly obtained as the NCV*EF. The calculation procedure is consistent with the one used for year 2012 (ref 6.1.b). <b>Item closed.</b></p> <p>g) It was verified that the fuel consumption of San Isidro GNL, Guacolda 1,2, 3 &amp;4, Nehuenco TG 9B GN, Trapen, Teno, El Peñon, Candelaria Diesel, Nueva Renca FA, Nueva Renca GN, Degan, Punta Colorada IFO, Cem Bio Bio IFO were corrected in the grid emission factor 2012 file (ref 6.1b). <b>Item closed.</b></p> <p>h) It was verified that the updated GEF calculation spreadsheets 2012 and 2013 (ref 6.1b &amp; 7.1b) do not include the BM calculation because it is an ex-ante parameter. <b>Item closed.</b></p> <p>i) It was verified that Esperanza 1 and Esperanza 2 run by diesel and that the specific consumption informed in Node price report (ref. 7.8) is expressed in m<sup>3</sup>/Mwh. Thus the values reported by the PP in the 2013 GEF file (ref 7.1.b) are correct, they were transformed into kg/kwh using the density informed in the National Energy Balance. <b>Item closed.</b></p>	
<b>CAR 15 remains open.</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 28/08/2014
<b>Project Participant Response:</b>	<b>Date:</b> 23/09/2014
PP corrected the declared parameters for NCV in new version of MR. Cell “Additional comments” was corrected to clarify that the values in National energy balance were considered GCV and applied a factor of 0.95 and 0.9 to convert GCV in NCV according IPCC Guideline, Volume 2, Chapter 1, page 1-16. Ref: “Monrep NAF1 CP2 MP1 141008 ver3.docx”.	
<b>Documentation Provided as Evidence by Project Participant:</b>	
Monrep NAF1 CP2 MP1 141008 ver3.docx	

<b>Information Verified by Lead Assessor:</b>	
Monrep NAF1 CP2 MP1 141008 ver3.docx (ref 4c) Emission Factor SIC 2012 ACM0002 Ver13 ver1 NAPH1.xlsx (ref. 6.1.b), the file was received from the PP but it was not listed by PP in the section above Emission Factor SIC 2013 ACM0002 Ver13 ver1 NAPH1.xlsx (ref 7.1.b), the file was received from the PP but it was not listed by PP in the section above	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
It was verified that MR version 3 (ref 4c) reports correctly the NCV values, they corresponds to the values reported by the local authority (ref. 6.4 & 7.5) with the application of the factor to convert the values from gross calorific value to net calorific value. The MR informs as well the application of this factor. Finally the values are consistent with the ones available in the GEF spreadsheet (ref. 6.1.b & 7.1.b). Item closed.	
<b>CAR 15 closed on 15/10/2014, re-opened on 23/12/2014</b>	
<p>16.2 j. Regarding the EF spreadsheets, please consider the following comments:</p> <ul style="list-style-type: none"> <li>Emission Factor SIC 2012 ACM0002 Ver 13 ver1 NAPH1 <ul style="list-style-type: none"> <li>Please confirm if the comments in tabs "Gen SIC data 2012", "Gen SIC" and "SIC emissions" are necessary</li> <li>"Fossil Fuel data" tab; Cell B3 and throughout the tab, please revise and correct year of the "CNE energy balance" used as source.</li> <li>"CM" tab: Cell G11 doesn't match the MR page 55</li> </ul> </li> <li>Emission Factor SIC 2013 ACM0002 Ver13 (NAPH1) ver1 <ul style="list-style-type: none"> <li>"Thermic gen SIC" tab: please confirm if the comments in this tab are necessary</li> <li>"CM" tab; Cell G11, G12 and G13 doesn't match the MR page 55</li> </ul> </li> </ul>	
<b>CAR 15 remains open.</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 15/10/2014, 23/12/2014
<b>Project Participant Response:</b>	<b>Date:</b> 24/12/2014
Comments deemed unnecessary by the PP have been eliminated from "Emission Factor SIC 2012 ACM0002 Ver 13 ver1 NAPH1.xlsx" and "Emission Factor SIC 2013 ACM0002 Ver13 (NAPH1) ver1.xlsx." However comments related to name equivalencies among power plants, though hidden, have been left in the files. The reason for this is that in the information available from the CDEC-SIC power plants may be referred to by more than one name, thereby making data more difficult to trace by those not familiar with the SIC. With regard to the "CNE Energy Balance" used as source in "Emission Factor SIC 2012 ACM0002 Ver 13 ver1 NAPH1.xlsx," the PP wishes to clarify that by the time the emission factor calculation was completed, the 2011 issue of the balance was the most recent one. To date, the 2012 issue is the last one published so the source citation and data have been corrected accordingly. Ref: "BNE 2012.xlsx" Differences between Emission Factor SIC 2012 ("CM" tab: Cell G11), Emission Factor SIC 2013 ("CM" tab; Cell G11, G12 and G13) and values declared in MR are only due to different units used. PP includes in new versions of the emission factor calculation for 2012 and 2013, a column with values in tCO <sub>2</sub> /MWh.	
<b>Documentation Provided as Evidence by Project Participant:</b>	
Emission Factor SIC 2012 ACM0002 Ver13 (NAPH1) ver2.xlsx Emission Factor SIC 2013 ACM0002 Ver13 (NAPH1) ver2.xlsx BNE 2012.xlsx	
<b>Information Verified by Lead Assessor:</b>	
Emission Factor SIC 2012 ACM0002 Ver13 (NAPH1) ver2.xlsx (ref. 6.1c) Emission Factor SIC 2013 ACM0002 Ver13 (NAPH1) ver2.xlsx (ref. 7.1c) BNE 2012.xlsx (ref. 6.4b)	



