



Voluntary Carbon Standard Version 2007
Verification Report Template

19 November 2007

Verification Report: BRAZIL-VER/03004/2010-SPL - Version 02

Name of Verification company:	Date of the issue:
BUREAU VERITAS CERTIFICATION HOLDING – SAS	28/06/2011
Report Title:	Approved by:
3 rd Verification of NOBRECCEL Biomass energy project	Paulo Abreu & Rubens Ferreira – Internal Technical Reviewers
Client:	Project Title:
EcoSecurities Brasil Ltda.	NOBRECCEL Biomass energy project
Summary:	
<i>BUREAU VERITAS CERTIFICATION has made the verification of the NOBRECCEL Biomass energy project, in the municipality of Pindamonhangaba, State of São Paulo, in Brazil.</i> <i>The verification scope is defined as a periodic independent and objective review and an ex post determination of the monitored reductions in GHG emissions during the defined verification period and consisted of the following three phases: i) desk review of the project design, baseline and monitoring plan; ii) follow-up interviews with project stakeholders; and iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using BUREAU VERITAS CERTIFICATION internal procedures.</i>	

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The first output of the verification process is a list of Clarification and Corrective Action Requests (CLs and CARs), presented in the Verification Protocol. Taking into account this output, the project proponent revised its monitoring report documentation. In summary, it is BUREAU VERITAS CERTIFICATION's opinion that the project activity correctly applies the baseline and monitoring methodology ACM0006 - "Consolidated baseline methodology for grid-connected electricity generation from biomass residues" version 06 and meets the relevant VCS requirements and local legislation.

As the result of the 3rd periodic verification, the verification team confirms that the GHG emission reductions are calculated without material misstatements, in a conservative and appropriate manner. BUREAU VERITAS CERTIFICATION herewith confirms that the project activity has achieved 158,625 tCO₂e of emission reductions, in the monitored period of 01/11/2008 to 30/04/2010.

Work carried out by:	Number of pages:
Marcelo Porto - Team leader Antonio Daraya - Team member	45

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1 Introduction

1.1 Objective

Verification is the periodic independent assessment and the ex post determination of the monitored reductions in GHG emissions during defined a verification period.

The objective of this assessment is to:

- Ensure that the project activity has been implemented and operated as per the registered PD and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place;*
- Ensure that monitoring report provided is complete;*
- Ensure that actual monitoring systems and procedures comply with the description in the monitoring plan and approved methodology; and*
- Evaluate the data recorded and stored as per the monitoring methodology.*

The verification shall consider both quantitative and qualitative information on emission reductions. Quantitative data comprises the monitoring reports submitted to the verification team by the project entity.

Qualitative data comprises information on internal management controls, calculation procedures and procedures for transfer, frequency of emissions reports, review and internal audit of calculations/data transfers.

The verification is based on criteria set by VCS - Voluntary Carbon Standard version 2007.1.

1.2 Scope and Criteria

The verification scope is an independent and objective assessment of the monitoring report and the supporting documents related to the monitored period. The information in these documents is assessed against the registered VCS PD, the applicable methodology and the VCS - Voluntary Carbon Standard version 2007.1.

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

project monitoring towards reductions in the GHG emissions.

1.3 VCS project Description

The project is a cogeneration project developed by Nobrecel S.A. Celulose e Papel, in the municipality of Pindamonhangaba, State of São Paulo, in Brazil. The project activity consists of renewable energy generation, using a new wood biomass residue boiler and an 8 MW generation set. At the same time, the project activity replaces fuel-oil-fired boilers and reduces the consumption of grid electricity. Additionally, biomass utilization avoids the dumping and decay of the residues.

1.4 Level of assurance

During the verification process, the GHG team assessed the monitoring report, the calculation spreadsheets and supporting documents.

Based on this assessment, the verification team can express a reasonable level of assurance, stating that the GHG emission reductions:

- *Are materially correct and is a fair representation of the GHG data, and*
- *Are prepared in accordance with the relevant International Standard on GHG quantification, monitoring and reporting, and with relevant national standards.*

2 Methodology

The verification consisted of the following steps:

- *A desk review of the VCS PD, of the monitoring report and supporting documents, with the use of the relevant sections of a customized protocol, according to VCS 2007.1;*
- *On-site assessment;*
- *Background investigation and follow-up interviews with personnel of the project developer; and*
- *Verification reporting (draft and final versions).*

The verification of the 3rd monitoring period of the project activity has occurred as follows:

Initial document review: 08/07/2010 – 12/07/2010

Site visit: 14/07/2010

Draft reporting: 16/07/2010 – 20/08/2010

Final verification reporting: 10/06/2011 & 13/06/2011

Interviewed persons are listed in Section 5.

3 Verification Findings

3.1 Remaining issues, including any material discrepancy, from previous verification

There are no remaining issues from previous verification.

3.2 Project Implementation

Project activity became operational in 01/11/2001 and the 10-year crediting period started in 01/01/2002. The total emission reductions estimated for such period is 802,335 tCO₂e.

The following verifications have already been made:

- 1st Periodic Verification: from 01/01/2002 to 31/12/2007, with total emission reductions of 388,452 tCO₂e; and*
- 2nd Periodic Verification: from 01/01/2008 to 31/10/2008, with total emission reductions of 85,057 tCO₂e.*

No changes in major equipments have occurred and the project activity has been operated in accordance with registered PD, except for the following:

- Calculations of $BE_{CH_4, SWDS, y}$ have considered a value of 43% for data/parameter DOC_j , whereas registered PD states 50%. As the moisture content of the biomass is not assessed, the value for wet biomass (43%) needs to be used. Due to conservativeness of the use of the wet biomass value and to the fact that registered PD, under Section B.7.1, states the use of biomass residues on a wet basis, the DOE has considered it acceptable.*
- No stock records are kept for biomass residues, whereas registered PD states, for $BF_{k, y}$, that the average monthly consumption is based on the difference of initial and final amount of biomass in the storage area, plus the amount of biomass delivered to the storage area. Since the daily stock is very low (just a few tonnes) and is consumed in the next day, the stock is negligible. Thus, considered to be zero, and no record is kept. For this reason, the DOE has considered it acceptable.*

Registered PD, previous monitoring reports and additional relevant documents can be accessed at <https://vcsprojectdatabase1.apx.com/myModule/Interact ive.asp?Tab=Projects&p=78&lat=%2D22%2E90214&lon=%2D45%2E39314>, within VCS Project Database.

3.3 Completeness of Monitoring

As per registered PD, Section B.6.1, emission reductions are calculated as follows:

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

As per registered PD, Section B.6.3:

Project emissions are calculated as follows:

$$PE_y = PET_y + PEFF_y + GWP_{CH_4} \times PE_{\text{biomass},CH_4,y}$$

Emission reductions due to displacement of electricity are calculated as follows:

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

Emission reductions or increases due to displacement of heat are calculated as follows:

$$ER_{\text{heat},y} = (Q_y \times EF_{CO_2,BL,heat,i}) / \square_{\text{boiler}}$$

There is no leakage.

Data and parameters that were available at validation have been correctly applied, as per registered PD, Section B.6.2.

