

**CLEAN DEVELOPMENT MECHANISM  
PROJECT ACTIVITY MONITORING REPORT**

# **LAGES METHANE AVOIDANCE PROJECT**

**CDM Registration Reference Number:** UNFCCC00000268CDMP

**Monitoring Period:** 1 Jun 2007 – 31 May 2008

**Monitoring Report Number:** 03

**(Version 01)**

**July 23, 2008**

### History of the document

Version	Date	Nature of revision(s)
01	23 July 2008	Initial adoption

**CLEAN DEVELOPMENT MECHANISM  
PROJECT ACTIVITY MONITORING REPORT****CONTENTS**

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**SECTION A. General project activity information**
**A.1. Title of the project activity:**

Lages Methane Avoidance Project (hereafter only Lages Project or Project).

**A.2 Project participants:**

Name of Party involved (*) ((host) indicates a host Party)	Private and/or public entity(ies) project participants (as applicable)	Kindly indicate if the Party involved wishes to be considered as project participant (Yes/No)
Brazil (host)	<ul style="list-style-type: none"> <li>Lages Bioenergética Ltda. (Private Entity)</li> <li>Tractebel Energia S.A. (Private Entity)</li> </ul>	No
Japan	<ul style="list-style-type: none"> <li>The Chugoku Electric Power Co., Inc. (Private Entity)</li> </ul>	No
Switzerland	<ul style="list-style-type: none"> <li>Bunge Emissions Fund Limited (Private Entity)</li> </ul>	No (involved indirectly)

**A.3. Crediting period:**
**A.3.1. Crediting period:**

The crediting period for this project activity is from 1 November 2004 to 31 October 2014.

**A.3.2. Total estimated emission reductions in the PDD over the crediting period:**

Years	Annual estimation of emission reductions in tonnes of CO <sub>2</sub> e	Annual estimation of project emissions in tonnes of CO <sub>2</sub> e
2004	36,740	512
2005	220,439	3,070
2006	220,439	3,070
2007	220,439	3,070
2008	220,439	3,070
2009	220,439	3,070
2010	220,439	3,070
2011	220,439	3,070
2012	220,439	3,070
2013	220,439	3,070
2014	183,700	2,558
<b>Total estimated reductions / project emissions (tonnes of CO<sub>2</sub>e)</b>	<b>2,204,394</b>	<b>30,698</b>
<b>Total number of crediting years</b>	<b>10</b>	<b>10</b>
<b>Annual average over the crediting period of estimated reductions / project emissions (tonnes of CO<sub>2</sub>e)</b>	<b>220,439</b>	<b>3,070</b>

#### A.4. Project activity description and background:

Lages Project's cogeneration facility is located in Lages, State of Santa Catarina, Brazil, whose economy is based on the wood industry using timber from planted forests. The Project is under operation since 23 December 2003 by Lages Bioenergética Ltda., a Special Purpose Company fully owned by Tractebel Energia S.A., specially constituted to build, operate and maintain the Lages Project. Detailed information about the Project is provided in the Project Design Document (PDD) Version 02, dated of 21 September 2005, and other documents, which are available and can be downloaded from the UNFCCC website (<http://cdm.unfccc.int/Projects/DB/DNV-CUK1140180495.84/view>).

The Project is designed to avoid methane emissions from anaerobic digestion in stockpiles (biomass decay) through controlled combustion by cogeneration process, which simultaneously generates electricity and thermal energy (steam) from the wood waste produced from several timber industries that would otherwise be disposed inadequately. The major project activity milestones are presented in the table below.

Date	Milestone
23 Dec 2003	Starting date of the Project
1 Nov 2004	Starting date of the crediting period
26 Jul 2005 – 24 Aug 2005	Period for public comments to the PDD in the UNFCCC website
25 Nov 2005	Brazilian Designated National Authority (DNA) issued the Letter of Approval (LoA) to the Project
14 Feb 2006	Project is validated by Det Norske Veritas (DNV)
24 Mar 2006 – 22 Apr 2006	Period for Executive Board comments
23 Apr 2006	Project is registered
20 Sep 2006	First CER issuance (277,768 CERs)
09 Oct 2007	Second CER issuance (274,958 CERs)

## SECTION B. Monitoring of the CDM project activity

### B.1. Monitoring report:

#### B.1.1. Monitoring reports associated with this project activity:

This is the third monitoring report associated with this project activity.

Report number	Monitoring period		Resulting emission reductions (tonnes of CO <sub>2</sub> e)	Verifying DOE
	From	To		
01	1 Nov 2004	31 May 2006	277,768	DNV
02	1 Jun 2006	31 May 2007	274,958	DNV
03	1 Jun 2007	31 May 2008	247,668	DNV

#### B.1.2. Monitoring report period:

The period covered in this monitoring report is from 1 June 2007 to 31 May 2008. The monitoring report period is within the bounds of the crediting period noted in Section A.3.1. This monitoring report does not cover any period of time covered by a previous monitoring report.

#### B.1.3. Emission reductions achieved over the monitoring period:

The emission reductions achieved over the designated monitoring period are **247,668 tonnes of CO<sub>2</sub>e**.

This amount is around 12% higher than the 220,439 tonnes of CO<sub>2</sub>e which were estimated to be reduced according to the PDD in the same period. This difference is basically due to higher load factor of the cogeneration plant during this period, consequently consuming and treating a wood waste amount higher than that estimated in the PDD.

### B.2. Methodologies applied:

#### B.2.1. Baseline methodology applied during the monitoring period:

The Project uses Small-Scale Baseline Methodology AMS III.E (Version 07) entitled “Avoidance of methane production from biomass decay through controlled combustion”.

AMS III.E (Version 07) is applicable for Lages Project as it states that “The baseline scenario is the situation where, in the absence of the project activity, biomass or other organic matter is left to decay”. This accurately represents the baseline scenario in the Lages Project case as presented in the PDD. Furthermore, Lages Project directly emits less than 15 kilotonnes of carbon dioxide equivalent annually, as presented in the Section D.4.

#### B.2.2. Monitoring methodology applied during the monitoring period:

The Project uses Small-Scale Monitoring Methodology AMS III.E (Version 07) entitled “Avoidance of methane production from biomass decay through controlled combustion”.

The AMS III.E (Version 07) is applicable to project activities which avoid the production of methane from biomass or other organic matter that would have otherwise been left to decay as a result of anthropogenic activity, which is the Lages Project case.

### **B.3. Monitoring plan:**

#### **B.3.1. Development and appropriateness of the monitoring plan:**

The “Lages Methane Avoidance Project Monitoring Plan – Version 02” from September 2005 was developed based on the approved monitoring methodology identified in the Section B.2.2.

#### **B.3.2. Implementation of the monitoring plan:**

During the monitoring period identified in the Section B.1.2, the Project Entity implemented the validated Monitoring Plan that was part of the project documents evaluated by the Designated Operational Entity (DOE) during the validation process.

#### **B.3.3. Revisions to the monitoring plan:**

The “Lages Methane Avoidance Project Monitoring Plan” was submitted on July 2005 to the DOE for validation. The document was revised on September 2005 based on clarifications and corrective actions requested by DNV. The Version 02 of the Monitoring Plan was validated along with the entire project activity on 14 February 2006 and has not been changed since that date.

### **B.4. Monitored data:**

The key data monitored at the project activity are listed in the Section D.3 of the PDD and in the Monitoring Plan. The project activity data were collected in accordance with the registered PDD and are shown in the following items. All necessary evidences to verify these data have been presented to the DOE for verification.

#### **B.4.1. Fuel – Amounts of wood waste (ID1, ID2, ID3 and ID4 of the PDD Section D.3):**

To accurately calculate the emission reductions (ERs) from avoided methane emissions during the operation of the Lages Project, the amounts of wood waste consumed ( $QC_{\text{biomass}}$ ) and purchased are monitored continuously and totalized on an annual basis, as presented in the table below. Each source of wood waste (Battistella, Sofia and Spot Market) is treated separately and the methane emissions avoided from each source are calculated using the small-scale methodology AMS III.E (Version 07) at the end of each calendar year and each monitoring period based on the characteristics of the wood waste supplier and the wood waste piles avoided through the use by Lages Project. Additionally, the Annex 1 present the wood waste amounts consumed and purchased from each supplier during the monitoring period.

Fuel – Amounts of wood waste								
Year	Month	ID1	ID2		ID3		ID4	
		QC <sub>biomass</sub>	Purchased from Battistella		Purchased from Sofia		Purchased from Spot Market	
		(tonnes) [A]	(tonnes)	(%) [B]	(tonnes)	(%) [C]	(tonnes)	(%) [D]
2007	6	22,629.00	5,122.18	21.99%	152.10	0.65%	18,014.03	77.36%
	7	23,827.00	9,165.00	41.47%	190.25	0.86%	12,746.89	57.67%
	8	18,067.25	7,989.78	38.64%	44.88	0.22%	12,642.34	61.14%
	9	15,650.40	5,856.73	38.27%	12.09	0.08%	9,433.95	61.65%
	10	21,311.00	7,910.40	42.38%	0.00	0.00%	10,752.86	57.62%
	11	21,707.00	7,330.74	39.61%	0.00	0.00%	11,177.61	60.39%
	12	20,249.00	6,487.43	41.92%	2.93	0.02%	8,985.50	58.06%
	Total	143,440.65	49,862.26	-	402.25	-	83,753.18	-
2008	1	22,648.40	2,967.98	14.38%	0.00	0.00%	17,678.24	85.62%
	2	15,868.90	2,073.04	9.30%	9.58	0.04%	20,201.65	90.66%
	3	16,651.00	2,045.34	9.14%	0.00	0.00%	20,333.19	90.86%
	4	16,776.00	1,692.14	8.08%	2.30	0.01%	19,240.34	91.91%
	5	15,935.00	1,663.58	7.83%	0.00	0.00%	19,582.97	92.17%
	Total	87,879.30	10,442.08	-	11.88-	-	97,036.39	-

Since 2006, with the USD devaluation, many wood industries in the Lages region, mainly those exporting their production, have faced an economic crisis which has obliged them to reduce or even to stop their activities. Battistella and Sofia are facing this crisis, what justifies the significant reduction in the amounts of wood waste purchased from these companies.

Additionally, the higher load factor verified during this monitoring period, due to an increase in the electricity generation by the Project from the generation estimated in the PDD, has required a higher wood waste consumption which has been supplied by many other Spot Market suppliers (please note the increase in the number of wood waste suppliers in 2007/2008 in relation to 2006 as presented in the Annex 1).