Reasoning for not Acceptance or Acceptance and Close Out:

It was verified on the updated files used to calculate the grid emission factor (ref. 6.1c and 7.1c) that PP kept the comments that allow identifying the different power plants of the grid, while comments for internal references were deleted.

It was verified as well that the information sources were correctly updated according with the source used (ref. 6.4b).

CAR 15 was closed on 26/12/2014, re-opened on 16/02/2014

In files "Emission Factor SIC 2012 ACM0002 Ver13 (NAPh1) ver2.xlsx" and "Emission Factor SIC 2013 ACM0002 Ver13 (NAPh1) ver2.xlsx", please check the comments that appears on tabs "Gen SIC data 2012", "Gen SIC data 2013", "Gen SIC", "SIC emissions" respectively. Item open.

CAR 15 remains open.

Acceptance and Close out by Lead Assessor:

Date: 26/12/2014, 16/02/2015

Project Participant Response:

Date: 17/02/2015

PP clarified that comments in Emission factor spreadsheet calculation provides necessary information to understand CDEC SIC supports. In some cases, Power plants has two different names, and is important to clarify these singularities. PP corrected some comments and eliminated the comments that are not strictly necessary.  
Ref: "Emission Factor SIC 2012 ACM0002 Ver13 (NAPh1) ver3.xlsx", "Emission Factor SIC 2013 ACM0002 Ver13 (NAPh1) ver3.xlsx".

Documentation Provided as Evidence by Project Participant:

Emission Factor SIC 2012 ACM0002 Ver13 (NAPh1) ver3.xlsx  
Emission Factor SIC 2013 ACM0002 Ver13 (NAPh1) ver3.xlsx

Information Verified by Lead Assessor:

Emission Factor SIC 2012 ACM0002 Ver13 (NAPh1) ver3.xlsx (ref. 6.1d)  
Emission Factor SIC 2013 ACM0002 Ver13 (NAPh1) ver3.xlsx (ref. 7.1d)

Reasoning for not Acceptance or Acceptance and Close Out:

It was verified that the updated files (ref. 6.1d & 7.1c) keep only the comments that are relevant for the PP and for the verification. During the verification assessment it was verified that in some cases the CDEC-SIC / CNE refers to a same power plant with different name. The cited comments do not have impact over the calculations.

CAR 15 closed on 18/02/2015, re-opened on 18/03/2015

PP is requested to check the year informed in file "7.1d. Emission Factor SIC 2013 ACM0002 Ver13 (NAPh1) ver3.xlsx", tab "Lambda SIC 2013".