Data and parameters monitored have been correctly applied, as per registered PD, Section B.7.1, but for the accepted and approved deviations described in Section 3.2 of this report. The following data and parameters have been monitored (identified in the same manner as they are listed in the registered PD):

$BF_{k,y}$

$EG_{\text{project plant},y}$

$EG_{\text{total},y}$

$Q_{\text{project plant},y}$

$Q_{\text{total},y}$

W_x

AVD_y

TL_y

F

GWP_{CH_4}

$EF_{CO_2,BL,heat,i}$

$EC_{\text{shredder/chopper}}$
 $EF_{\text{CO}_2, \text{FF}, j}$
 $FF_{\text{project plant}, i, y}$
 $FF_{\text{project site}, i, y}$

Actual values are as per calculation spreadsheets
"Nobrecel Biomass – WB PV3 011108 – 300410" version
03.

Values have been assessed based on a comprehensive
set of documents, listed in Section 5 of this report.

Biomass boiler's flow meter BIOFT-002 has been
calibrated (cert. CAL-B655/09, valid until
28/08/2010). Truck weighing scale WI-ROD-1-I-501 has
been calibrated (cert. 857229, valid until
25/11/2010). Woodward's MFR3 multi function relays
(electricity meters) are not calibrated, as per
manufacturer's specifications.

The DOE concludes that the monitoring methodology has
been completely and correctly applied in the course
of this 3rd monitored period.

3.4 Accuracy of Emission Reduction Calculations

All necessary data and parameters foreseen in the
registered PD to be monitored were available to the
DOE.

During the verification procedure, inconsistencies
were found, regarding the accuracy of the emission
reduction calculations. See findings on Part 4 of VCS
Verification Protocol, Table 1. All issues raised
have been successfully addressed by the project
participants.

3.5 Quality of Evidence to Determine Emission Reductions

The quality of the evidence provided by project
participants to determine emission reductions has
been considered to be of sufficient quantity and
appropriate quality.

During the verification procedure, inconsistencies
were found, regarding the evidence provided by the
project participants to determine the emission
reductions. For more details, see CARs and CLs listed
in the Verification Protocol (Section 7). All
clarifications have been provided and corrective
action requests successfully addressed.

3.6 Management and Operational System

The responsibilities and authorities for monitoring and reporting have been found to be in accordance with the monitoring plan, in the registered PD.

4 Verification conclusion

EcoSecurities Brasil Ltda. has commissioned BUREAU VERITAS CERTIFICATION to carry out the 3rd periodic verification of "NOBRECEL Biomass energy project", in light of the relevant VCS requirements. The project at the same time replaces fuel-oil-fired boilers and reduces the consumption of grid electricity. Additionally, biomass utilization avoids the dumping and decay of residues. This verification covers the period from 01/11/2008 to 30/04/2010.

In the course of the verification, 18 CARs and 16 CLs were raised and have been successfully closed. No FAR has been raised. This report is based on Monitoring Report version VER 78-M3, dated 20/06/2011, on registered PD version 01, dated 19/11/2007, on calculation spreadsheets version 03 and on supporting documentation made available to the DOE.

As a result of this verification, the BUREAU VERITAS CERTIFICATION confirms that:

- The project is implemented as planned and described in the registered PD. The monitoring plan is in place and the project is generating GHG emission reductions;*
- The monitoring plan is in accordance with the applied approved methodology ACM0006 - "Consolidated baseline methodology for grid-connected electricity generation from biomass residues" version 06;*
- The monitoring system is in place and operational;*
- The GHG emission reductions are calculated without material misstatements; and*
- In relation to the project's GHG emissions, the resulting GHG emission reductions are consistent with registered PD version 01, dated 19/11/2007, and calculation spreadsheets version 03.*

BUREAU VERITAS CERTIFICATION treats, in a confidential manner, all data and information used during the course of the verification procedure.

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We conclude this verification report, confirming the following information:

Reporting period: From 01-11-2008 to 30-04-2010
Verified emission in the above reporting period:

<i>Project emissions</i>	<i>3,347</i>	<i>t CO₂ equivalents</i>
<i>Baseline emissions</i>	<i>94,973</i>	<i>t CO₂ equivalents</i>
<i>Emission reductions</i>	<i>158,625</i>	<i>t CO₂ equivalents</i>

Vintage data:

In 2008

<i>Project emissions</i>	<i>277</i>	<i>t CO₂ equivalents</i>
<i>Baseline emissions</i>	<i>8,825</i>	<i>t CO₂ equivalents</i>
<i>Emission reductions</i>	<i>16,688</i>	<i>t CO₂ equivalents</i>

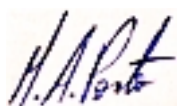
In 2009

<i>Project emissions</i>	<i>2,342</i>	<i>t CO₂ equivalents</i>
<i>Baseline emissions</i>	<i>62,501</i>	<i>t CO₂ equivalents</i>
<i>Emission reductions</i>	<i>104,173</i>	<i>t CO₂ equivalents</i>

In 2010

<i>Project emissions</i>	<i>728</i>	<i>t CO₂ equivalents</i>
<i>Baseline emissions</i>	<i>23,647</i>	<i>t CO₂ equivalents</i>
<i>Emission reductions</i>	<i>37,764</i>	<i>t CO₂ equivalents</i>

Rio de Janeiro, June 28th 2011



Marcelo Porto
Team Leader



Paulo Abreu



Rubens Ferreira

Internal Technical Reviewers

5 References

Relevant documents provided by NOBRECEL:

- *Registered PD version 01, dated 19/11/2007;*
- *Monitoring report version 01 (VER 78-M1), dated 11/06/2010;*
- *Monitoring report version 02 (VER 78-M2), dated 04/11/2010;*
- *Monitoring report version 03, dated 30/03/2011;*
- *Monitoring report version 04 (VER 78-M3), dated 20/06/2011;*
- *Calculation spreadsheets "Nobrecel Biomass - WB PV3 011108 - 300410" version 01;*
- *Calculation spreadsheets "Nobrecel Biomass - WB PV3 011108 - 300410" version 02;*
- *Calculation spreadsheets "Nobrecel Biomass - WB PV3 011108 - 300410" version 03;*
- *Letter to CETESB, dated 16/10/2009, regarding environmental monitoring requirement, related to operation license 3002479;*
- *Operation license 3002479, valid until 30/11/2009;*
- *Operation license 3003162, valid until 22/12/2011;*
- *Brazilian National Waters Agency - ANA's Resolution 564, dated 17/08/2009, valid until 23/07/2018;*
- *Diagram of steam and energy generation balance;*
- *Equipments pictures book, dated 05/10/2009;*
- *Procedure for monitoring the project activity v11;*
- *Landfill operators consultation letter, dated 14/02/2011;*
- *Electricity meters specifications - MFR3;*
- *Boiler inspection report NRI 01027/09 (R);*
- *Equipalcool (biomass boiler manufacturer) technical report, dated 03/02/2011;*
- *Table of equipments IDs v01;*
- *Table of equipments IDs v02;*
- *Instrument and calibration form 378 - CRQ boiler flow meter (calibration date: 28/08/2009);*
- *Instrument and calibration form 913 - Biomass boiler flow meter (calibration date: 28/08/2009);*
- *Instrument and calibration form 1088 - truck weight scale (calibration date: 25/11/2009);*
- *Daily report/Recovery and Utilities - monthly reports on steam of the project activity and CRQ boilers;*
- *Energy generators meters 1 and 2 - monthly reports on electricity generation by the 8 MW and 3.2 MW generators;*