The reduction in the wood waste amount available in the region and the increase in the consumption increased the wood waste prices in the Spot Market. As result of this situation and in order to provide the required amount of wood waste to the Project, some alternative solutions such as, purchasing wood waste from some more distant suppliers (since the lower wood waste prices from these suppliers compensates the higher transportation costs) and purchasing a different kind of wood waste called “torete” in Portuguese – fine branches with diameter below 15 cm – has been adopted by the Lages Project operator during the period covered in this monitoring report. The table below presents the amount of “torete” purchased from each source (Battistella, Sofia and Spot Market).

Fuel – Amounts of wood waste										
Year	Month	Purchased from Battistella			Purchased from Sofia			Purchased from Spot Market		
		Total Wood Waste Amount	“Torete” Amount		Total Wood Waste Amount	“Torete” Amount		Total Wood Waste Amount	“Torete” Amount	
		(tonnes)	(tonnes)	(%) [α]	(tonnes)	(tonnes)	(%) [β]	(tonnes)	(tonnes)	(%) [γ]
2007	6 to 12	49,862.26	0.00	0.00%	402.25	0.00	0.00%	83,753.18	5,915.87	7.06%
2008	1 to 5	10,442.08	0.00	0.00%	11.88	0.00	0.00%	97,036.39	25,325.81	26.10%



In order to calculate the annual wood waste amount consumed ( $QC_{\text{biomass}}$ ) from each source (Battistella, Sofia and Spot Market) as presented in the table below, the percentages of wood waste purchased from each source in a given month are applied to the total amount consumed in the respective month (which is measured accurately by a dynamic balance installed in the entrance of the combustion chamber of the boiler) and the obtained values are totalized annually.

Fuel – Amounts of wood waste				
Year	Month	Battistella	Sofia	Spot Market
		$QC_{\text{biomass}}$ [E=A*B]	$QC_{\text{biomass}}$ [F=A*C]	$QC_{\text{biomass}}$ [G=A*D]
		(tonnes)	(tonnes)	(tonnes)
2007	6 to 12	53,947.14	408.30	89,085.20
2008	1 to 5	8,857.58	8.67	79,013.06

The wood waste amounts effectively treated under the Project ( $QT_{\text{biomass}}$ ), which is used to calculate the baseline methane emissions, is calculated discounting the wood waste amounts were previously consumed in the Battistella and Sofia old boilers and applying the discount factor of 1% due to spontaneous combustion in the Battistella pile. These values were validated by DNV and used in the registered PDD. Additionally, in this monitoring period, due to the “torete” consumption and considering the degradation and methane generation from this wood waste when it is piled and left to decay occurs at a much lower rate than other wood waste, by conservativeness, the percentage of this wood waste purchased from each source (Battistella, Sofia and Spot Market) were applied as a discount factor over the wood waste amount treated under the Project, resulting in the values presented in the table below.

Fuel – Amounts of wood waste							
Year	Month	Battistella			Sofia		Spot Market
		$QT_{\text{biomass}}$ [H=(E-I-J)*(1-α)] <sup>1</sup>	Wood waste burned for own consumption [I]	Wood waste burned spontaneously in the pile [J=R*(E-I)]	$QT_{\text{biomass}}$ [K=(F-L)*(1-β)] <sup>2</sup>	Wood waste burned for own consumption [L]	$QT_{\text{biomass}}$ [M=G*(1-γ)]
		(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
2007	6 to 12	34,558.07	19,040.00	349.07	0.00	8,400.00	82,792.71
2008	1 to 5	0.00	13,600.00	0.00	0.00	6,000.00	58,391.21

<sup>1</sup> Since the wood waste amount consumed ( $QC_{\text{biomass}}$ ) from Battistella in 2008 (from January to May) was lower than the wood waste amount was previously consumed in the Battistella old boilers, the wood waste amount from Battistella effectively treated under the Project ( $QT_{\text{biomass}}$ ) was considered zero. The wood waste amount consumed from Battistella was reduced due to the decrease in the Battistella activities in the period.

<sup>2</sup> Since the wood waste amount consumed ( $QC_{\text{biomass}}$ ) from Sofia in 2007 (from June to December) and 2008 (from January to May) was lower than the wood waste amount was previously consumed in the Sofia old boilers, the wood waste amount from Sofia effectively treated under the Project ( $QT_{\text{biomass}}$ ) was considered zero. The wood waste amount consumed from Sofia was reduced due to the decrease in the Sofia activities in the period.

#### B.4.2. Default values (ID5 of the PDD Section D.3):

All of the parameters and emission factors used to calculate the emission reductions are available in the PDD and were previously validated by DNV during the validation process of the project activity. The values of these parameters and emission factors were also monitored during the monitoring period using the associated references, as presented in the table below.

Default values				
ID5				
Parameter	Value	Unit	Data source	Comment
MCF [N]	0.8 (Battistella) 0.4 (Sofia) 0.4 (Spot Market)	(fraction)	IPCC <sup>3</sup> , Volume 5, Chapter 3, Table 3.1, Page 3.14	Default value of 0.4 is applied to wood waste supplied by Sofia and Spot Market. IPCC default value of 0.8 for unmanaged deep waste site ( $\geq 5$ meters of depth) is applied to wood waste supplied by Battistella.
DOC [O]	0.43	(fraction)	IPCC <sup>3</sup> , Volume 5, Chapter 2, Table 2.5, Page 2.16	Waste is 100% compounded by wood. IPCC default value is applied.
DOC <sub>F</sub> [P]	0.5	(fraction)	IPCC <sup>3</sup> , Volume 5, Chapter 3, Page 3.13	IPCC default value is applied.
F [Q]	0.5	(fraction)	IPCC <sup>3</sup> , Volume 5, Chapter 3, Page 3.15	IPCC default value is applied.
Wood waste burned for own consumption	32,640 (Battistella) 14,400 (Sofia)	t/year	Suppliers	Wood waste amounts were consumed in the Battistella and Sofia old boilers before the Lages Project implementation.
Discount factor due to spontaneous combustion in the pile [R]	0.01 (Battistella)	(fraction)	Estimation presented in the PDD	This discount factor was assumed to be 1% of the wood waste amount that otherwise would be dumped and left to decay in the baseline scenario for Battistella, that is, the 1% of the difference between the consumed amount supplied by Battistella and what was previously burned in its old boilers to produce steam.

<sup>3</sup> 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

Default values				
ID5				
Parameter	Value	Unit	Data source	Comment
$E_{\text{biomass}}$ [S]	7.746E-3	TJ/t	UNIPLAC	Considered 1,850 kcal/kg (7,746 kJ/kg), which is default value to wood waste in the Lages region, according to values reported in the UNIPLAC study, and was the value validated in the PDD. This value is more conservative than that obtained from samples analyzed periodically in laboratory.
$\text{CH}_4\text{bio\_comb}$ [T]	11	kgCH <sub>4</sub> /TJ	IPCC <sup>3</sup> , Volume 2, Chapter 2, Table 2.6, Page 2.25	Default value according to AMS III.E Version 07 is 300 kgCH <sub>4</sub> /TJ, which was based on general IPCC default value. However, 11 kgCH <sub>4</sub> /TJ is used since this is the specific IPCC default value to wood waste boilers.
$\text{N}_2\text{Obio\_comb}$ [U]	7	kgN <sub>2</sub> O/TJ	IPCC <sup>3</sup> , Volume 2, Chapter 2, Table 2.6, Page 2.25	Default value according to AMS III.E Version 07 is 4 kgN <sub>2</sub> O/TJ, which was based on IPCC default value. However, 7 kgN <sub>2</sub> O/TJ is used since this is the specific IPCC default value to wood waste boilers.
$\text{CH}_4\text{\_GWP}$ [V]	21	tCO <sub>2</sub> e/tCH <sub>4</sub>	UNFCCC <sup>4</sup>	Official value.
$\text{N}_2\text{O\_GWP}$ [W]	310	tCO <sub>2</sub> e/tN <sub>2</sub> O	UNFCCC <sup>4</sup>	Official value.
$D_{\text{diesel}}$ [X]	8.8E-4	t/l	ANP	According to Portaria nº 15 of Jul 17 <sup>th</sup> , 2006 of the Brazilian Petroleum Agency (ANP) the value ranges 820–880 kg/m <sup>3</sup> . The value used is more conservative.
$\text{VEF\_CO}_2$ [Y]	1.097 3,172.31	kgCO <sub>2</sub> /km kgCO <sub>2</sub> /t	IPCC <sup>5</sup> , Table 1-32, Page 1.75	Default values for US heavy duty diesel vehicles, uncontrolled. These values are not presented in the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.
$\text{VEF\_CH}_4$ [Z]	6.0E-5 0.18	kgCH <sub>4</sub> /km kgCH <sub>4</sub> /t	IPCC <sup>5</sup> , Table 1-32, pg. 1.75	Default values for US heavy duty diesel vehicles, uncontrolled. These values are more conservative than that presented in the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.
$\text{VEF\_N}_2\text{O}$ [AA]	3.1E-5 0.09	kgN <sub>2</sub> O/km kgN <sub>2</sub> O/t	IPCC <sup>5</sup> , Table 1-32, pg. 1.75	Default values for US heavy duty diesel vehicles, uncontrolled. These values are more conservative than that presented in the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

<sup>4</sup> Climate Change 1995, The Science of Climate Change: Summary for Policymakers and Technical Summary of the Working Group I Report, pg. 22.

<sup>5</sup> Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual.

**B.4.3. On-site transportation (ID6 of the PDD Section D.3):**

The amount of diesel oil used inside the Lages Project was monthly monitored through the invoices emitted by the proper supplier and amounts already stored (initial and final inventory) and is presented in the table below.

On-site transportation		
Year	Month	ID6
		Q <sub>diesel</sub> [AB]
		(liters)
2007	6	5,976.20
	7	6,279.90
	8	5,295.80
	9	4,578.60
	10	4,898.80
	11	5,807.20
	12	5,023.80
	Total	37,860.30
2008	1	6,301.70
	2	5,691.80
	3	5,347.30
	4	5,638.00
	5	5,755.10
	Total	28,733.90

**B.4.4. Off-site transportation (ID7 and ID8 of the PDD Section D.3):**

The data about the round trip distance between the wood waste suppliers and the Lages Project site and the truck capacity were monitored and are presented in the tables of the Annex 1. The weighted average round trip distance and truck capacity of all active wood waste suppliers to Lages Project site which are necessary to calculate the emissions from the off-site transportation are presented below.