Acceptance and Close out by Lead Assessor:

Date: 18/03/2015

Project Participant Response:

Date: 18/03/2015

There was a typo mistake in tab "Lambda SIC 2013". PP corrected in new version of EF SIC calculation spreadsheet. Ref: "Emission Factor SIC 2013 ACM0002 ver13 (NAPh1) ver4.xlsx".

Documentation Provided as Evidence by Project Participant:

Emission Factor SIC 2013 ACM0002 ver13 (NAPh1) ver4.xlsx

Information Verified by Lead Assessor:

Emission Factor SIC 2013 ACM0002 ver13 (NAPh1) ver4.xlsx (ref. 7.1e)

Reasoning for not Acceptance or Acceptance and Close Out:

The updated file where the grid emission factor 2013 (ref. 7.1e) was reviewed, it was verified that in tab "Lambda SIC 2013" was corrected the year reported, it said 2012 while it was 2013. It was verified as well that the mistake was a typo and it does not have relation with the data itself, i.e., all the data that was included for the grid emission factor 2013 was correct and corresponded to 2013.

CAR 15 was closed.

Acceptance and Close out by Lead Assessor:

Date: 19/03/2015

Date:

20/06/2014

Raised by:

Alicia Fernández



Type:	CAR	Number:	16	Reference:	AU4 section 4
<b>Lead Assessor Comment:</b>				<b>Date:</b> 20/06/2014	
<p>The methane global warming potential is a default value of 21 tCO<sub>2</sub>/tCH<sub>4</sub> and should be updated as per any future COP/MOP.</p> <p>The EB 69 Annex 3 indicates that “<i>All emission reductions and removals achieved by CDM project activities and PoAs in the second commitment period of the Kyoto Protocol shall be calculated using the global warming potentials (GWPs) adopted by the Conference of the Parties serving as the meeting of the Parties at its seventh session, in accordance with decision 4/CMP.7. This requirement shall apply from 1 January 2013, notwithstanding any GWPs stated to be applicable in the relevant procedures, standards, guidance, approved baseline and monitoring methodologies, methodological tools and other rules being used in relation to that project activity or PoA.</i>”</p> <p>Please correct the ERs calculations in line with the EB69 Annex 3 requirements.</p> <p><b>CAR 16 was raised.</b></p>					
<b>Project Participant Response:</b>				<b>Date:</b> 17/07/2014	
<p>PP applied the updated value for global warming potential (GWP) in the second commitment period from 21 tCO<sub>2</sub>/tCH<sub>4</sub> to 25 tCO<sub>2</sub>/tCH<sub>4</sub> for the credits calculated in 2013. Ref: “Monrep NAF1 CP2 MP1 140820 ver2.docx”, “NAF1 monit CP2 MP1 140820 ver2.xlsx”</p>					
<b>Documentation Provided as Evidence by Project Participant:</b>					
<p>Monrep NAF1 CP2 MP1 140820 ver2.docx NAF1 monit CP2 MP1 140820 ver2.xlsx</p>					
<b>Information Verified by Lead Assessor:</b>					
<p>Monrep NAF1 CP2 MP1 140820 ver2.docx, MR version 2 dated 20/08/2014 (ref 4b) NAF1 monit CP2 MP1 140820 ver2.xlsx, ER spreadsheet version2 (ref 5b)</p>					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>					
<p>The updated ER spreadsheet (ref 5b) was reviewed and it was found that tab “2013 Emissions”, cells E40:G40 and E52:G52 have been correctly modified from 21 tCO<sub>2</sub>e/tCH<sub>4</sub> to 25 tCO<sub>2</sub>e/tCH<sub>4</sub>, which is in line with EB69 Annex 3.</p> <p>It was verified as well that the updated MR (ref 4b) reports correctly the GWP for the first and second commitment period.</p>					
<b>CAR 16 closed on 26/08/2014, re-assessed on 02/12/2014</b>					
<p>Given that the PP was updated in order to solve other issues the section B.6.2. was updated. It was verified that the GWP value was defined for the first and second commitment period. The correction of the GWP value was introduced correctly as a correction to the PP without prior approval as per the guidance of PS version 7 para 1, and it is properly reported in MR version 5(ref 4e) section B.2.2.</p>					
<b>CAR 16 was closed on 02/12/2014, re-assessed on 23/12/2014</b>					
<p>Considering that GWP has been corrected in B.6.2 for 2013 and on, please revise the GWP reported in the updated PDD (page 85 clean version and 90 track change) and correct the figures accordingly.</p> <p><b>CAR 16 remains open.</b></p>					
<b>Acceptance and Close out by Lead Assessor:</b>				<b>Date:</b> 26/08/2014, 02/12/2014, 23/12/2014	
<b>Project Participant Response:</b>				<b>Date:</b> 23/12/2014	
<p>PP corrected calculations in PDD considering the new value on GWP. A new version of PDD and calculation of ex ante estimates of emission reductions are presented to assessment team. Ref: “PDDV4_141224.docx”, “0258-CERS-11-12 ver1.xlsx”.</p>					
<b>Documentation Provided as Evidence by Project Participant:</b>					
<p>PDDV4_141224.docx 0258-CERS-11-12 ver1.xlsx</p>					
<b>Information Verified by Lead Assessor:</b>					
<p>PDDV4_141224.docx (ref. 1.3) 0258-CERS-11-12 ver1.xlsx (ref. 1.4)</p>					