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- Reports on biomass quantities (“Entrada de Madeira Energia”, “Entrada de Biomassa Compras” and “Consumo de Biomassa UNC”);
- *Training record of Bruna Rossi on monitoring of MDL projects, dated 08/10/2009;*
- *NOBRECEL’s monitoring input data sheet for MDL projects;*
- *Validation report SGS CCP.VOL0155 BR01;*
- *Verification report SGS CCP.VOL0155 BR01 (1st monitoring period); and*
- *Verification report SGS CCP.VOL0155 BR01 MP2 (2nd monitoring period).*

Interviewed persons:

- *Thiago Viana – EcoSecurities Brasil Ltda.*
- *Hélio Laubenheimer – EcoSecurities Brasil Ltda.*
- *Bruna Rossi – Nobrecel S.A. Celulose e Papel*

6 Verifiers' CVs

BUREAU VERITAS CERTIFICATION GHG verifier - Team leader

Marcelo Porto - Qualified as Lead GHG Verifier, he is graduated in Electrical Engineering, with a graduate specialization in Quality Engineering and a Master's degree in Industrial Engineering. Quality management expert and auditor, he worked in the electro-electronic, mechanical, medical devices, leather and shoes industries. ISO 9001 and SA8000 auditor, he is also trained as ISO 14001 and OHSAS 18001 lead auditor.

BUREAU VERITAS CERTIFICATION GHG verifier - Team member

Antonio Daraya - Qualified as Lead GHG Verifier, he is graduated in Chemical Engineering, experienced in Industrial and Environmental management, in several industrial fields. He is ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007 Lead Auditor and has also experience in the implementation of Quality and Environmental Management Systems.

BUREAU VERITAS CERTIFICATION GHG verifier - Internal technical reviewer

Paulo Abreu - Is graduated in Industrial Engineering Mechanics, with experience in the area of Mechanical Engineering, with emphasis on thermal engineering in the process of drying and carbonization of biomass, including charcoal research and production, determination of moisture of wood, automation of carbonization furnaces, charcoal physical chemical analysis. He has also experience in the use of charcoal in the metallurgy and Industry.

BUREAU VERITAS CERTIFICATION GHG verifier - Internal technical reviewer

Rubens Ferreira - Qualified as Lead GHG Verifier, he is graduated in Chemical Engineering, experienced in Quality and Environmental management in glass industries. He is ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007 Lead Auditor and has also experience in the implementation of Environmental Management Systems.

7 VCS Verification protocol

Table 1 Verification requirements based on the Clean Development Mechanism Validation and Verification Manual (EB55 Annex1)

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
1 Project implementation in accordance with the registered project design document					
It is assessed if there are any concerns related to the conformity of the actual project activity and its operation with the registered project design document	VVM	195			
a Are all physical features of the proposed CDM project activity proposed in the registered PDD in place?	VVM	196	An on-site visit has been conducted on 14/07/2010, to assess whether all the physical features of the VCS project are in place and that the Project Participants have been operating the project activity as per the registered PD. CAR01 – Registered PD mentions the installation of an “8 MW turbine”, whereas an 8.6 MW turbine is operating in the project plant. CAR02 – Registered PD states “The biomass boiler has a 60 t/h nominal steam production capacity, whereas its technical data plate indicates it has a 75 t/h capacity, as of 2007. Boiler inspection report NRI 01027/09 (R) states it is in condition to safely operate with a steam production capacity of 75.000 kg/h. Boiler’s technical data plate indicates 60 t/h in 2001 and 75 t/h in 2007.	CAR01 CAR02	OK
b Have the project participants operated the	VVM	196	Refer to CAR01 and CAR02 .	CAR01	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
proposed CDM project activity as per the registered PDD?			CL01 – Please, explain, in details, the destination of each of the four boilers that have been replaced, since the information provided during the site visit is that some of them are still in operation, out of the project activity site, after being sold to third parties. Besides, one of the boilers is still in the project activity site, but has been deactivated. CL02 – As an old generating unit of 3.2 MW is still installed, please, clarify under which conditions it operates and provide evidence that its operation during the monitored period has not increased the emission reductions being claimed.	CAR02 CL01 CL02	
c Was an on-site visit conducted?	VVM	196	Yes. On 14/07/2010.	OK	OK
d If not, justify the rationale of the decision.	VVM	196	N/A	OK	OK
e Does the implementation or operation of CDM project activity conform with the description contained in the registered PDD?	VVM	197	No. Refer to CAR01 , CAR02 , CL01 and CL02 .	CAR01 CAR02 CL01 CL02	OK
f If not, which are the potential impacts due to these changes, according to the relevant guidelines established by the Executive Board (EB48-§73)?	VVM	197	CAR03 – As the project activity boiler had its steam production capacity increased from 60 t/h to 75 t/h, there is a potential for the incorrect inclusion, in the value of $EG_{\text{project plant},y}$ of the electricity generated in addition to what would have been generated if such capacity was still limited to 60 t/h, as per the registered PD.	CAR03	OK
g Was a notification or a request for approval of changes from the project activity as described in the registered PDD submitted prior to the conclusion of the verification/certification for the	VVM	197	Not yet, because this 3 rd Verification is still being carried out. Refer to CAR01 to CAR03 and CL01 to CL02 .	CAR01 to CAR03 CL01	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
corresponding?				CL02	
2 Compliance of the monitoring plan with the monitoring methodology					
It is assessed if the monitoring plan of the proposed CDM project activity complies with the applied methodology	VVM	199			
a Is the validated monitoring plan in accordance with the approved methodology applied by the proposed CDM project activity?	VVM	200	CL03 – Please, explain the origin of the following data/parameters values. Make it clear when calculations have been made and be specific/detailed when other data sources have been used. a. $Q_{\text{biomass,historic,3yr}}$: 85 467 b. DOC_j: 50% c. $EF_{\text{CH}_4,\text{BF}}$: 41.1 kg CH₄/TJ d. W_x: 106 183 t e. $EF_{\text{km,CO}_2,y}$: 0.00053 tCO₂/km f. $NCV_{\text{fuel oil}}$: 40.1514 GJ/t g. $\varepsilon_{\text{boiler}}$: 85% h. $BF_{k,y}$: 132 245 i. $EG_{\text{project plant},y}$: 19 703 MWh/yr j. $EG_{\text{total},y}$: 20 673 MWh/yr k. $Q_{\text{project plant},y}$: 377 489 l. $Q_{\text{total},y}$: 685 684 m. $EF_{\text{CO}_2,\text{BL,heat}}$: 3.1064 tCO₂/ton fuel n. $EF_{\text{CO}_2,\text{FF},i}$: 0.0774 tCO₂/GJ o. $FF_{\text{project plant},i,y}$: 0 t p. $FF_{\text{project site},i,y}$: 59 t	CL03	OK
b If no, was a request for revision of the monitoring plan was done? (The DOE may request for revision of the monitoring plan covering the monitoring period under verification, for approval	VVM	201	No. Refer to CL03 .	CL03	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
by the CDM Executive Board)					
c Are there any monitoring aspects of the project activity that are not specified in the methodology, particularly in the case of small-scale methodologies (e.g. additional monitoring parameters, monitoring frequency and calibration frequency)?	VVM	202	No.	OK	OK
3 Compliance of monitoring with the monitoring plan					
It is assessed if monitoring of reductions in GHG emissions to result from the proposed CDM project activity is implemented in accordance with the monitoring plan contained in the registered PDD or the accepted revised monitoring plan	VVM	204			
a Have the monitoring plan and the applied methodology been properly implemented and followed by the project participants?	VVM	205	No. Refer to CL03 .	CL03	OK
b Have all parameters stated in the monitoring plan, the applied methodology and relevant CDM Executive Board decisions been sufficiently monitored and updated as applicable, including:	VVM	205	CAR04 – The monitoring report, dated 11/06/2010, presents some data/parameters identifications and/or units with incorrect subscripts (wrong, missing, not written as subscript). Examples: $EF_{CO2,FF,j}$, $EF_{CO2,BL,heat,j}$, tCO_2 / km, tCH_4 / t biomass, tCO_2 / MWh, k_j, ϵ boiler, W_j,k, $Q_{project\ plant}$ and EG_{total}. CAR05 – The monitoring report, dated 11/06/2010, presents some data/parameters with incorrect units. Examples: $EF_{CH4,BF}$ and $EF_{burning,CH4,k,y}$.	CAR04 CAR05	OK
i Project emission parameters?	VVM	205	CL04 – Please, explain how the quantities of biomass combusted in the project activity boiler	CAR06 CL04	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			during the operation of the 3.2 MW generator (which is not included in the project activity) have been taken into account in the monitoring of $BF_{k,y}$. Additionally, inform, with evidences, whether the operation of the 3.2 MW generator has occurred when the 8 MW generator was also operating. CL05 – During the site visit, it has been verified that two equipments are used for chopping wood. Only equipment model TRB 08-S 1800x2200 serial number M1066 was available to have its technical data plate checked at the time. It is a 160 kW equipment. Please, provide picture of the technical data plate of the other chopping equipment, including information on its power (kW) and explain the value of 200 kW for “Installed Capacity Chopper”, shown in the calculation spreadsheets. CAR06 – The monitoring report, dated 11/06/2010, mentions an emission factor “EFFUEL” which is not named as such in the registered PD nor in the calculation spreadsheets. CL06 – Please, explain how data of “Medições Energia Geradores 1 e 2 – Mensal” report is generated.	CL05 CL06	