Off-site transportation			
Year	Month	ID7	ID8
		AVD <sub>biomass</sub> [AC]	TC <sub>biomass</sub> [AD]
		(km)	(tonnes)
2007	6 to 12	30.2	13.6
2008	1 to 5	35.9	14.4

**B.4.5. Ash transportation (ID9 and ID10 of the PDD Section D.3):**

The data about the round trip distance between the Lages Project site and ash disposal site and the truck capacity were monitored and are presented in the table below. During the monitoring period, the ash produced by the project activity was transported from Lages Project to Jorge Lacerda Thermoelectric Power Plant, in Capivari de Baixo municipality, State of Santa Catarina, to be disposed in an appropriate manner.

Ash transportation			
Year	Month	ID9	ID10
		AVD <sub>ash</sub> [AE]	TC <sub>ash</sub> [AF]
		(km)	(tonnes)
2007	6 to 12	680.0	28.0
2008	1 to 5	680.0	28.0

**B.4.6. Ash production (ID11 of the PDD Section D.3):**

The amount of ash produced and transported by Lages Project was monthly monitored and is presented in the table below.

Ash production		
Year	Month	ID11
		Q <sub>ash</sub> [AG]
		(tonnes)
2007	6	1,500.72
	7	1,635.02
	8	1,566.44
	9	502.70
	10	1,320.58
	11	1,939.41
	12	1,651.06
	Total	10,115.93
2008	1	1,792.70
	2	1,546.35
	3	1,111.36
	4	1,132.90
	5	1,003.35
	Total	6,586.66

## SECTION C. Equations and calculation methods

The equations presented in the AMS III.E methodology (Version 07) and in the PDD were used to determine the baseline emissions, project activity emissions, leakages and emission reductions during the monitoring period.

### C.1. Baseline equations and calculation methods:

The methane emission factor is calculated as follows:

$$CH_4\_IPCC_{decay} = (MCF * DOC * DOC_F * F * 16/12)$$

where,

- $CH_4\_IPCC_{decay}$ : IPCC  $CH_4$  emission factor for decaying biomass in the region of the project activity (t $CH_4$ /t);
- MCF: Methane correction factor (fraction);
- DOC: Degradable organic carbon (fraction);
- $DOC_F$ : Fraction DOC dissimilated to landfill gas (fraction);
- F: Fraction of  $CH_4$  in landfill gas (fraction).

The baseline methane emissions from biomass decay are calculated using the formulae below:

$$BE_y = QT_{biomass} * CH_4\_IPCC_{decay} * CH_4\_GWP$$

where,

- $BE_y$ : Baseline methane emissions from biomass decay (tCO<sub>2</sub>e/year);
- $QT_{biomass}$ : Quantity of biomass treated under the project activity (t/year);
- $CH_4\_GWP$ : Global Warming Potential for  $CH_4$  (tCO<sub>2</sub>e/t $CH_4$ ).

### C.2. Project activity equations and calculation methods:

The emissions due to the project activity within the project boundary comprise:

- $CH_4$  emissions and  $N_2O$  emissions due to combustion of the wood waste ( $PE_y$ );
- $CO_2$ ,  $CH_4$  and  $N_2O$  emissions due to on-site wood waste transportation.

The formulae presented in the AMS III.E (Version 07) to calculate the emissions of  $CH_4$  and  $N_2O$  of the project activity considers only the emissions from the wood waste combustion as presented below:

$$PE_y = QC_{biomass} * E_{biomass} (CH_4_{bio\_comb} * CH_4\_GWP + N_2O_{bio\_comb} * N_2O\_GWP) / 10^6$$

where,

- $PE_y$ : Project activity emissions (ktCO<sub>2</sub>e/year);
- $QC_{biomass}$ : Quantity of biomass consumed by the project activity (t/year);
- $E_{biomass}$ : Energy content of biomass (TJ/t);
- $CH_{4bio\_comb}$ : CH<sub>4</sub> emission factor for biomass and waste (which includes dung and agricultural, municipal and industrial wastes) combustion (kgCH<sub>4</sub>/TJ);
- $CH_4\_GWP$ : Global Warming Potential for CH<sub>4</sub> (tCO<sub>2</sub>e/tCH<sub>4</sub>);
- $N_2O_{bio\_comb}$ : N<sub>2</sub>O emission factor for biomass and waste (which includes dung and agricultural, municipal and industrial wastes) combustion (kgN<sub>2</sub>O/TJ);
- $N_2O\_GWP$ : Global Warming Potential for N<sub>2</sub>O (tCO<sub>2</sub>e/tN<sub>2</sub>O).

Emissions from on-site transportation ( $OT\_GHG_y$ ) are calculated using the following equation:

$$OT\_GHG_y = Q_{diesel} * D_{diesel} * (VEF\_CO_2 + VEF\_CH_4 * CH_4\_GWP + VEF\_N_2O * N_2O\_GWP) / 10^6$$

where,

- $OT\_GHG_y$ : Emissions from on-site transportation (ktCO<sub>2</sub>e/year);
- $Q_{diesel}$ : Diesel oil consumption (l/year);
- $D_{diesel}$ : Diesel oil density (t/l);
- $VEF\_CO_2$ : CO<sub>2</sub> emission factor for trucks (kgCO<sub>2</sub>/t);
- $VEF\_CH_4$ : CH<sub>4</sub> emission factor for trucks (kgCH<sub>4</sub>/t);
- $CH_4\_GWP$ : Global Warming Potential for CH<sub>4</sub> (tCO<sub>2</sub>e/tCH<sub>4</sub>);
- $VEF\_N_2O$ : N<sub>2</sub>O emission factor for trucks (kgN<sub>2</sub>O/t);
- $N_2O\_GWP$ : Global Warming Potential for N<sub>2</sub>O (tCO<sub>2</sub>e/tN<sub>2</sub>O).

### C.3. Leakage equations and calculation methods:

The two sources of leakage are related to the off-site wood waste transportation and ash transportation that is produced in the wood waste combustion process.

Emissions from off-site wood waste transportation are calculated using the following equation:

$$BT\_GHG_y = QC_{biomass} / TC_{biomass} * AVD_{biomass} * (VEF\_CO_2 + VEF\_CH_4 * CH_4\_GWP + VEF\_N_2O * N_2O\_GWP) / 10^6$$

where,

- $BT\_GHG_y$ : Emission from off-site transportation (ktCO<sub>2</sub>e/year);
- $QC_{biomass}$ : Quantity of biomass consumed by project activity (t/year);

- $TC_{\text{biomass}}$ : Truck average capacity for biomass transportation (t);
- $AVD_{\text{biomass}}$ : Average round trip distance to biomass supply sites (km);
- $VEF_{\text{CO}_2}$ :  $\text{CO}_2$  emission factor for trucks ( $\text{kgCO}_2/\text{km}$ );
- $VEF_{\text{CH}_4}$ :  $\text{CH}_4$  emission factor for trucks ( $\text{kgCH}_4/\text{km}$ );
- $\text{CH}_4_{\text{GWP}}$ : Global Warming Potential for  $\text{CH}_4$  ( $\text{tCO}_2\text{e}/\text{tCH}_4$ );
- $VEF_{\text{N}_2\text{O}}$ :  $\text{N}_2\text{O}$  emission factor for trucks ( $\text{kgN}_2\text{O}/\text{km}$ );
- $\text{N}_2\text{O}_{\text{GWP}}$ : Global Warming Potential for  $\text{N}_2\text{O}$  ( $\text{tCO}_2\text{e}/\text{tN}_2\text{O}$ ).

Emissions from ash transportation are calculated using the following equation:

$$AT\_GHG_y = Q_{\text{ash}}/TC_{\text{ash}} * AVD_{\text{ash}} * (VEF_{\text{CO}_2} + VEF_{\text{CH}_4} * \text{CH}_4_{\text{GWP}} + VEF_{\text{N}_2\text{O}} * \text{N}_2\text{O}_{\text{GWP}}) / 10^6$$

where,

- $AT\_GHG_y$ : Emission from ash transportation ( $\text{ktCO}_2\text{e}/\text{year}$ );
- $Q_{\text{ash}}$ : Quantity of ash produced by the project activity ( $\text{t}/\text{year}$ );
- $TC_{\text{ash}}$ : Truck average capacity for ash transportation (t);
- $AVD_{\text{ash}}$ : Round trip distance to disposal site (km);
- $VEF_{\text{CO}_2}$ :  $\text{CO}_2$  emission factor for trucks ( $\text{kgCO}_2/\text{km}$ );
- $VEF_{\text{CH}_4}$ :  $\text{CH}_4$  emission factor for trucks ( $\text{kgCH}_4/\text{km}$ );
- $\text{CH}_4_{\text{GWP}}$ : Global Warming Potential for  $\text{CH}_4$  ( $\text{tCO}_2\text{e}/\text{tCH}_4$ );
- $VEF_{\text{N}_2\text{O}}$ :  $\text{N}_2\text{O}$  emission factor for trucks ( $\text{kgN}_2\text{O}/\text{km}$ );
- $\text{N}_2\text{O}_{\text{GWP}}$ : Global Warming Potential for  $\text{N}_2\text{O}$  ( $\text{tCO}_2\text{e}/\text{tN}_2\text{O}$ ).

Therefore, the leakage emissions ( $LE_y$ ) are the sum of the emissions from off-site transportation ( $BT\_GHG_y$ ) and from ash transportation ( $AT\_GHG_y$ ):

$$LE_y = BT\_GHG_y + AT\_GHG_y$$

#### **C.4. The sum of C.2 and C.3 representing the total project activity emissions equation:**

As a small-scale project activity, Lages Project shall directly emit less than 15 ktonnes  $\text{CO}_2\text{e}/\text{year}$ , according to established by AMS III.E (Version 07). The total project activity emissions ( $PE_{y\_total}$ ) are obtained by sum of  $PE_y$  with  $OT\_GHG_y$  (from Section C.2) and with  $LE_y$  (from Section C.3):

$$PE_{y\_total} = PE_y + OT\_GHG_y + LE_y$$



**C.5. Emission reductions equations and calculation methods:**

The emission reductions due to the project activity ( $ER_y$ ) is obtained by the difference between  $BE_y$  and  $PE_{y\_total}$  in  $tCO_2e/year$ :

$$ER_y = BE_y - PE_{y\_total}$$

**SECTION D. Emission reductions****D.1. Baseline emissions:**

The baseline emissions presented in the tables below were obtained when applying the monitored data in the Section B.4 to the equations presented in the Section C.1.