<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
It was verified that the PP updated the PDD (ref. 1.3) correctly in section B.6.3, the information reported in the revised PDD was crosschecked with the updated ER ex-ante(ref. 1.4) spreadsheet and it was found correct. Additionally it was verified that the updated ER ex-ante(ref. 1.4) spreadsheet, is equivalent to the one available at the UNFCCC project web page but is was modified the tab "Emission reduction calculation", line 40 in order to reflect the GWP value (25) from 2013 and on.	
<b>CAR 16 was closed.</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 26/12/2014

## 17. Statement of Competence

Name: Alicia Fernandez

### Status

- Lead Assessor	x	- Expert	
- Assessor	x	- Financial Expert	
- Local Assessor	Chile	- Technical Reviewer	

### Scopes of Expertise

<b>1. Energy Industries (renewable / non-renewable)</b>	
Technical Area(s):	
<b>2. Energy Distribution</b>	
Technical Area(s):	
<b>3. Energy Demand</b>	
Technical Area(s):	
<b>4. Manufacturing</b>	
Technical Area(s):	
<b>5. Chemical Industry</b>	
Technical Area(s):	
<b>6. Construction</b>	
Technical Area(s):	
<b>7. Transport</b>	
Technical Area(s):	
<b>8. Mining/Mineral Production</b>	
Technical Area(s):	
<b>9. Metal Production</b>	
Technical Area(s):	
<b>10. Fugitive Emissions from Fuels (solid, oil and gas)</b>	
Technical Area(s):	
<b>11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b>	
Technical Area(s):	
<b>12. Solvent Use</b>	
Technical Area(s):	
<b>13. Waste Handling and Disposal</b>	
Technical Area(s):	
<b>14. Afforestation and Reforestation</b>	
Technical Area(s):	
<b>15. Agriculture</b>	
Technical Area(s):	

Approved Member of Staff by:	Siddharth Yadav	Date:	01/02/2013
Continued Compliance	Lisa Brough		15/01/2015

Name: **Paulina Kellenberger**

### Status

- Lead Assessor	<b>x</b>	- Expert	<input type="checkbox"/>
- Assessor	<b>x</b>	- Financial Expert	<input type="checkbox"/>
- Local Assessor	<b>Chile</b>	- Technical Reviewer	<input type="checkbox"/>

### Scopes of Expertise

<b>1. Energy Industries (renewable / non-renewable)</b>	<input type="checkbox"/>
Technical Area(s):	
<b>2. Energy Distribution</b>	<input type="checkbox"/>
Technical Area(s):	
<b>3. Energy Demand</b>	<input type="checkbox"/>
Technical Area(s):	
<b>4. Manufacturing</b>	<input type="checkbox"/>
Technical Area(s):	
<b>5. Chemical Industry</b>	<input type="checkbox"/>
Technical Area(s):	
<b>6. Construction</b>	<input type="checkbox"/>
Technical Area(s):	
<b>7. Transport</b>	<input type="checkbox"/>
Technical Area(s):	
<b>8. Mining/Mineral Production</b>	<input type="checkbox"/>
Technical Area(s):	
<b>9. Metal Production</b>	<input type="checkbox"/>
Technical Area(s):	
<b>10. Fugitive Emissions from Fuels (solid, oil and gas)</b>	<input type="checkbox"/>
Technical Area(s):	
<b>11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b>	<input type="checkbox"/>
Technical Area(s):	
<b>12. Solvent Use</b>	<input type="checkbox"/>
Technical Area(s):	
<b>13. Waste Handling and Disposal</b>	<input type="checkbox"/>
Technical Area(s):	
<b>14. Afforestation and Reforestation</b>	<input type="checkbox"/>
Technical Area(s):	
<b>15. Agriculture</b>	<input type="checkbox"/>
Technical Area(s):	