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii Baseline emission parameters?	VVM	205	CAR07 – The monitoring report, dated 11/06/2010, presents a duplicated description of $BE_{CH_4,SWDS,y}$. CL07 – Please, explain why has the default value of 0.0027 t CH₄/t biomass (provided by ACM0006 version 6) been used for the product of NCV_k and $EF_{burning,CH_4,k,y}$. Additionally, explain how this default value, corrected by the conservativeness factor of 0.73, relates to the values of NCV_k and $EF_{burning,CH_4,k,y}$ presented in Annex A of the monitoring report. CL08 – Please, explain how the monitored steam produced by the new boiler had its data unit transformed from GJ to MWh.	CAR07 CL07 CL08	OK
iii Leakage parameters?	VVM	205	Refer to CL01 .	CL01	OK
iv Management and operational system: the responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan?	VVM	205	Yes.	OK	OK
c Is the accuracy of equipment used for monitoring in accordance with the relevant guidance provided by the CDM Executive Board and are equipment controlled and calibrated in accordance with the monitoring plan?	VVM	205	The steam production meters (1 for the biomass boiler and 1 for the black liquor boiler) have been duly calibrated in 2008 and 2009 and their last calibration, in 28/8/2009, is still valid. The truck weight scale has been duly calibrated in 2008, 2009 and 2010 and its last calibration, in 04/06/2010, is still valid. CAR08 – There is no evidence that the energy	CAR08 CAR09	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			meters have been calibrated. CAR09 – There are discrepancies in the identification of the equipment used for monitoring. Examples: - BIOFT002 (document “Tabela de Equipamentos) x BIOFC002 (Biomass boiler steam meter’s “Instrument and Calibration Form N° 913”) - WI007 (document “Tabela de Equipamentos) x WI-ROD-1-I-501 (Truck weight scale’s “Instrument and Calibration Form N° 1088”) - ABB serial number 13550690 (document “Tabela de Equipamentos), whereas no energy meter was in place for the 3.2 MW generator. - TGM serial number 13335762 (document “Tabela de Equipamentos) x serial number 13550690 0306 (found in place, during site visit.)		

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i Are monitoring results consistently recorded as per approved frequency?	VVM	205	Refer to CL12 .	CL12	OK
ii Have quality assurance and quality control procedures been applied in accordance with the monitoring plan?	VVM	205	Refer to CAR08 , CAR14 , CL03 and CL05 . CL09 – Please, explain how the QA/QC procedures for $BF_{k,y}$, W_x and $FF_{project\ plant,i,y}$ have been carried out during the monitored period. CL10 – For data parameter “f”, please, provide evidence of interviews on an annual basis with the landfill operator of Pindamonhangaba.	CAR08 CAR14 CL03 CL05 CL09 CL10	OK
4 Assessment of data and calculation of greenhouse gas emission reductions					
It is assessed if GHG emission reductions achieved by / resulting from the proposed CDM project activity are calculated applying the selected methodology	VVM	207			
a Is a complete set of data for the specified monitoring period is available? (If no, i.e., only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, the DOE shall opt to either make the most conservative assumption theoretically possible in finalizing the verification report, or raise a request for deviation prior to submitting request for issuance, if appropriate).	VVM	208	CL11 – Please, explain how energy generation data has been recovered in October 2009, when a problem occurred in the computerized surveillance system. CAR10 – The monitoring report, dated 11/06/2010, states “The calculated emission reduction is summarized in Annex A [...]”, whereas Annex B presents such information. CL12 – Please, provide a complete set of data for the monitored period, relevant to: - Monthly reports, with daily information (“Boletim diário/Recuperação e Utilidades”),	CAR10 CL11 CL12	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			on steam of the project activity and CRQ boilers, and of the blower (“soprador”); - Monthly reports, with daily information, on electricity generation by the 8 MW and 3.2 MW generators (“Medições Energia Geradores 1 e 2 – Mensal”); Biomass quantities (“Entrada de Madeira Energia”, “Entrada de Biomassa_Compras” and “Consumo de Biomassa UNC”).		