IPCC CH <sub>4</sub> emission factor for decaying biomass (CH <sub>4</sub> -IPCC <sub>decay</sub> )						
Wood waste suppliers	IPCC CH <sub>4</sub> emission factor for decaying biomass (CH <sub>4</sub> -IPCC <sub>decay</sub> ) [AH=N*O*P*Q*AI]	Methane correction factor (MCF) [N]	Degradable organic carbon (DOC) [O]	Fraction DOC dissimilated to landfill gas (DCOF) [P]	Fraction of CH <sub>4</sub> in landfill gas (F) [Q]	16/12 [AI]
	(tCH <sub>4</sub> /t)	(fraction)	(fraction)	(fraction)	(fraction)	(fraction)
Battistella	0.1147	0.8	0.43	0.5	0.5	1.33
Sofia	0.0573	0.4	0.43	0.5	0.5	1.33
Spot Market	0.0573	0.4	0.43	0.5	0.5	1.33

BATTISTELLA SUPPLY				
Baseline methane emissions from biomass decay (BE <sub>y</sub> )				
Year	Baseline methane emissions from biomass decay (BE <sub>y</sub> ) [AJ=H*AH*V]	Quantity of biomass treated under the project activity* (QT <sub>biomass</sub> ) [H]	IPCC CH <sub>4</sub> emission factor for decaying biomass (CH <sub>4</sub> -IPCC <sub>decay</sub> ) [AH]	GWP for CH <sub>4</sub> (CH <sub>4</sub> -GWP) [V]
	(tCO <sub>2</sub> e/year)	(t/year)	(tCH <sub>4</sub> /t)	(tCO <sub>2</sub> e/tCH <sub>4</sub> )
2004	0	0.00	0.1147	
2005	0	0.00	0.1147	
2006	0	0.00	0.1147	
2007	83,216	34,558.07	0.1147	21
2008	0	0.00	0.1147	21
2009	0	0.00	0.1147	
2010	0	0.00	0.1147	
2011	0	0.00	0.1147	
2012	0	0.00	0.1147	
2013	0	0.00	0.1147	
2014	0	0.00	0.1147	
<b>Total</b>	<b>83,216</b>	<b>34,558.07</b>	<b>-</b>	<b>-</b>

\*The annual wood waste treated under the project activity is the total of wood waste consumption of the Lages Project less the wood waste burned by Battistella and Sofia for own consumption in their old boilers, less the wood waste burned spontaneously in the Battistella pile and less the discount factor due to "Torete" consumption.

SOFIA SUPPLY				
Baseline methane emissions from biomass decay (BE <sub>y</sub> )				
Year	Baseline methane emissions from biomass decay (BE <sub>y</sub> ) [AK=K*AH*V]	Quantity of biomass treated under the project activity* (QT <sub>biomass</sub> ) [K]	IPCC CH <sub>4</sub> emission factor for decaying biomass (CH <sub>4</sub> -IPCC <sub>decay</sub> ) [AH]	GWP for CH <sub>4</sub> (CH <sub>4</sub> -GWP) [V]
	(tCO <sub>2</sub> e/year)	(t/year)	(tCH <sub>4</sub> /t)	(tCO <sub>2</sub> e/tCH <sub>4</sub> )
2004	0	0.00	0.0573	
2005	0	0.00	0.0573	
2006	0	0.00	0.0573	
2007	0	0.00	0.0573	21
2008	0	0.00	0.0573	21
2009	0	0.00	0.0573	
2010	0	0.00	0.0573	
2011	0	0.00	0.0573	
2012	0	0.00	0.0573	
2013	0	0.00	0.0573	
2014	0	0.00	0.0573	
<b>Total</b>	<b>0</b>	<b>0.00</b>	<b>-</b>	<b>-</b>

SPOT MARKET SUPPLY				
Baseline methane emissions from biomass decay (BE <sub>y</sub> )				
Year	Baseline methane emissions from biomass decay (BE <sub>y</sub> ) [AL=M*AH*V] (tCO <sub>2</sub> e/year)	Quantity of biomass treated under the project activity* (QT <sub>biomass</sub> ) [M] (t/year)	IPCC CH <sub>4</sub> emission factor for decaying biomass (CH <sub>4</sub> _IPCC <sub>decay</sub> ) [AH] (tCH <sub>4</sub> /t)	GWP for CH <sub>4</sub> (CH <sub>4</sub> _GWP) [V] (tCO <sub>2</sub> e/tCH <sub>4</sub> )
2004	0	0.00	0.0573	
2005	0	0.00	0.0573	
2006	0	0.00	0.0573	
2007	99,682	82,792.71	0.0573	21
2008	70,303	58,391.21	0.0573	21
2009	0	0.00	0.0573	
2010	0	0.00	0.0573	
2011	0	0.00	0.0573	
2012	0	0.00	0.0573	
2013	0	0.00	0.0573	
2014	0	0.00	0.0573	
<b>Total</b>	<b>169,985</b>	<b>141,183.91</b>	-	-

Baseline methane emissions from biomass decay (BE <sub>y</sub> )				
Year	Baseline methane emissions from biomass decay (BE <sub>y</sub> ) [AM=AJ+AK+AL] (tCO <sub>2</sub> e/year)	Battistella Supply [AJ] (tCO <sub>2</sub> e/year)	Sofia Supply [AK] (tCO <sub>2</sub> e/year)	Spot Market Supply [AL] (tCO <sub>2</sub> e/year)
2004	0	0	0	0
2005	0	0	0	0
2006	0	0	0	0
2007	182,898	83,216	0	99,682
2008	70,303	0	0	70,303
2009	0	0	0	0
2010	0	0	0	0
2011	0	0	0	0
2012	0	0	0	0
2013	0	0	0	0
2014	0	0	0	0
<b>Total</b>	<b>253,201</b>	<b>83,216</b>	<b>0</b>	<b>169,985</b>

## D.2. Project activity emissions:

The project activity emissions presented in the tables below were obtained when applying the monitored data in the Section B.4 to the equations presented in the Section C.2.

Project activity emissions (PE <sub>y</sub> )							
Year	Project activity emissions (PE <sub>y</sub> ) [AN=A*S*(T*V+U*W)/10^6] (ktCO <sub>2</sub> e/year)	Quantity of biomass consumed by project activity (QC <sub>biomass</sub> ) [A] (t/year)	Energy content of biomass (E <sub>biomass</sub> ) [S] (TJ/t)	CH <sub>4</sub> emission factor for biomass and waste combustion (CH <sub>4</sub> bio_comb) [T] (kgCH <sub>4</sub> /TJ)	GWP for CH <sub>4</sub> (CH <sub>4</sub> _GWP) [V] (tCO <sub>2</sub> e/t CH <sub>4</sub> )	N <sub>2</sub> O emission factor for biomass and waste combustion (N <sub>2</sub> O <sub>bio_comb</sub> ) [U] (kgN <sub>2</sub> O/TJ)	GWP for N <sub>2</sub> O (N <sub>2</sub> O_GWP) [W] (tCO <sub>2</sub> e/tN <sub>2</sub> O)
2004	0.000	0.00					
2005	0.000	0.00					
2006	0.000	0.00					
2007	2.668	143,440.65	7.746E-03	11	21	7	310
2008	1.634	87,879.30	7.746E-03	11	21	7	310
2009	0.000	0.00					
2010	0.000	0.00					
2011	0.000	0.00					
2012	0.000	0.00					
2013	0.000	0.00					
2014	0.000	0.00					
<b>Total</b>	<b>4.302</b>	<b>231,319.95</b>	-	-	-	-	-

Emissions from on-site transportation (OT_GHG <sub>e</sub> )								
Year	Emissions from on-site transportation (OT_GHG <sub>e</sub> ) [AO=AB*X*(Y+Z*V+AA*W)/10 <sup>6</sup> ] (ktCO <sub>2</sub> e/year)	Diesel oil consumption (Q <sub>diesel</sub> ) [AB] (l/year)	Diesel oil density (D <sub>diesel</sub> ) [X] (t/l)	CO <sub>2</sub> emission factor for trucks (VEF_CO <sub>2</sub> ) [Y] (kgCO <sub>2</sub> /t)	CH <sub>4</sub> emission factor for trucks (VEF_CH <sub>4</sub> ) [Z] (kgCH <sub>4</sub> /t)	GWP for CH <sub>4</sub> (CH <sub>4</sub> _GWP) [V] (tCO <sub>2</sub> e/tCH <sub>4</sub> )	N <sub>2</sub> O emission factor for trucks (VEF_N <sub>2</sub> O) [AA] (kgN <sub>2</sub> O/t)	GWP for N <sub>2</sub> O (N <sub>2</sub> O_GWP) [W] (tCO <sub>2</sub> e/tN <sub>2</sub> O)
2004	0.000							
2005	0.000							
2006	0.000							
2007	0.107	37,860.30	8.80E-04	3,172.31	0.18	21	0.09	310
2008	0.081	28,733.90	8.80E-04	3,172.31	0.18	21	0.09	310
2009	0.000							
2010	0.000							
2011	0.000							
2012	0.000							
2013	0.000							
2014	0.000							
<b>Total</b>	<b>0.188</b>	<b>66,594.20</b>	-	-	-	-	-	-

### D.3. Leakage emissions:

The leakage emissions presented in the tables below were obtained when applying the monitored data in the Section B.4 to the equations presented in the Section C.3.

Emissions from off-site transportation (BT_GHG <sub>e</sub> )								
Year	Emissions from off-site transportation (BT_GHG <sub>e</sub> ) [AP=A/AD*AC*(Y+Z*V+AA*W)/10 <sup>6</sup> ] (ktCO <sub>2</sub> e/year)	Quantity of biomass consumed by project activity (QC <sub>biomass</sub> ) [A] (t/year)	Truck average capacity for biomass transportation* (TC <sub>biomass</sub> ) [AD] (t)	Average round trip distance to biomass supply sites* (AVD <sub>biomass</sub> ) [AC] (km)	CO <sub>2</sub> emission factor for trucks (VEF_CO <sub>2</sub> ) [Y] (kgCO <sub>2</sub> /km)	CH <sub>4</sub> emission factor for trucks (VEF_CH <sub>4</sub> ) [Z] (kgCH <sub>4</sub> /km)	GWP for CH <sub>4</sub> (CH <sub>4</sub> _GWP) [V] (tCO <sub>2</sub> e/tCH <sub>4</sub> )	N <sub>2</sub> O emission factor for trucks (VEF_N <sub>2</sub> O) [AA] (kgN <sub>2</sub> O/km)
2004	0.000	0.00						
2005	0.000	0.00						
2006	0.000	0.00						
2007	0.352	143,440.65	13.6	30.2	1.097	6.0E-05	21	3.1E-05
2008	0.242	87,879.30	14.4	35.9	1.097	6.0E-05	21	3.1E-05
2009	0.000	0.00						
2010	0.000	0.00						
2011	0.000	0.00						
2012	0.000	0.00						
2013	0.000	0.00						
2014	0.000	0.00						
<b>Total</b>	<b>0.594</b>	<b>231,319.95</b>	-	-	-	-	-	-

\*Values from the "Wood Waste Suppliers" spreadsheet.