Approved Member of Staff by:	<b>Siddharth Yadav</b>	Date:	<b>06/02/2012</b>
Continued Compliance	<b>Lisa Brough</b>		<b>15/01/2015</b>

Name: Yi Liao

### Status

- Lead Assessor	<input type="checkbox"/>	- Expert	<input checked="" type="checkbox"/>
- Assessor	<input type="checkbox"/>	- Financial Expert	<input type="checkbox"/>
- Local Assessor	<input type="checkbox"/>	- Technical Reviewer	<input type="checkbox"/>

### Scopes of Expertise

<b>1. Energy Industries (renewable / non-renewable)</b>	<input checked="" type="checkbox"/>
Technical Area(s): TA 1.1 Thermal energy generation	
<b>2. Energy Distribution</b>	<input type="checkbox"/>
Technical Area(s):	
<b>3. Energy Demand</b>	<input type="checkbox"/>
Technical Area(s):	
<b>4. Manufacturing</b>	<input type="checkbox"/>
Technical Area(s):	
<b>5. Chemical Industry</b>	<input type="checkbox"/>
Technical Area(s):	
<b>6. Construction</b>	<input type="checkbox"/>
Technical Area(s):	
<b>7. Transport</b>	<input type="checkbox"/>
Technical Area(s):	
<b>8. Mining/Mineral Production</b>	<input type="checkbox"/>
Technical Area(s):	
<b>9. Metal Production</b>	<input type="checkbox"/>
Technical Area(s):	
<b>10. Fugitive Emissions from Fuels (solid, oil and gas)</b>	<input type="checkbox"/>
Technical Area(s):	
<b>11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b>	<input type="checkbox"/>
Technical Area(s):	
<b>12. Solvent Use</b>	<input type="checkbox"/>
Technical Area(s):	
<b>13. Waste Handling and Disposal</b>	<input type="checkbox"/>
Technical Area(s):	
<b>14. Afforestation and Reforestation</b>	<input type="checkbox"/>
Technical Area(s):	
<b>15. Agriculture</b>	<input type="checkbox"/>
Technical Area(s):	

Approved Member of Staff by:	Siddharth Yadav	Date:	06/02/2012
Continued Compliance	Lisa Brough		15/01/2015

Name: Michael Wu

### Status

- Lead Assessor	<input type="checkbox"/>	- Expert	<input type="checkbox"/>
- Assessor	<input type="checkbox"/>	- Financial Expert	<input type="checkbox"/>
- Local Assessor	<input type="checkbox"/>	- Technical Reviewer	<input checked="" type="checkbox"/>

### Scopes of Expertise

<b>1. Energy Industries (renewable / non-renewable)</b>	<input type="checkbox"/>
Technical Area(s): sources	
<b>2. Energy Distribution</b>	<input type="checkbox"/>
Technical Area(s):	
<b>3. Energy Demand</b>	<input type="checkbox"/>
Technical Area(s):	
<b>4. Manufacturing</b>	<input type="checkbox"/>
Technical Area(s):	
<b>5. Chemical Industry</b>	<input type="checkbox"/>
Technical Area(s):	
<b>6. Construction</b>	<input type="checkbox"/>
Technical Area(s):	
<b>7. Transport</b>	<input type="checkbox"/>
Technical Area(s):	
<b>8. Mining/Mineral Production</b>	<input type="checkbox"/>
Technical Area(s):	
<b>9. Metal Production</b>	<input type="checkbox"/>
Technical Area(s):	
<b>10. Fugitive Emissions from Fuels (solid, oil and gas)</b>	<input type="checkbox"/>
Technical Area(s):	
<b>11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b>	<input type="checkbox"/>
Technical Area(s):	
<b>12. Solvent Use</b>	<input type="checkbox"/>
Technical Area(s):	
<b>13. Waste Handling and Disposal</b>	<input type="checkbox"/>
Technical Area(s):	
<b>14. Afforestation and Reforestation</b>	<input type="checkbox"/>
Technical Area(s):	
<b>15. Agriculture</b>	<input type="checkbox"/>
Technical Area(s):	
Approved Member of Staff by: Siddharth Yadav	Date: 19/10/2012
Continued Compliance Lisa Brough	15/01/2015