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
b Has information provided in the monitoring report been cross-checked with other sources such as plant log books, inventories, purchase records, laboratory analysis?	VVM	208	CL13 – Please, explain the concepts of “Eucalipto Processo Transferencia – TON”, “Eucalipto Processo OVER – TON” and “Eucalipto Energia – TON” used in “Entrada Biomassa” report.	CL13	OK
c Have calculations of baseline emissions, proposed CDM project activity emissions and leakage, as appropriate, been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document?	VVM	208	CL14 – Please, explain how “Our biomass” data/parameter has been measured. CL15 – Please, explain how the values of “Biomass transported (third parties)” and “Our biomass” have been calculated, using “Entrada Biomassa” and “Entrada de Madeira Energia” reports. CAR11 – Calculations of $BE_{CH_4,SWDS,y}$ have considered a value of 43% for data/parameter DOC_j (in “FOD” sheet), whereas registered PD and monitoring report, dated 11/06/2010, state 50%. CAR12 – Calculations of EG_y (in “VER calculation” sheet) do not comply with the monitoring plan, in the registered PD, neither with “Determination of EG_y” in the monitoring report, dated 11/06/2010. Besides, the calculation of $EG_{total,y}$ has not taken into consideration the fact that part of the electricity generated by the 3.2 MW generator is a result of the steam produced by the “black liquor” boiler, that does not fire the same types of biomass residues as in the project plant. CAR13 – The following data/parameters in “Reference data” sheet, of the calculation spreadsheets, present discrepant units, compared	CAR11 to CAR18 CL14 CL15 CL16	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			to registered PD and/or MR: $NCV_{fuel\ oil, BL}$, CO_2 Emission Factor fuel oil, $EF_{CO_2, BL, heat}$, $Q_{historic, 3yr}$, EF_{GRID}, TL_y, EF_{km, CO_2}, NCV_{diesel} and $FF_{project\ site}$. CAR14 – The following issues have to be addressed regarding data/parameters' values in "Reference data" sheet, of the calculation spreadsheets: - $\epsilon_{BL, boiler}$ (only the value should appear, without "%".) - $NCV_{fuel\ oil, BL}$ and NCV_{diesel} (rounding off issue and values not shown in the registered PD nor in the MR.) - $NCV_{biomass, BL}$ (value corresponds to GJ/kg; if this data/parameter is meant to be the NCV of the biomass residue type k, there is a discrepancy, compared to NCV_k in Annex A/MR.) - $Q_{biomass, historic, 3yr}$ and AVD_y (discrepant values, compared to registered PD and/or MR.) CAR15 – The following data/parameters in "Reference data" sheet, of the calculation spreadsheets, present a different identification, compared to the registered PD and/or MR: $\epsilon_{BL, boiler}$, $NCV_{fuel\ oil, BL}$, CO_2 Emission Factor fuel oil, $EF_{CO_2, BL, heat}$, $EF_{burning, CH_4, k}$, EF_{GRID}, EF_{km, CO_2}, CH_4		

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			emission factor (controlled burning), $FF_{\text{project site}}$ and BE_{biomass}. CAR16 – The following data/parameters in “Reference data” sheet, of the calculation spreadsheets, are not mentioned in the monitoring plan nor in the MR: Default Carbon Content fuel oil, $NCV_{\text{biomass,BL}}$, $Q_{\text{total,historic,3yr}}$, $FF_{\text{historic,3yr}}$, CO_2 Emission Factor historic,3yr, conservativeness factor, Diesel density, Default Carbon Content diesel and Truck consumption. CAR17 – NCV_{diesel} in “Reference data” sheet, of the calculation spreadsheets, is not mentioned in the monitoring plan. CAR18 – The value of cell C7 in “Reference data” sheet, of the calculation spreadsheets, reflects the conversion of kcal/kg to GJ/kg, instead of to GJ/t. CL16 – Please, clarify to which data/parameter, in the MR, “CO2 Emission Factor diesel” in “Reference data” sheet, of the calculation spreadsheets, corresponds to.		
d Have any assumptions used in emission calculations been justified?	VVM	208	Refer to CL06 .	CL06	OK
e Have appropriate emission factors, IPCC default values and other reference values been correctly applied?	VVM	208	Refer to CL03 .	CL03	OK

Table 2 Resolution of Corrective Action / Forward Action / Clarification Requests.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
CAR01 – Registered PD mentions the installation of an “8 MW turbine”, whereas an 8.6 MW turbine is operating in the project plant.	VVM 196	The nameplates EcoSecurities have shows the following: Turbine TGM OS 40211 – Power 7900/8600 kW Generator WEG 94250 – Power 8000 kW According to historical generation data, it is clear that the power unit (comprising both the turbine and the generator) has an 8MW installed capacity, as the project has never generated more than this in a given month. In the PD section A.4.3 it is correctly mentioned that “2. 1 Turbine manufactured by TGM and 1 generator WEG with an installed capacity of 8 MW;”. Therefore, there is no mistake in the technical description of the project. The passages in the PD that	<u>First analysis:</u> It is incorrect to state “there is no mistake in the technical description of the project”, since there is no 8 MW turbine installed. MR v02 does not yet correct it. Please, add explanation to MR in order to have this CAR closed. <i>CAR01 is not closed.</i> <u>Second analysis:</u> MR v03 includes requested explanation. CAR01 is closed.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
		mentions the 8MW turbine in fact means 8MW power unit. Proposed solution: include in details the tech description of the project in the MR, stating that the project has an 8MW power unit instead of an 8 MW turbine. This change and proposition does not affect at all the project itself. <u>Second response:</u> The parameter EG_{project plant} (Annex A of the monitoring report) was updated to explain this.	
CAR02 – Registered PD states “The biomass boiler has a 60 t/h nominal steam production capacity, whereas its technical data plate indicates it has a 75 t/h capacity, as of 2007. Boiler inspection report NRI 01027/09 (R) states it is in condition to safely operate with a steam production capacity of 75.000 kg/h. Boiler’s technical data plate indicates 60 t/h in 2001 and 75 t/h in 2007.	VVM 196	The boiler has indeed the capacity of operating with 75t/h. The inspection report mentions that it is safe to operate with this steam production. However, this is safe for the workers, meaning that there is no possibility of explosion. According to the information available for the assessor during the site visit, there are still several pieces of equipment to be	A technical report, dated 03/02/2011, from the manufacturer of the biomass boiler, clarifies the boiler is not able to operate at the intended 75 t/h steam production capacity and remains with 60 t/h. CAR02 is closed.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
		installed in the boiler. It can't be operated in an environmentally safe way, since there are several gas filtering systems missing. The environmental license for this project shows that it has a capacity of 60t/h, what corroborates this fact. Nobrecel is not allowed to operate with 75t/h and never did (historical records can be checked). Furthermore, a written statement from the boilers manufacturer that its operational capacity is 60 t/h will be submitted to the DOE. Moreover, this change will not affect the project. It can be stated in the MR as well, but the PD can't be changed.	
CAR03 – As the project activity boiler had its steam production capacity increased from 60 t/h to 75 t/h, there is a potential for the incorrect inclusion, in the value of $EG_{\text{project plant},y}$, of the electricity generated in addition to what would have been generated if such capacity	VVM 197	The boiler never operated with 75t/h, as information available during site visit. The company is not allowed to do so.	A technical report, dated 03/02/2011, from the manufacturer of the biomass boiler, clarifies the boiler is not able to operate at the intended 75 t/h steam production capacity and remains with 60 t/h.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
was still limited to 60 t/h, as per the registered PD.			CAR03 is closed.
CAR04 – The monitoring report, dated 11/06/2010, presents some data/parameters identifications and/or units with incorrect subscripts (wrong, missing, not written as subscript). Examples: $EF_{CO2,FF,j}$, $EF_{CO2,BL,heat,i}$, tCO_2 / km , $tCH_4 / t \text{ biomass}$, tCO_2 / MWh , k_j , ϵ_{boiler} , $W_{j,k}$, $Q_{\text{project plant}}$ and EG_{total} .	VVM 205	Monitoring Report has been corrected.	Corrections made to MR v02. CAR04 is closed.
CAR05 – The monitoring report, dated 11/06/2010, presents some data/parameters with incorrect units. Examples: $EF_{CH4,BF}$ and $EF_{\text{burning},CH4,k,y}$.	VVM 205	Monitoring Report has been corrected.	Data/parameters units have been correct in MR v02. CAR05 is closed.
CAR06 – The monitoring report, dated 11/06/2010, mentions an emission factor “EFFUEL” which is not named as such in the registered PD nor in the calculation spreadsheets.	VVM 205	The Monitoring report was corrected to show the correct parameter as $EF_{CO2,BL,heat,i}$ as per the registered PD.	Correction made in MR v02. CAR06 is closed.
CAR07 – The monitoring report, dated 11/06/2010, presents a duplicated description of $BE_{CH4,SWDS,y}$.	VVM 205	Duplicated parameter removed and Monitoring Report updated.	Duplicated description of $BE_{CH4,SWDS,y}$ has been removed from MR v02. CAR07 is closed.
CAR08 – There is no evidence that the energy meters have been calibrated.	VVM 205	As explained to the validator during the site visit, the meters used by Nobrecel do not need to be calibrated according to the manufacturer's specification. A reference from the	Evidence from the meters manufacturer has been provided. CAR08 is closed.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
		manufacturer was made available to the DOE.	
CAR09 – There are discrepancies in the identification of the equipment used for monitoring. Examples: - BIOFT002 (document “Tabela de Equipamentos) x BIOFC002 (Biomass boiler steam meter’s “Instrument and Calibration Form N° 913”) - WI007 (document “Tabela de Equipamentos) x WI-ROD-1-I-501 (Truck weight scale’s “Instrument and Calibration Form N° 1088”) - ABB serial number 13550690 (document “Tabela de Equipamentos), whereas no energy meter was in place for the 3.2 MW generator. - TGM serial number 13335762 (document “Tabela de Equipamentos) x serial number 13550690 0306 (found in place, during site visit.)	VVM 205	The list with the description of each equipment used for the monitoring of the project activity has been updated.	Updated list with the description of the equipment used for monitoring has been provided. CAR09 is closed.
CAR10 – The monitoring report, dated 11/06/2010, states “The calculated emission reduction is summarized in Annex A [...]”, whereas Annex B presents such information.	VVM 208	Monitoring Report has been corrected.	Annex identification has been corrected in MR v02. CAR10 is closed.
CAR11 – Calculations of $BE_{CH_4,SWDS,y}$ have considered a value of 43% for data/parameter	VVM 208	The value of DOC_j used for the calculation of $BE_{CH_4,SWDS,y}$ is 43%	<u>First analysis:</u> MR v02 states 50% has been the value