Emissions from ash transportation (AT_GHG <sub>e</sub> )								
Year	Emissions from ash transportation (AT_GHG <sub>e</sub> ) [AQ=AG/AF*AE*(Y+Z*V+AA*W)/10 <sup>6</sup> ] (ktCO <sub>2</sub> e/year)	Quantity of ash produced by the project activity (Q <sub>ash</sub> ) [AG] (t/year)	Truck average capacity for ash transportation (TC <sub>ash</sub> ) [AF] (t)	Round trip distance to disposal site (AVD <sub>ash</sub> ) [AE] (km)	CO <sub>2</sub> emission factor for trucks (VEF_CO <sub>2</sub> ) [Y] (kgCO <sub>2</sub> /km)	CH <sub>4</sub> emission factor for trucks (VEF_CH <sub>4</sub> ) [Z] (kgCH <sub>4</sub> /km)	GWP for CH <sub>4</sub> (CH <sub>4</sub> _GWP) [V] (tCO <sub>2</sub> e/tCH <sub>4</sub> )	N <sub>2</sub> O emission factor for trucks (VEF_N <sub>2</sub> O) [AA] (kgN <sub>2</sub> O/km)
2004	0.000							
2005	0.000							
2006	0.000							
2007	0.272	10,115.93	28.0	680.0	1.097	6.0E-05	21	3.1E-05
2008	0.177	6,586.66	28.0	680.0	1.097	6.0E-05	21	3.1E-05
2009	0.000							
2010	0.000							
2011	0.000							
2012	0.000							
2013	0.000							
2014	0.000							
<b>Total</b>	<b>0.449</b>	<b>16,702.59</b>	-	-	-	-	-	-

Leakage emissions (LE <sub>y</sub> )			
Year	Leakage emissions (LE <sub>y</sub> ) [AR=AP+AQ]	Emissions from off- site transportation (BT_GHG <sub>y</sub> ) [AP]	Emissions from ash transportation (AT_GHG <sub>y</sub> ) [AQ]
	(ktCO <sub>2</sub> e/year)	(ktCO <sub>2</sub> e/year)	(ktCO <sub>2</sub> e/year)
2004	0.000	0.000	0.000
2005	0.000	0.000	0.000
2006	0.000	0.000	0.000
2007	0.624	0.352	0.272
2008	0.420	0.242	0.177
2009	0.000	0.000	0.000
2010	0.000	0.000	0.000
2011	0.000	0.000	0.000
2012	0.000	0.000	0.000
2013	0.000	0.000	0.000
2014	0.000	0.000	0.000
<b>Total</b>	<b>1,044</b>	<b>0.594</b>	<b>0.449</b>

#### D.4. The sum of D.2 and D.3 representing the total project activity emissions:

The total project activity emissions presented in the table below were obtained when applying the values calculated in the Sections D.2 and D.3 to the equation presented in the Section C.4.

Total project activity emissions (PE <sub>y, total</sub> ) [sum of D.2 and D.3]				
Year	Total project activity emissions (PE <sub>y, total</sub> ) [AS=AN+AO+AR]	Project activity emissions (PE <sub>y</sub> ) [AN]	Emissions from on- site transportation (OT_GHG <sub>y</sub> ) [AO]	Leakage emissions (LE <sub>y</sub> ) [AR]
	(ktCO <sub>2</sub> e/year)	(ktCO <sub>2</sub> e/year)	(ktCO <sub>2</sub> e/year)	(ktCO <sub>2</sub> e/year)
2004	0.000	0.000	0.000	0.000
2005	0.000	0.000	0.000	0.000
2006	0.000	0.000	0.000	0.000
2007	3.399	2.668	0.107	0.624
2008	2.135	1.634	0.081	0.420
2009	0.000	0.000	0.000	0.000
2010	0.000	0.000	0.000	0.000
2011	0.000	0.000	0.000	0.000
2012	0.000	0.000	0.000	0.000
2013	0.000	0.000	0.000	0.000
2014	0.000	0.000	0.000	0.000
<b>Total</b>	<b>5,534</b>	<b>4,302</b>	<b>0.188</b>	<b>1,044</b>

#### D.5. The difference between D.1 and D.4 representing the project activity emission reductions:

The project activity emission reductions presented in the table below were obtained when applying the values calculated in the Sections D.1 and D.4 to the equation presented in the Section C.5.

Emission reductions due to the project activity (ER <sub>y</sub> ) [difference between D.1 and D.4]			
Year	Emission reduction due to the project activity (ER <sub>y</sub> ) [AT=AM-AS]	Baseline methane emissions from biomass decay (BE <sub>y</sub> ) [AM]	Total project activity emissions (PE <sub>y, total</sub> ) [AS]
	(tCO <sub>2</sub> e/year)	(tCO <sub>2</sub> e/year)	(tCO <sub>2</sub> e/year)
2004	0	0	0
2005	0	0	0
2006	0	0	0
2007	179,500	182,898	3,399
2008	68,168	70,303	2,135
2009	0	0	0
2010	0	0	0
2011	0	0	0
2012	0	0	0
2013	0	0	0
2014	0	0	0
<b>Total</b>	<b>247,668</b>	<b>253,201</b>	<b>5,534</b>

## Annex 1 – Wood waste by supplier

### CONSUMED AMOUNTS IN 2007

Wood waste suppliers	Status (Active/Non-active)	Round trip distance to Lages Project (km) [AW]	Truck Capacity (tonnes) [AX]	Consumed wood waste amount (tonnes/month)												Total consumed amount (tonnes/year) [A]	Travels (un./year) [AY=A/AX]	Total travelled distance (km/year) [AZ=AW*AY]
				Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
<b>Lages region</b>																		
Battistella	Active	2.0	14.0						4,977.17	9,880.24	6,981.35	5,989.78	9,032.64	8,597.65	8,488.31	53,947.14	3,853	7,707
Sofia	Active	4.0	4.5						147.79	205.10	39.22	12.36	0.00	0.00	3.83	408.30	91	363
Boa Esperança Paiquerê	Active	146.0	14.5						1,345.05	1,212.33	635.61	133.18	1,054.60	1,666.72	1,426.43	7,473.92	515	75,255
Edeschons	Active	5.0	4.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Janderson	Active	16.0	12.5						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Madbras	Active	40.0	6.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Madebampi	Active	10.0	8.5						42.69	45.44	107.13	72.12	68.28	137.24	142.68	615.58	72	724
Madeiraira Lajes	Active	3.0	14.5						0.00	15.84	0.00	0.00	0.00	0.00	0.00	15.84	1	3
Madepar	Active	4.0	12.5						1,952.20	2,615.09	2,181.43	1,686.77	2,007.57	1,589.01	1,079.23	13,111.29	1,049	4,196
MJ Madeiras	Active	5.0	11.5						1,029.23	972.10	613.39	722.22	741.91	911.08	636.09	5,626.03	489	2,446
Pandolfo	Active	3.0	9.0						637.63	995.47	603.91	480.08	687.89	664.48	1,471.11	5,540.58	616	1,847
Pinusbras	Active	5.0	9.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Polese	Active	26.0	7.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Righez	Active	50.0	15.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Araupel	Active	160.0	30.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Claudio Paes	Active	30.0	15.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Flora Pinus	Active	6.0	3.5						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Indupinho	Active	100.0	16.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Indusflora	Active	30.0	16.0						75.77	781.90	906.65	623.26	1,308.60	1,783.93	2,028.87	7,508.99	469	14,079
Jose Altenir	Active	30.0	17.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Lopes	Active	100.0	14.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Martins	Active	16.0	8.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Mengatto	Active	5.0	15.5						1,218.02	792.12	963.87	869.82	1,170.49	1,242.50	1,187.73	7,444.54	480	2,401
Multiform	Active	2.0	18.0						5,042.34	0.00	647.33	754.73	757.90	178.18	225.14	7,605.62	423	845
Pisani	Active	18.0	13.0						621.52	854.19	629.33	280.96	738.21	951.26	753.00	4,828.46	371	6,686
Sart	Active	78.0	15.0						143.55	37.21	0.00	14.44	84.84	159.50	106.49	546.04	36	2,839
Tributto	Active	30.0	10.5						196.34	201.18	169.37	246.07	266.48	326.66	392.82	1,798.90	171	5,140
Turbina	Active	130.0	16.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Alceir de Jesus	Active	27.0	10.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Jaquirana	Active	220.0	16.0						981.78	1,299.68	1,172.47	995.19	0.00	0.00	0.00	4,449.11	278	61,175
Madebins	Active	220.0	20.5						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Boa Esperança Matriz	Active	50.0	14.0						667.89	757.07	603.89	648.90	809.45	797.65	716.27	5,001.13	357	17,861
Madeiraira Santa Paulina	Active	14.0	10.5						247.07	266.32	252.60	263.54	303.80	323.00	66.45	1,722.79	164	2,297
Vilso Isidoro	Active	40.0	15.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Antonio Amarante	Active	70.0	17.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Sérgio Bochert	Active	58.0	16.0						77.31	0.00	0.00	0.00	0.00	0.00	19.42	96.72	6	351
Extrapac	Active	10.0	5.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Laminadora Catarinense	Active	4.0	9.0						26.63	0.00	0.00	0.00	0.00	0.00	0.00	26.63	3	12
Pinus Forte	Active	3.0	9.0						98.60	28.36	49.00	26.28	0.00	0.00	59.43	261.67	29	87
Alcides Inaldo Ramos Rosa	Active	27.0	10.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
José de Souza	Active	60.0	8.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Malke	Active	10.0	2.5						2.49	0.00	0.00	0.00	0.00	0.00	0.00	2.49	1	10
Arno Tillmann	Active	52.0	16.0						56.52	0.00	0.00	0.00	0.00	81.37	53.03	190.92	12	621
Floko	Active	100.0	30.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Madeiraira Santa Rita	Active	14.0	11.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Aristides Araujo	Active	10.0	15.0						14.72	0.00	0.00	0.00	0.00	0.00	0.00	14.72	1	10
Germino Vargas	Active	10.0	6.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Sérgio Luiz Bogorni	Active	50.0	15.0						101.38	0.00	0.00	0.00	0.00	0.00	0.00	101.38	7	338
Brazilian Pine	Active	2.0	12.0						192.14	152.28	0.00	0.00	0.00	0.00	0.00	344.43	29	57
Celso Pedro Paese	Active	30.0	15.0						245.77	93.68	50.25	0.00	0.00	0.00	0.00	389.70	26	779
Clesio Kauling	Active	70.0	13.0						12.81	0.00	0.00	0.00	0.00	124.13	145.85	282.79	22	1,523
Comboni	Active	160.0	10.0						79.41	0.00	0.00	0.00	0.00	0.00	0.00	79.41	8	1,271
Eder Roberto Monn	Active	70.0	16.0						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Nilton Sabatini	Active	20.0	17.0						732.05	656.87	28.88	0.00	0.00	0.00	0.00	1,417.80	83	1,668
Olimpyo	Active	24.0	13.5						483.74	488.07	459.13	550.64	339.75	155.43	206.68	2,683.44	199	4,771