Name: **Jumson Fu**

### Status

- Lead Assessor	<input type="checkbox"/>	- Expert	<input checked="" type="checkbox"/>
- Assessor	<input type="checkbox"/>	- Financial Expert	<input type="checkbox"/>
- Local Assessor	<input type="checkbox"/>	- Technical Reviewer	<input type="checkbox"/>

### Scopes of Expertise

<b>1. Energy Industries (renewable / non-renewable)</b>	<input checked="" type="checkbox"/>
Technical Area(s): TA 1.1 Thermal energy generation	
<b>2. Energy Distribution</b>	<input type="checkbox"/>
Technical Area(s):	
<b>3. Energy Demand</b>	<input type="checkbox"/>
Technical Area(s):	
<b>4. Manufacturing</b>	<input type="checkbox"/>
Technical Area(s):	
<b>5. Chemical Industry</b>	<input type="checkbox"/>
Technical Area(s):	
<b>6. Construction</b>	<input type="checkbox"/>
Technical Area(s):	
<b>7. Transport</b>	<input type="checkbox"/>
Technical Area(s):	
<b>8. Mining/Mineral Production</b>	<input type="checkbox"/>
Technical Area(s):	
<b>9. Metal Production</b>	<input type="checkbox"/>
Technical Area(s):	
<b>10. Fugitive Emissions from Fuels (solid, oil and gas)</b>	<input type="checkbox"/>
Technical Area(s):	
<b>11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b>	<input type="checkbox"/>
Technical Area(s):	
<b>12. Solvent Use</b>	<input type="checkbox"/>
Technical Area(s):	
<b>13. Waste Handling and Disposal</b>	<input type="checkbox"/>
Technical Area(s):	
<b>14. Afforestation and Reforestation</b>	<input type="checkbox"/>
Technical Area(s):	
<b>15. Agriculture</b>	<input type="checkbox"/>
Technical Area(s):	

Approved Member of Staff by:	<b>Siddharth Yadav</b>	Date:	<b>15/02/2012</b>
Continued Compliance	<b>Lisa Brough</b>		<b>15/01/2015</b>



## 18. Photographic Evidence

- Parameter 2:** Quantity of biomass residues of category n used in the CDM project activity in year y (tonnes on dry-basis) ( $BR_{PJ,n,y}$ )
- Parameter 3:** Quantity of biomass residues of category k used in the Project activity in year y for which the baseline scenario is B4 (tonnes on dry-basis) ( $BR_{B4,n,y}$ )
- Parameter 4:** Quantity of biomass residues of category n used in the project activity in year y for which the baseline scenario is B1 or B3 (tonnes on dry-basis) ( $BR_{B1/B3,n,y}$ )
- Parameter 5:** Quantity of biomass residues of category n used in the project activity in year y for which the baseline scenario is B5:, B6:, B7, or B8 (tonnes on dry-basis) ( $BR_{B5/B8,n,y}$ )
- Parameter 6:** Total mass of freight transported in freight transportation activity f in monitoring period m. ( $FR_{f,m}$ )

For above referenced parameters, the below photographs are relevant:

Unique reference number:

TAG: 463-FIQ-174

S/N: 965691

Name of equipment: Sander Dust conveyor Belt weight

Date: 27/06/2014



Unique reference number:

Date: 27/06/2014

TAG: 531-WI-5518A

S/N: 38711

Name of equipment: Pulp Mill Bark conveyor Belt weight meter



Unique reference number:  
TAG: 431-FIQ-502  
S/N: PBD/W 1020545PJ  
Name of equipment: Log processing Bark conveyor belt weight meter Date: 27/06/2014