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
DOC _j (in “FOD” sheet), whereas registered PD and monitoring report, dated 11/06/2010, state 50%.		because the humidity of the waste (biomass) is not measured, thus the most conservative approach is used. <u>Second response:</u> Footnote 1 was added in Annex A of the MR explaining this choice.	applied for data/parameter DOC_j, whereas 43% has been actually applied. There is no justification in MR v02 as to why this deviation exists, compared to registered PD. <i>CAR11 is not closed.</i> <u>Second analysis:</u> MR v03 presents explanation regarding value of DOC_j. CAR11 is closed.
CAR12 – Calculations of EG _y (in “VER calculation” sheet) do not comply with the monitoring plan, in the registered PD, neither with “Determination of EG _y ” in the monitoring report, dated 11/06/2010. Besides, the calculation of EG _{total,y} has not taken into consideration the fact that part of the electricity generated by the 3.2 MW generator is a result of the steam produced by the “black liquor” boiler, that does not fire the same types of biomass residues as in the project plant.	VVM 208	Calculations were updated in the Workbook according to the PD and Monitoring Report. Furthermore, the energy generation by the 3.2 MW turbine was removed from the calculations.	Calculations of EG _y have been updated. CAR12 is closed.
CAR13 – The following data/parameters in “Reference data” sheet, of the calculation spreadsheets, present discrepant units, compared to registered PD and/or MR: NCV _{fuel oil,BL} , CO ₂ Emission Factor fuel oil, EF _{CO2,BL,heat} ,	VVM 208	For TL _y , EF _{GRID, the} , FF _{project site} , EF _{km,CO2} , NCV _{fuel} , CO ₂ Emission Factor fuel oil, units used in the spreadsheet are in line with those in the PD and the MR.	Corrections made in “Reference data” sheet. CAR13 is closed.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
$Q_{\text{historic,3yr}}$, EF_{GRID} , TL_y , $EF_{\text{km,CO2}}$, NCV_{diesel} and $FF_{\text{project site}}$		NCV_{diesel}: Though there are discrepancies in the units of parameters mentioned in the reference data sheet, all values have been applied correctly using appropriate conversion factors. $Q_{\text{historic,3yr}}$: There is a typographical error in the WB. This has been corrected in the revised WB. However this does not impact the ER calculations as the value, mentioned is zero.	
CAR14 – The following issues have to be addressed regarding data/parameters' values in "Reference data" sheet, of the calculation spreadsheets: - $\epsilon_{\text{BL,boiler}}$ (only the value should appear, without "%".) - $NCV_{\text{fuel oil,BL}}$ and NCV_{diesel} (rounding off issue and values not shown in the registered PD nor in the MR.) - $NCV_{\text{biomass,BL}}$ (value corresponds to GJ/kg; if this data/parameter is meant to be the NCV of the biomass residue	VVM 208	- $\epsilon_{\text{BL,boiler}}$ (only the value should appear, without "%".) - The value mentioned in the WB is the same as that mentioned in the PD (i.e, with the "%". Furthermore, the value and the formulae in question have been correctly applied in the WB (i.e. The formula on page 32 of the PD refers to	Corrections made and explanations provided, regarding data/parameters' values in "Reference data" sheet. CAR14 is closed.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
type k, there is a discrepancy, compared to NCV_k in Annex A/MR.) - $Q_{\text{biomass,historic,3yr}}$ and AVD_y (discrepant values, compared to registered PD and/or MR).		efficiency expressed in percentage). - $NCV_{\text{fuel oil,BL}}$ and NCV_{diesel} (rounding off issue and values not shown in the registered PD nor in the MR.) - The values used are different from the PD values at decimal places. Further, the rounding up and rounding down are not consistently done. The values will be corrected and made consistent with the PDD in the next version of the WB. The values have now been corrected to be the same as in the PD. - $NCV_{\text{biomass,BL}}$ (value corresponds to GJ/kg; if this data/parameter is meant to be the NCV of	

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
		the biomass residue type k, there is a discrepancy, compared to NCV_k in Annex A/MR.) – There is a typographical error in the ‘units’ of NCV_k mentioned in the PDD. It should be read as $14.65 \times 10^{(-3)}$ GJ/tonne, which is in line with the GJ/Tonnes value mentioned in the WB. - $Q_{\text{biomass,historic,3yr}}$ and AVD_y (discrepant values, compared to registered PD and/or MR) - The value mentioned on tab ‘Reference data’ in the spread sheet is divided by 3 on tab ‘VER calculation’, Row number 4 to give an annual figure for $Q_{\text{biomass historic}}$. The calculation is	