Gilberto Muniz Lima	Active	35.0	16.0							267.16	175.97	47.79	0.00	0.00	0.00	0.00	490.91	31	1,074
J.A. Maines	Active	170.0	12.5							196.20	139.18	113.42	49.58	223.91	200.85	255.51	1,178.64	94	16,030
IJ Thomazi	Active	25.0	11.5							0.00	45.18	0.00	0.00	0.00	0.00	0.00	45.18	4	98
Ravazin	Active	20.0	24.5							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Madeira Norte Pontaltense	Active	160.0	17.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Bonete Madeiras	Active	160.0	28.5							33.69	22.32	0.00	0.00	0.00	249.56	44.67	350.24	12	1,966
IJ Thomazi	Active	25.0	11.5							323.58	415.62	78.30	188.39	154.78	83.13	0.00	1,243.80	108	2,704
Lucemar Schmitz	Active	80.0	15.0							27.22	15.87	0.00	0.00	0.00	0.00	0.00	43.09	3	230
Prime Timber	Active	220.0	15.5							314.22	662.33	598.46	452.37	674.43	442.28	311.69	3,455.79	223	49,050
União Fosforeira	Active	150.0	13.5							17.33	0.00	0.00	0.00	0.00	0.00	0.00	17.33	1	193
Jair Philippi	Active	170.0	19.5							0.00	0.00	134.48	581.30	776.81	721.54	57.69	2,271.83	117	19,806
Anderson Chaves Pucci	Active	38.0	10.0							0.00	0.00	0.00	8.40	11.51	22.07	13.33	55.31	6	210
Raul Antonio Favero	Active	150.0	12.0							0.00	0.00	0.00	0.00	97.15	152.23	91.33	340.71	28	4,259
Agro Comercial Zandonadi Ltda.	Active	200.0	13.5							0.00	0.00	0.00	0.00	0.00	31.11	154.81	185.93	14	2,754
Neuri A. Chiodelli	Active	160.0	12.5							0.00	0.00	0.00	0.00	0.00	88.92	0.00	88.92	7	1,138
Neuri Carlos Telles	Active	88.0	15.0							0.00	0.00	0.00	0.00	0.00	25.47	0.00	25.47	2	149
Antonio Ermar Garcia e/ou Maria Ilza G. Garcia	Active	80.0	15.0							0.00	0.00	0.00	0.00	0.00	0.00	97.99	97.99	7	523
Brazimoveis	Active	160.0	12.0							0.00	0.00	0.00	0.00	0.00	0.00	13.11	13.11	1	175
Magdalena Presser Einsfeld	Active	60.0	15.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Adelina Vieira dos Santos	Active	12.0	16.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Agro Florestal Paequerê	Active	80.0	15.5							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Getulio Alves de Oliveira	Active	85.0	16.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Iselio José Souto-Maior Camargo	Active	8.0	11.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Paulo Afonso Leal Narciso	Active	80.0	15.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Victorio Genuino Agostini	Active	30.0	15.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Antonio Carlos de Liz Stefan	Active	30.0	15.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Caraúno Madeiras Ltda.	Active	420.0	16.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Coesa Agroflorestal	Active	68.0	12.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Domingos da Silva Martins	Active	30.0	12.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Edemar Antonio Rosseto	Active	60.0	15.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
João Luis Ronsoni	Active	80.0	15.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
José Canozio Alves Pereira	Active	75.0	15.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Juliano Sérgio Lopes	Active	170.0	22.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Marcus Aristoteles Zilli	Active	170.0	10.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
NP Madeiras	Active	180.0	12.5							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Paulino Granzotto	Active	16.0	15.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Silvio Muinz Matos	Active	80.0	16.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Benjamin Luiz Valentini	Active	80.0	15.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Darley Pedro Martini	Active	80.0	15.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Finance Comercial	Active	72.0	16.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
José Alexandre Coelho	Active	100.0	15.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
José Mariano da Silva	Active	50.0	15.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Luiz Antonio Stimamiglio	Active	30.0	16.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Olimpio Antonio Candiago	Active	40.0	10.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Orestes Macedo da Luz	Active	55.0	12.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Paulo Cesar da Costa	Active	40.0	15.0							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
-										0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
-										0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
<b>Total</b>				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>22,629.00</b>	<b>23,827.00</b>	<b>18,067.25</b>	<b>15,650.40</b>	<b>21,311.00</b>	<b>21,707.00</b>	<b>20,249.00</b>	<b>143,440.65</b>	<b>10,520</b>	<b>317,719</b>

Weighted average round trip distance to Lages Project [AC=AZ/AY]

= 30.2 km

Weighted average truck capacity [AD=A/AY]

= 13.6 tonnes

## PURCHASED AMOUNTS IN 2007

Wood waste suppliers	Purchased wood waste amount (tonnes/month)													Total purchased amount (tonnes/year)								
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec										
Lages region																						
Battistella	0.00%	0.00%	0.00%	0.00%	0.00%	5,122.18	21.99%	9,165.00	41.47%	7,989.78	38.64%	5,856.73	38.27%	7,910.40	42.38%	7,330.74	39.61%	6,487.43	41.92%	49,862.26	37.21%	
Sofia	0.00%	0.00%	0.00%	0.00%	0.00%	152.10	0.65%	190.25	0.86%	44.88	0.22%	12.09	0.08%	0.00	0.00%	0.00%	0.00%	2.93	0.02%	402.25	0.30%	
Boa Esperança Paiqueré	0.00%	0.00%	0.00%	0.00%	0.00%	1,384.24	5.94%	1,124.57	5.09%	727.42	3.52%	130.22	0.85%	923.57	4.95%	1,421.12	7.68%	1,090.19	7.04%	6,801.33	5.07%	
Edeschons	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Janderson	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Madbras	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Madebampi	0.00%	0.00%	0.00%	0.00%	0.00%	0.19%	0.19%	42.15	0.19%	122.60	0.59%	70.52	0.46%	59.80	0.32%	117.02	0.63%	109.05	0.70%	565.07	0.42%	
Madeiraira Lajes	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	14.69	0.07%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	14.69	0.01%	
Madepar	0.00%	0.00%	0.00%	0.00%	0.00%	2,009.07	8.63%	2,425.78	10.98%	2,496.53	12.07%	1,649.30	10.78%	1,758.14	9.42%	1,354.86	7.32%	824.83	5.33%	12,518.51	9.34%	
MJ Madeiras	0.00%	0.00%	0.00%	0.00%	0.00%	1,059.22	4.55%	901.73	4.08%	701.99	3.40%	706.18	4.61%	649.73	3.48%	776.83	4.20%	486.15	3.14%	5,281.84	3.94%	
Pandolfo	0.00%	0.00%	0.00%	0.00%	0.00%	656.21	2.82%	923.41	4.18%	691.15	3.34%	469.42	3.07%	602.43	3.23%	566.57	3.06%	1,124.34	7.27%	5,033.51	3.76%	
Pinusbras	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Polese	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Righez	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Araupes	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Claudio Paes	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Flora Pinus	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Indupinho	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Indusflora	0.00%	0.00%	0.00%	0.00%	0.00%	77.98	0.33%	725.30	3.28%	1,037.61	5.02%	609.42	3.98%	1,146.02	6.14%	1,521.06	8.22%	1,550.62	10.02%	6,668.01	4.98%	
Jose Altenir	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Lopes	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Martins	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Mengatto	0.00%	0.00%	0.00%	0.00%	0.00%	1,253.50	5.38%	734.77	3.32%	1,103.10	5.33%	850.50	5.56%	1,025.06	5.49%	1,059.41	5.72%	907.75	5.87%	6,934.11	5.17%	
Multiform	0.00%	0.00%	0.00%	0.00%	0.00%	5,189.25	22.28%	0.00	0.00%	740.83	3.58%	737.97	4.82%	663.74	3.56%	151.92	0.82%	172.07	1.11%	7,655.78	5.71%	
Pisani	0.00%	0.00%	0.00%	0.00%	0.00%	639.63	2.75%	792.35	3.58%	720.23	3.48%	274.72	1.80%	646.49	3.46%	811.09	4.38%	575.50	3.72%	4,460.01	3.33%	
Sart	0.00%	0.00%	0.00%	0.00%	0.00%	147.73	0.63%	34.52	0.16%	0.00	0.00%	14.12	0.09%	74.30	0.40%	136.00	0.73%	81.39	0.53%	488.06	0.36%	
Tributto	0.00%	0.00%	0.00%	0.00%	0.00%	202.06	0.87%	186.62	0.84%	193.83	0.94%	240.60	1.57%	233.37	1.25%	278.52	1.50%	300.22	1.94%	1,635.22	1.22%	
Turbina	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Alceir de Jesus	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Jaquirana	0.00%	0.00%	0.00%	0.00%	0.00%	1,010.38	4.34%	1,205.59	5.45%	1,341.83	6.49%	973.08	6.36%	0.00	0.00%	0.00	0.00%	0.00	0.00%	4,530.88	3.38%	
Madebins	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Boa Esperança Matriz	0.00%	0.00%	0.00%	0.00%	0.00%	687.35	2.95%	702.26	3.18%	691.12	3.34%	634.49	4.15%	708.88	3.80%	680.11	3.67%	547.43	3.54%	4,651.65	3.47%	
Madeiraira Santa Paulina	0.00%	0.00%	0.00%	0.00%	0.00%	254.27	1.09%	247.04	1.12%	289.09	1.40%	257.69	1.68%	266.05	1.43%	275.40	1.49%	50.79	0.33%	1,640.34	1.22%	
Vilso Isidoro	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Antonio Amarante	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Sérgio Boechert	0.00%	0.00%	0.00%	0.00%	0.00%	79.56	0.34%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	14.84	0.10%	94.40	0.07%	
Extrapac	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Laminadora Catarinense	0.00%	0.00%	0.00%	0.00%	0.00%	27.41	0.12%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	27.41	0.02%	
Pinus Forte	0.00%	0.00%	0.00%	0.00%	0.00%	101.47	0.44%	26.31	0.12%	56.08	0.27%	25.70	0.17%	0.00	0.00%	0.00	0.00%	45.42	0.29%	254.98	0.19%	
Alcides Inaldo Ramos Rosa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
José de Souza	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Malke	0.00%	0.00%	0.00%	0.00%	0.00%	2.56	0.01%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	2.56	0.00%	
Arno Tillmann	0.00%	0.00%	0.00%	0.00%	0.00%	58.17	0.25%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	69.38	0.37%	40.53	0.26%	168.08	0.13%	
Fluko	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Madeiraira Santa Rita	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Aristides Araújo	0.00%	0.00%	0.00%	0.00%	0.00%	15.15	0.07%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	15.15	0.01%	
Germino Vargas	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	
Sérgio Luiz Bogorni	0.00%	0.00%	0.00%	0.00%	0.00%	104.33	0.45%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	104.33	0.08%	
Brazilian Pine	0.00%	0.00%	0.00%	0.00%	0.00%	197.74	0.85%	141.26	0.64%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	339.00	0.25%	
Celso Pedro Paese	0.00%	0.00%	0.00%	0.00%	0.00%	252.93	1.09%	86.90	0.39%	57.51	0.28%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	397.34	0.30%	
Cleio Kauling	0.00%	0.00%	0.00%	0.00%	0.00%	13.18	0.06%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	105.84	0.57%	111.47	0.72%	230.40	0.17%	
Comboni	0.00%	0.00%	0.00%	0.00%	0.00%	81.72	0.35%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	81.72	0.06%	
Eder Roberto Monn	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00								