Unique reference number:  
TAG: none  
S/N: 325078  
Name of equipment: Weighbridge Date: 27/06/2014



Unique reference number:  
TAG: none  
S/N: 5429421-5EF  
Name of equipment: Weighbridge Date: 27/06/2014



Unique reference number:  
TAG: none  
S/N: 5437969-5GF  
Name of equipment: Weighbridge Date: 27/06/2014



Unique reference number: S/N 6404010868

Name of equipment: Level transmitter



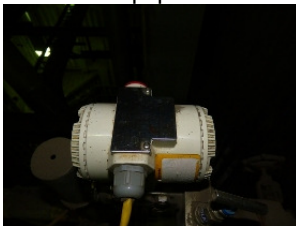
**Parameter 9:** Quantity of fuel type  $i$  combusted in process  $j$  during the year  $y$   $FC_{i, \text{Project Plant}, y}$   
Date: 27/06/2014

Unique reference number:

TAG: 463-PT-0106

S/N: 6403015456

Name of equipment: Pressure transmitter



**Parameter 13:** Baseline process heat generation in year  $y$  ( $HC_{BL,y}$ )

Date: Date: 27/06/2014

Unique reference number:

TAG: 463-TT-0110

S/N: 458205

Name of equipment: Temperature transmitter



**Parameter 13:** Baseline process heat generation in year  $y$  ( $HC_{BL,y}$ )

Date: 27/06/2014

Unique reference number:

TAG: 463-FT-0402

S/N: 6403015454

Name of equipment: Steam flow meter



**Parameter 13:** Baseline process heat generation in year  $y$  ( $HC_{BL,y}$ )

Date: 27/06/2014

Unique reference number:  
TAG: 463-PT-0403  
S/N: 6403015460  
Name of equipment: Pressure transmitter



**Parameter 13:** Baseline process heat generation in year y ( $HC_{BL,y}$ )

Date: 27/06/2014

Unique reference number:  
TAG: 463-TT-0406  
S/N: 458156  
Name of equipment: Temperature transmitter



**Parameter 13:** Baseline process heat generation in year y ( $HC_{BL,y}$ )

Date: 27/06/2014

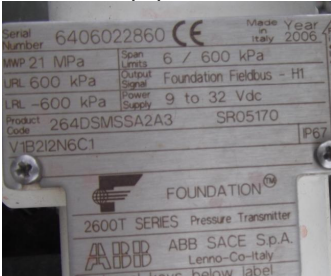
Unique reference number:  
TAG: 465-FT-9027  
S/N: 8809  
Name of equipment: Steam flow meter



**Parameter 13:** Baseline process heat generation in year y ( $HC_{BL,y}$ )

Date: 27/06/2014

Unique reference number:  
TAG: 565-FT-0965  
S/N: 6406022860  
Name of equipment: Steam flow meter



**Parameter 13:** Baseline process heat generation in year y ( $HC_{BL,y}$ )

Date: 27/06/2014

Unique reference number:  
TAG: 465-PIT-9000-A  
S/N: 6404008677  
Name of equipment: Pressure transmitter



**Parameter 13:** Baseline process heat generation in year y ( $HC_{BL,y}$ )

Date: 27/06/2014

Unique reference number:  
TAG: 465-PIT-9000-B  
S/N: 6404008676  
Name of equipment: Pressure transmitter



**Parameter 13:** Baseline process heat generation in year y ( $HC_{BL,y}$ )

Date: 27/06/2014

Unique reference number:  
TAG: 465-TT-9028  
S/N: 456397  
Name of equipment: Temperature transmitter



**Parameter 13:** Baseline process heat generation in year y ( $HC_{BL,y}$ )

Date: 27/06/2014

Unique reference number:  
TAG: 465-FT-9025  
S/N: 8808  
Name of equipment: Steam flow meter re transmitter



**Parameter 13:** Baseline process heat generation in year y ( $HC_{BL,y}$ )

Date: 27/06/2014

Unique reference number:  
TAG: 465-PIT-9001-A  
S/N: 6404008680  
Name of equipment: Pressure transmitter