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
		therefore correct. AVD_y: AVD is a monitored parameter and for this monitoring period, this value is calculated as 277km and now the same has been applied for calculating PE transportation. The value mentioned in the PD is the default value to be used in those cases only where this parameter is not monitored.	
CAR15 – The following data/parameters in “Reference data” sheet, of the calculation spreadsheets, present a different identification, compared to the registered PD and/or MR: $\epsilon_{BL,boiler}$, $NCV_{fuel\ oil,BL}$, CO_2 Emission Factor fuel oil, $EF_{CO2,BL,heat}$, $EF_{burning,CH4,k}$, EF_{GRID}, $EF_{km,CO2}$, CH4 emission factor (controlled burning), FF_{project site} and $BE_{biomass}$.	VVM 208	The WB has been revised and representation of all parameters has been made in line with that in the PD.	Identification of the data/parameters have been aligned with registered PD. CAR15 is closed.
CAR16 – The following data/parameters in “Reference data” sheet, of the calculation	VVM 208	Default Carbon Content fuel oil is not mentioned as a monitored	Explanation provided has clarified the issue.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
spreadsheets, are not mentioned in the monitoring plan nor in the MR: Default Carbon Content fuel oil, $NCV_{\text{biomass,BL}}$, $Q_{\text{total,historic,3yr}}$, $FF_{\text{historic,3yr}}$, CO2 Emission Factor historic,3yr, conservativeness factor, Diesel density, Default Carbon Content diesel and Truck consumption.		parameter in the PD, but is used to calculate CO ₂ Emission Factor fuel oil, which is a monitored parameter. Therefore, its presence in the WB is justified. $Q_{\text{total,historic,3yr}}$, $FF_{\text{historic,3yr}}$ are historic values and do not need to be monitored. $NCV_{\text{biomass,BL}}$ is the same as NCV_k mentioned in the PDD. The representation of the parameters is immaterial so long as the values do not change.	CAR16 is closed.
CAR17 – NCV_{diesel} in “Reference data” sheet, of the calculation spreadsheets, is not mentioned in the monitoring plan.	VVM 208	This value is used to calculate $EF_{\text{km,CO}_2}$, which is a parameter fixed at validation. The calculated value of $EF_{\text{km,CO}_2}$ is the same as that fixed at validation. Hence, there is no change in ER calculation because of this parameter. This parameter is included in the WB in order to transparently show how $EF_{\text{km,CO}_2}$ is calculated.	Explanation provided has clarified the issue. CAR17 is closed.
CAR18 – The value of cell C7 in “Reference data” sheet, of the calculation spreadsheets,	VVM 208	The conversion factor used has been corrected. However, it does	Correction made to the conversion of kcal/kg to GJ/t.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
reflects the conversion of kcal/kg to GJ/kg, instead of to GJ/t.		not impact the final ER calculations as the value in cell C3 on the same tab was multiplied by 10 ³ .	CAR18 is closed.
CL01 – Please, explain, in details, the destination of each of the four boilers that have been replaced, since the information provided during the site visit is that some of them are still in operation, out of the project activity site, after being sold to third parties. Besides, one of the boilers is still in the project activity site, but has been deactivated.	VVM 196	In the baseline scenario four boilers were used: 1- Conterma (fuelled with Biomass in the baseline): dismantled and is therefore not used anymore. 2- Menark (fuelled with Biomass in the baseline): sold to a third party and is now fuelled with biomass. 3- Sabroe (fuelled with Oil in the baseline): sold to a third party and is now fuelled with “tallow/fat”. 4- Ata (fuelled with Oil in the baseline): is at the Nobrecel plant but deactivated (this was seen during site visit).	Explanation provided, regarding the destination of each of the four boilers that have been replaced. CL01 is closed.
CL02 – As an old generating unit of 3.2 MW is still installed, please, clarify under which conditions it operates and provide evidence that its operation during the monitored period	VVM 196	The generated steam is only fed into one turbine. Thus, the TGM turbine (8MW) is used because its generation capacity is higher.	Clarification provided, regarding the operation of the 3.2 MW old generating unit. CL02 is closed.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
has not increased the emission reductions being claimed.		The plants actual consumption equals to 85 ton of steam per hour at its maximum cellulose and paper production. If the steam consumption is apportioned between both turbines the energy generation decreases significantly, thus turning this process inefficient.	
CL03 – Please, explain the origin of the following data/parameters values. Make it clear when calculations have been made and be specific/detailed when other data sources have been used. a. $Q_{\text{biomass,historic,3yr}}$: 85 467 b. DOC_j: 50% c. $\text{EF}_{\text{CH}_4,\text{BF}}$: 41.1 kg CH₄/TJ d. W_x: 106 183 t e. $\text{EF}_{\text{km,CO}_2,\text{y}}$: 0.00053 tCO₂/km f. $\text{NCV}_{\text{fuel oil}}$: 40.1514 GJ/t g. $\varepsilon_{\text{boiler}}$: 85% h. $\text{BF}_{\text{k,y}}$: 132 245 i. $\text{EG}_{\text{project plant,y}}$: 19 703 MWh/yr j. $\text{EG}_{\text{total,y}}$: 20 673 MWh/yr k. $Q_{\text{project plant,y}}$: 377 489 l. $Q_{\text{total,y}}$: 685 684 m. $\text{EF}_{\text{CO}_2,\text{BL,heat}}$: 3.1064 tCO₂/ton fuel	VVM 200	All these values are either monitored or fixed at validation or historic – The fixed values are: - b. - c. - e. - f. - g. - m. - n. The are historic values are - a. These are monitored values: - d.	Explanation on the origin of data/parameters values has been provided. CL03 is closed.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
n. $EF_{CO_2,FF,i}: 0.0774 \text{ tCO}_2/\text{GJ}$ o. $FF_{\text{project plant},i,y}: 0 \text{ t}$ p. $FF_{\text{project site},i,y}: 59 \text{ t}$		h. i. j. k. l. o. p. For details on the monitoring procedures for these parameters, please refer to the registered PD.	
CL04 – Please, explain how the quantities of biomass combusted in the project activity boiler during the operation of the 3.2 MW generator (which is not included in the project activity) have been taken into account in the monitoring of $BF_{k,y}$. Additionally, inform, with evidences, whether the operation of the 3.2 MW generator has occurred when the 8 MW generator was also operating.	VVM 205	During the verification site visit, the Project Developer clearly explained that both turbines do not operate simultaneously. The electricity generation of the 3.2 MW generator was not accounted for. Furthermore, biomass combusted in addition (surplus) to the baseline scenario is used for the methane avoidance component. Consequently, the amount of biomass combusted while the 3.2 MW turbine has no influence what so ever on the emission reduction calculation of the project activity.	Explanation has been provided on how the quantities of biomass combusted in the project activity boiler during the operation of the 3.2 MW generator have been taken into account in the monitoring of $BF_{k,y}$. CL04 is closed.
CL05 – During the site visit, it has been	VVM	The equipment used for chopping	Clarification provided on the chopping