Gilberto Muniz Lima	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	274.94	1.18%	163.23	0.74%	54.69	0.26%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	492.86	0.37%
J.A. Maines	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	201.92	0.87%	129.10	0.58%	129.80	0.63%	48.48	0.32%	196.09	1.05%	171.25	0.93%	195.28	1.26%	1,071.92	0.80%		
JJ Thomazi	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	41.91	0.19%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	41.91	0.03%
Ravazin	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
Madeira Norte Pontalense	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
Bonete Madeiras	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	34.67	0.15%	20.70	0.09%	0.00	0.00%	0.00	0.00%	212.79	1.11%	34.14	0.22%	302.30	0.23%				
JJ Thomazi	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	333.01	1.43%	385.53	1.74%	89.61	0.43%	184.21	1.20%	135.55	0.73%	70.88	0.38%	0.00	0.00%	1,198.79	0.89%		
Lucemar Schmitz	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	28.01	0.12%	14.72	0.07%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	42.73	0.03%		
Prime Timber	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	323.38	1.39%	614.38	2.78%	684.91	3.31%	442.32	2.89%	590.64	3.16%	377.11	2.04%	238.22	1.54%	3,270.96	2.44%		
União Fosforeira	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	17.84	0.08%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	17.84	0.01%		
Jair Philippi	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	153.91	0.74%	568.39	3.71%	680.30	3.65%	615.22	3.32%	44.09	0.28%	2,061.91	1.54%		
Anderson Chaves Pucci	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	8.21	0.05%	10.08	0.05%	18.82	0.10%	10.19	0.07%	47.30	0.04%		
Raul Antonio Favero	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	85.08	0.46%	129.80	0.70%	69.80	0.45%	284.68	0.21%		
Agro Comercial Zandonadi Ltda.	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	26.53	0.14%	118.32	0.76%	144.85	0.11%		
Neuri A. Chiodelli	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	75.82	0.41%	0.00	0.00%	75.82	0.06%		
Neuri Carlos Telles	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	21.72	0.12%	0.00	0.00%	21.72	0.02%		
Antonio Ermar Garcia e/ou Maria Ilza G. Garcia	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	74.89	0.48%	74.89	0.06%		
Brazimoveis	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	10.02	0.06%	10.02	0.01%		
Magdalena Presser Einsfeld	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Adelina Vieira dos Santos	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Agro Florestal Paequeré	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Getulio Alves de Oliveira	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Istelio José Souto-Maior Camargo	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Paulo Afonso Leal Narciso	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Victorio Gemino Agostini	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Antonio Carlos de Liz Stefan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Caratino Madeiras Ltda.	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Cocsa Agroflorestal	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Domingos da Silva Martins	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Edemar Antonio Rosseto	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
João Luis Ronsoni	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
José Canozio Alves Pereira	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Juliano Sérgio Lopes	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Marcus Aristoteles Zilli	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
NP Madeiras	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Paulino Granzotto	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Silvio Muinz Matos	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Benjamin Luiz Valentini	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Darley Pedro Martini	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Financ Comercial	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
José Alexandre Coelho	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
José Mariano da Silva	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Luiz Antonio Stimamiglio	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Olimpio Antonio Candiago	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Orestes Macedo da Luz	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Paulo Cesar da Costa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		
Total	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	23,288.31	100.00%	22,102.14	100.00%	20,677.00	100.00%	15,302.77	100.00%	18,663.26	100.00%	18,508.35	100.00%	15,475.86	100.00%	134,017.69	100.00%		

"Torete" amount purchased from Battistella = 0.00 tonnes/year  
 "Torete" amount purchased from Sofia = 0.00 tonnes/year  
 "Torete" amount purchased from Spot Market = 5,915.87 tonnes/year

Percentage of "Torete" in the wood waste purchased from Battistella = 0.00%  
 Percentage of "Torete" in the wood waste purchased from Sofia = 0.00%  
 Percentage of "Torete" in the wood waste purchased from Spot Market = 7.06%

### CONSUMED AMOUNTS IN 2008

Wood waste suppliers	Status (Active/Non-active)	Round trip distance to Lages Project (km) [AW]	Truck Capacity (tonnes) [AX]	Consumed wood waste amount (tonnes/month)												Total consumed amount (tonnes/year) [A]	Travels (un./year) [AY=A/AX]	Total travelled distance (km/year) [AZ=AW*AY]	
				Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec				
Lages region																			
Battistella	Active	2.0	14.0	3,255.80	1,476.24	1,521.86	1,355.99	1,247.69									8,857.58	633	1,265
Sofia	Active	4.0	4.5	0.00	6.82	0.00	1.84	0.00									8.67	2	8
Boa Esperança Paiquerê	Active	146.0	14.5	1,499.03	960.88	1,023.60	416.99	0.00									3,900.50	269	39,274
Edeschons	Active	5.0	4.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Janderson	Active	16.0	12.5	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Madbras	Active	40.0	6.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Madebampi	Active	10.0	8.5	143.76	116.40	95.75	100.95	95.48									552.33	65	650
Madeiraira Lajes	Active	3.0	14.5	0.00	0.00	76.34	67.34	83.39									227.07	16	47
Madepar	Active	4.0	12.5	1,190.16	1,265.85	1,067.11	1,202.57	1,112.94									5,838.64	467	1,868
MJ Madeiras	Active	5.0	11.5	981.42	473.85	237.62	142.99	285.08									2,120.96	184	922
Pandolfo	Active	3.0	9.0	1,992.07	1,207.19	1,011.04	1,050.75	835.24									6,096.30	677	2,032
Pinusbras	Active	5.0	9.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Polese	Active	26.0	7.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Righez	Active	50.0	15.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Araupel	Active	160.0	30.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Claudio Paes	Active	30.0	15.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Flora Pinus	Active	6.0	3.5	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Indupinho	Active	100.0	16.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Indusflora	Active	30.0	16.0	907.37	332.23	530.17	421.09	187.10									2,377.96	149	4,459
Jose Altenir	Active	30.0	17.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Lopes	Active	100.0	14.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Martins	Active	16.0	8.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Mengatto	Active	5.0	15.5	1,341.23	838.95	863.40	1,012.77	1,156.01									5,212.37	336	1,681
Multiform	Active	2.0	18.0	6,091.11	4,179.01	3,254.28	3,738.40	4,442.74									21,705.54	1,206	2,412
Pisani	Active	18.0	13.0	852.70	659.82	573.40	456.56	279.77									2,822.25	217	3,908
Sart	Active	78.0	15.0	101.73	48.28	129.50	79.25	52.43									411.20	27	2,138
Tributto	Active	30.0	10.5	340.23	101.58	273.18	281.56	180.29									1,176.85	112	3,362
Turbina	Active	130.0	16.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Alceir de Jesus	Active	27.0	10.0	0.00	0.00	65.22	88.65	141.01									294.88	29	796
Jaquirana	Active	220.0	16.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Madebins	Active	220.0	20.5	0.00	0.00	108.96	169.27	120.74									398.96	19	4,282
Boa Esperança Matriz	Active	50.0	14.0	767.01	442.93	427.31	482.31	584.90									2,704.45	193	9,659
Madeiraira Santa Paulina	Active	14.0	10.5	221.48	179.42	211.49	184.26	231.62									1,028.28	98	1,371
Vilso Isidoro	Active	40.0	15.0	0.00	0.00	0.00	122.00	0.00									122.00	8	325
Antonio Amarante	Active	70.0	17.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Sérgio Bochart	Active	58.0	16.0	17.31	67.38	48.42	89.59	37.34									260.05	16	943
Extrapae	Active	10.0	5.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Laminadora Catarinense	Active	4.0	9.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Pinus Forte	Active	3.0	9.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Alcides Inaldo Ramos Rosa	Active	27.0	10.0	8.25	94.86	34.23	23.54	33.82									194.70	19	526
José de Souza	Active	60.0	8.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Malke	Active	10.0	2.5	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Arno Tillmann	Active	52.0	16.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Floko	Active	100.0	30.0	0.00	0.00	570.14	729.68	221.24									1,521.06	51	5,070
Madeiraira Santa Rita	Active	14.0	11.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Aristides Araujo	Active	10.0	15.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Germino Vargas	Active	10.0	6.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Sérgio Luiz Bogorni	Active	50.0	15.0	0.00	47.48	0.00	0.00	0.00									47.48	3	158
Brazilian Pine	Active	2.0	12.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Celso Pedro Paese	Active	30.0	15.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Clesio Kauling	Active	70.0	13.0	262.99	98.51	104.31	50.18	128.74									644.73	50	3,472
Comboni	Active	160.0	10.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Eder Roberto Monn	Active	70.0	16.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Nilton Sabatini	Active	20.0	17.0	0.00	0.00	0.00	0.00	0.00									0.00	0	0
Olimpyo	Active	24.0	13.5	0.00	0.00	0.00	0.00	0.00									0.00	0	0