**Parameter 13:** Baseline process heat generation in year y ( $HC_{BL,y}$ )

Date: 27/06/2014

Unique reference number:  
TAG: 465-PIT-9001-B  
S/N: 6404022864  
Name of equipment: Pressure transmitter



**Parameter 13:** Baseline process heat generation in year y ( $HC_{BL,y}$ )

Date: 27/06/2014. Note: Although this is not included in the Monitoring Report because it falls outside the Monitoring Period, a photo of it is provided here as it was witnessed during the site visit and replaced S/N 6404008679

Unique reference number:  
TAG: 465-TT-9026  
S/N: 456304  
Name of equipment: Temperature transmitter



**Parameter 13:** Baseline process heat generation in year y ( $HC_{BL,y}$ )

Date: 27/06/2014

Unique reference number:  
TAG: 465-FT-9019  
S/N: 34310  
Name of equipment: Steam flow Meter



**Parameter 13:** Baseline process heat generation in year y ( $HC_{BL,y}$ )

Date: 27/06/2014



Unique reference number:  
TAG: 465-FT-9023  
S/N: 24439  
Name of equipment: Steam flow Meter



**Parameter 13:** Baseline process heat generation in year y ( $HC_{BL,y}$ )

Date: 27/06/2014

Unique reference number:  
TAG: 462-FT-9150  
S/N: 6404006181  
Name of equipment: Steam flow Meter



**Parameter 13:** Baseline process heat generation in year y ( $HC_{BL,y}$ )

Date: 27/06/2014

Unique reference number:  
TAG: 465-PIT-9002-A  
S/N: 6408023636  
Name of equipment: Pressure Transmitter



**Parameter 13:** Baseline process heat generation in year y ( $HC_{BL,y}$ )

Date: 27/06/2014

Unique reference number:  
TAG: 465-PIT-9002-B  
S/N: 6404027440  
Name of equipment: Pressure transmitter



**Parameter 13:** Baseline process heat generation in year y ( $HC_{BL,y}$ )

Date: 27/06/2014



Unique reference number:  
TAG: 465-PIT-9002-C  
S/N: 6404008681  
Name of equipment: Pressure transmitter



**Parameter 13:** Baseline process heat generation in year  $y$  ( $HC_{BL,y}$ )

Date: 27/06/2014

Unique reference number:  
TAG: 465-TT-9024  
S/N: 456395  
Name of equipment: Temperature transmitter



**Parameter 13:** Baseline process heat generation in year  $y$  ( $HC_{BL,y}$ )

Date: 27/06/2014

Unique reference number:  
TAG: 468-PM-008  
S/N: PB-1210A067-11



Name of equipment: Energy Meter

**Parameter 14:** Gross quantity of electricity generated in all power plants which are located at the project site and included in the project boundary in year  $y$  (MWh) ( $EL_{PJ,gross,y}$ )

Date: 27/06/2014

Unique reference number:  
TAG: 468-PM-006  
S/N: PB-1210A467-11  
Name of equipment: Energy Meter



**Parameter 15:** Project electricity imports from the grid in year  $y$  (MWh) ( $EL_{PJ,imp,y}$ )

Date: 27/06/2014

Unique reference number:  
TAG: 468-PM-003  
S/N: PB-1210A504-11  
Name of equipment: Energy Meter



**Parameter 16:** Total auxiliary electricity consumption required for the operation of the power plants at the project site in year y.(MWh)  
Date: 27/06/2014

Unique reference number:  
S/N B235265966  
Name of equipment: Electronic Moisture Analyzer



**Parameter 18:**% Water content in mass basis in wet biomass residues (Moisture content of the biomass residues)  
Date: 27/06/2014

It is worth noting that the photographs of the following meters are not included in this section because they were not installed at the time of the site visit, as they had been replaced as part of the PP's maintenance programme, before the site visit:

- Weighbridge S/N 5437967-5GF
- Pressure meter S/N 6404008685
- Pressure Transmitter S/N 6404008679
- Electronic Moisture analyser S/N 17302238
- Energy meter, S/N PB-0401A161-11
- Energy meter, S/N PB-0401A178-11
- Energy meter, S/N PB-0607A312-11

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