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
verified that two equipments are used for chopping wood. Only equipment model TRB 08-S 1800x2200 serial number M1066 was available to have its technical data plate checked at the time. It is a 160 kW equipment. Please, provide picture of the technical data plate of the other chopping equipment, including information on its power (kW) and explain the value of 200 kW for “Installed Capacity Chopper”, shown in the calculation spreadsheets.	205	wood for the project activity is only the chopper model TRB 08-S. The other chopper is not part of the project activity, since it is used normally for process purposes or emergency situations. Even though the installed capacity of the TRB 08-S chopper is 160kW, the value used for the emission reduction calculation is 200kW for conservativeness purposes.	wood equipments. CL05 is closed.
CL06 – Please, explain how data of “Medições Energia Geradores 1 e 2 – Mensal” report is generated.	VVM 205	This is clearly explained in the document “ Procedimento para Projeto MDL rev11” which was verified by the DOE and an electronic copy made available.	Procedure provided. CL06 is closed.
CL07 – Please, explain why has the default value of 0.0027 t CH ₄ /t biomass (provided by ACM0006 version 6) been used for the product of NCV _k and EF _{burning,CH₄,k,y} . Additionally, explain how this default value, corrected by the conservativeness factor of 0.73, relates to the values of NCV _k and EF _{burning,CH₄,k,y} presented in Annex A of the monitoring report.	VVM 205	Please refer to page 43 of ACM0006 V.6 which recommends the use of this default value in the absence of a more accurate information. <i>“In the absence of more accurate information, it is recommended to use 0.0027 t CH₄ per ton of biomass as default value for the product of NCV_k and EF_{burning,CH₄,k,y}”</i>	Explanation has been provided on the default value of 0.0027 tCH ₄ /t biomass. CL07 is closed.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
		Please also refer to page 28 and 33 of the PD. The value has been fixed ex-ante and its calculation has been explained.	
CL08 – Please, explain how the monitored steam produced by the new boiler had its data unit transformed from GJ to MWh.	VVM 205	The steam produced is measured in tonnes and transformed to MWh by multiplying it by the steam enthalpy of 0.93.	Explanation provided. CL08 is closed.
CL09 – Please, explain how the QA/QC procedures for $BF_{k,y}$, W_x and $FF_{project\ plant,i,y}$ have been carried out during the monitored period.	VVM 205	The QaQc for these parameters was done as described in section B.7.1 of the registered PD. Furthermore, parameter $FF_{project\ plant,i,y}$ will be zero, since the biomass boiler can't be co-fired with fuel oil. It is only able to burn biomass.	Explanation provided on QA/QC procedures. CL09 is closed.
CL10 – For data parameter “f”, please, provide evidence of interviews on an annual basis with the landfill operator of Pindamonhangaba.	VVM 205	The evidence will be provided to the DOE.	Evidence of interviews with landfill operators have been provided. CL10 is closed.
CL11 – Please, explain how energy generation data has been recovered in October 2009, when a problem occurred in the computerized surveillance system.	VVM 208	The data was not recovered; instead the monthly average was used for estimating the values. <u>Second response:</u> In order to have the most conservative approach possible, the net electricity generated by	<u>First analysis:</u> Due to conservativeness, it is not possible to consider estimates as a replacement for energy generation data that the PPs have not been able to recover. <i>CL11 is not closed.</i>

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
		the new power unit will be zeroed in October 2009. The Monitoring report and calculations were updated to reflect this.	<u>Second analysis:</u> MR v03 and calc spreadsheets v03 do not consider October 2009 data anymore. CL11 is closed.
CL12 – Please, provide a complete set of data for the monitored period, relevant to: - Monthly reports, with daily information (“Boletim diário/Recuperação e Utilidades”), on steam of the project activity and CRQ boilers, and of the blower (“soprador”); - Monthly reports, with daily information, on electricity generation by the 8 MW and 3.2 MW generators (“Medições Energia Geradores 1 e 2 – Mensal”); - Biomass quantities (“Entrada de Madeira Energia”, “Entrada de Biomassa_Compras” and “Consumo de Biomassa_UNC”).	VVM 208	During the site visit, all of these documents were made available to the DOE (verifier). He verified them and copies were made available to him as requested. <u>Second response:</u> The requested complete set of documents were submitted to the assessor.	<u>First analysis:</u> In fact, copies were made available during site visit. However, it was not a complete set, covering all months of the monitored period. A complete set is still required. <i>CL12 is not closed.</i> <u>Second analysis:</u> Complete set of documents have been received, as requested. CL12 is closed.
CL13 – Please, explain the concepts of “Eucalipto Processo Transferencia – TON”, “Eucalipto Processo OVER – TON” and “Eucalipto Energia – TON” used in “Entrada Biomassa” report.	VVM 208	“Eucalipto Processo Transferência” is the renewable biomass bought to produce cellulose that did not meet the required specification (to big/small).	Explanation provided. CL13 is closed.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
		“Eucalipto Processo Over” is the material that can't be used either, like sawdust and pieces that are too big for the cellulose production. “Eucalipto Energia” are the biomass residues from renewable plantations that is not used for any other activity.	
CL14 – Please, explain how “Our biomass” data/parameter has been measured.	VVM 208	The biomass refers to the biomass transported from the company owned plantations. It is measured as detailed on page 36 of the PD. <u>Second response:</u> Nobrecel performs a biomass residues stock check every day. However, since the daily stock is very low and is always consumed in the following day, the company does not keep records of this control. The stock is, thus, considered Zero. The biomass residues monitoring is performed using the truck scale records. The parameter $BF_{k,y}$ (Monitoring	<u>First analysis:</u> According to registered PD, p.36, “The average monthly consumption is based on the difference of initial and final amount of biomass in the storage area, plus the amount of biomass delivered to the storage area”. As observed during the site visit, this procedure is not followed, since control is based solely on the invoices of biomass received. <i>CL14 is not closed.</i> <u>Second analysis:</u> MR v03 has been revised to include comment on current practice of biomass residues stock control. CL14 is closed.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
		Report, Aneex A) had its “description of monitoring methods” updated and a “comment” inserted as result of this clarification request.	
CL15 – Please, explain how the values of “Biomass transported (third parties)” and “Our biomass” have been calculated, using “Entrada Biomassa” and “Entrada de Madeira Energia” reports.	VVM 208	According to the internal procedure, page 4, in order to calculate the amount of biomass received from third parties and quantity of own biomass, only the values of “Pallets”, “Cavaco Verde” and “Cavaco seco” should be accounted for from the Biomass spreadsheet. From the spreadsheet “Entrada de Madeira de Energia” the values that should be added are “Própria” and “Terceiros” and from the spreadsheet “Consumo de biomassa” the values of “Transferência” should be used.	Clarification provided. CL15 is closed.
CL16 – Please, clarify to which data/parameter, in the MR, “CO2 Emission Factor diesel” in “Reference data” sheet, of the calculation spreadsheets, corresponds to.	VVM 208	The parameter “CO ₂ Emission Factor diesel” in the WB is used to calculate the EF_{km,CO_2} as explained on page 51 of the PD. The calculation on page 51 of the PD has been replicated in the WB	<u>First analysis:</u> Clarification provided. However, registered PD, p.51, shows 3.13 tCO ₂ /t diesel, instead of 3.1320. Please, clarify which value was used for validation. <i>CL16 is not closed.</i>

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
		for transparency. Since, it is not a monitored parameter, it is not mentioned in the MR. <u>Second response:</u> Both values (used in the PD and in this MR) are exactly the same. The only difference was in the presentation of the number. 3.13 is a different way to represent 3.1320 (using two decimal places instead of four), but 3.1320 was used in all calculations related to this project.	<u>Second analysis:</u> Clarification has been provided, regarding difference between the values 3.13 and 3.1320. CL16 is closed.