Gilberto Muniz Lima	Active	35.0	16.0	0.00	0.00	475.28	476.90	669.78										1,621.96	101	3,548
J.A. Maines	Active	170.0	12.5	388.46	148.55	134.18	134.75	143.14										949.08	76	12,908
JJ Tomazi	Active	25.0	11.5	0.00	0.00	0.00	0.00	0.00										0.00	0	0
Ravazin	Active	20.0	24.5	0.00	0.00	0.00	0.00	0.00										0.00	0	0
Madeira Norte Pontaltense	Active	160.0	17.0	0.00	0.00	0.00	0.00	0.00										0.00	0	0
Bonete Madeiras	Active	160.0	28.5	185.15	171.83	81.88	212.26	121.08										772.20	27	4,335
JJ Thomazi	Active	25.0	11.5	0.00	0.00	0.00	0.00	0.00										0.00	0	0
Lucemar Schmitz	Active	80.0	15.0	0.00	0.00	0.00	0.00	0.00										0.00	0	0
Prime Timber	Active	220.0	15.5	341.51	131.14	123.91	234.21	226.91										1,057.68	68	15,012
União Fosforeira	Active	150.0	13.5	0.00	0.00	0.00	0.00	0.00										0.00	0	0
Jair Philippi	Active	170.0	19.5	784.94	644.45	805.42	979.57	823.60										4,037.98	207	35,203
Anderson Chaves Pucci	Active	38.0	10.0	11.46	33.07	38.18	25.89	38.76										147.36	15	560
Raul Antonio Favero	Active	150.0	12.0	15.49	0.00	10.99	13.44	0.00										39.92	3	499
Agro Comercial Zandonadi Ltda.	Active	200.0	13.5	145.32	117.65	80.10	124.34	138.61										606.02	45	8,978
Neuri A. Chiodelli	Active	160.0	12.5	0.00	0.00	0.00	0.00	0.00										0.00	0	0
Neuri Carlos Telles	Active	88.0	15.0	0.00	0.00	0.00	0.00	0.00										0.00	0	0
Antonio Ermar Garcia e/ou Maria Ilza G. Garcia	Active	80.0	15.0	16.17	20.01	55.74	59.81	0.00										151.73	10	809
Brazimoveis	Active	160.0	12.0	26.11	19.29	8.62	0.00	21.53										75.55	6	1,007
Magdalena Presser Einsfeld	Active	60.0	15.0	0.00	123.85	0.00	0.00	0.00										123.85	8	495
Adelina Vieira dos Santos	Active	12.0	16.0	88.48	110.01	101.30	0.00	0.00										299.79	19	225
Agro Florestal Paequerê	Active	80.0	15.5	210.47	171.72	181.36	101.48	24.13										689.16	44	3,557
Getulio Alves de Oliveira	Active	85.0	16.0	32.48	72.31	20.36	0.00	56.32										181.47	11	964
Istelio José Souto-Maior Camargo	Active	8.0	11.0	231.90	120.10	221.69	142.23	63.35										779.26	71	567
Paulo Afonso Leal Narciso	Active	80.0	15.0	55.12	233.04	131.77	0.00	0.00										419.93	28	2,240
Victorio Genuino Agostini	Active	30.0	15.0	141.69	102.47	87.34	53.51	7.76										392.76	26	786
Antonio Carlos de Liz Stefan	Active	30.0	15.0	0.00	115.01	88.95	99.12	46.85										349.93	23	700
Caratino Madeiras Ltda.	Active	420.0	16.0	0.00	35.32	22.00	0.00	140.14										197.46	12	5,183
Coesa Agroflorestal	Active	68.0	12.0	0.00	17.30	29.04	0.00	10.13										56.47	5	320
Domingos da Silva Martins	Active	30.0	12.0	0.00	141.16	380.01	116.87	310.75										948.79	79	2,372
Edemar Antonio Rosseto	Active	60.0	15.0	0.00	12.30	32.90	64.39	70.17										179.76	12	719
João Luis Ronsoni	Active	80.0	15.0	0.00	111.91	24.93	0.00	23.53										160.36	11	855
José Canozio Alves Pereira	Active	75.0	15.0	0.00	9.61	0.00	9.10	6.04										24.75	2	124
Juliano Sérgio Lopes	Active	170.0	22.0	0.00	65.00	129.65	41.43	0.00										236.08	11	1,824
Marcus Aristoteles Zilli	Active	170.0	10.0	0.00	7.16	0.00	0.00	0.00										7.16	1	122
NP Madeiras	Active	180.0	12.5	0.00	33.46	10.66	0.00	0.00										44.12	4	635
Paulino Granzotto	Active	16.0	15.0	0.00	492.42	571.04	237.94	0.00										1,301.40	87	1,388
Silvio Muinz Matos	Active	80.0	16.0	0.00	11.05	18.77	53.63	34.27										117.72	7	589
Benjamin Luiz Valentini	Active	80.0	15.0	0.00	0.00	9.28	0.00	24.78										34.06	2	182
Darley Pedro Martini	Active	80.0	15.0	0.00	0.00	107.99	136.46	100.33										344.77	23	1,839
Finance Comercial	Active	72.0	16.0	0.00	0.00	44.03	11.80	31.65										87.48	5	394
José Alexandre Coelho	Active	100.0	15.0	0.00	0.00	85.10	88.68	0.00										173.78	12	1,159
José Mariano da Silva	Active	50.0	15.0	0.00	0.00	58.33	0.00	0.00										58.33	4	194
Luiz Antonio Stimamiglio	Active	30.0	16.0	0.00	0.00	46.33	39.40	188.84										274.58	17	515
Olimpio Antonio Candiago	Active	40.0	10.0	0.00	0.00	23.38	0.00	0.00										23.38	2	94
Orestes Macedo da Luz	Active	55.0	12.0	0.00	0.00	17.39	57.80	61.52										136.71	11	627
Paulo Cesar da Costa	Active	40.0	15.0	0.00	0.00	165.76	120.67	181.49										467.92	31	1,248
Aldo Silveira Flores	Active	11.0	15.0	0.00	0.00	0.00	58.82	148.79										207.61	14	152
Arno Volmi Arruda	Active	200.0	15.0	0.00	0.00	0.00	80.98	117.95										198.94	13	2,652
Dirlete Terezinha Pereira	Active	200.0	15.0	0.00	0.00	0.00	68.94	52.09										121.03	8	1,614
Gerson Coimbra de Figueiredo Filho	Active	30.0	15.0	0.00	0.00	0.00	177.86	29.96										207.81	14	416
Incohaut Madeiras Ltda.	Active	260.0	15.0	0.00	0.00	0.00	235.50	252.92										488.42	33	8,466
Jacyr José Tomazi	Active	88.0	15.0	0.00	0.00	0.00	92.85	48.02										140.87	9	826
João Lima de Andrade	Active	45.0	15.0	0.00	0.00	0.00	47.98	88.15										136.13	9	408
José Albanir Ferreira da Silva	Active	42.0	15.0	0.00	0.00	0.00	41.99	44.25										86.24	6	241
Madeira Trevo Ltda.	Active	30.0	15.0	0.00	0.00	0.00	11.80	29.29										41.08	3	82
Serraria Campos de Palmas S.A.	Active	80.0	15.0	0.00	0.00	0.00	3.77	0.00										3.77	0	20
Vilmar Laudelino Ferreira	Active	22.0	15.0	0.00	0.00	0.00	51.31	0.00										51.31	3	75
Nelson Moraes de Camargo	Active	60.0	15.0	0.00	0.00	0.00	0.00	88.63										88.63	6	355
Nery Nunes de Carvalho	Active	42.0	15.0	0.00	0.00	0.00	0.00	11.96										11.96	1	33
-																		0.00	0	0
-																		0.00	0	0
<b>Total</b>				<b>22,648.40</b>	<b>15,868.90</b>	<b>16,651.00</b>	<b>16,776.00</b>	<b>15,935.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>87,879.30</b>	<b>6,095</b>	<b>218,743</b>

Weighted average round trip distance to Lages Project [AC=AZ/AY]

= 35.9 km

Weighted average truck capacity [AD=A/AY]

= 14.4 tonnes

## PURCHASED AMOUNTS IN 2008

Wood waste suppliers	Purchased wood waste amount (tonnes/month)												Total purchased amount (tonnes/year)				
	Jan	Feb	Mar		Apr		May		Jun	Jul	Aug	Sep			Oct	Nov	Dec
Lages region																	
Battistella	2,967.98	14.38%	2,073.04	9.30%	2,045.34	9.14%	1,692.14	8.08%	1,663.58	7.83%		0.00%		0.00%	0.00%	10,442.08	9.71%
Sofia	0.00	0.00%	9.58	0.04%	0.00	0.00%	2.30	0.01%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	11.88	0.01%
Boa Esperança Paiqueré	1,366.51	6.62%	1,349.34	6.06%	1,375.69	6.15%	520.36	2.49%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	4,611.90	4.29%
Edeschons	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Janderson	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Madbras	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Madebampi	131.05	0.63%	163.46	0.73%	128.68	0.58%	125.97	0.60%	127.30	0.60%		0.00%	0.00%	0.00%	0.00%	676.46	0.63%
Madeira Lajes	0.00	0.00%	0.00	0.00%	102.60	0.46%	84.03	0.40%	111.19	0.52%		0.00%	0.00%	0.00%	0.00%	297.82	0.28%
Madepar	1,084.95	5.25%	1,777.60	7.98%	1,434.17	6.41%	1,500.69	7.17%	1,483.91	6.98%		0.00%	0.00%	0.00%	0.00%	7,281.33	6.77%
MJ Madeiras	894.66	4.33%	665.42	2.99%	319.35	1.43%	178.44	0.85%	380.10	1.79%		0.00%	0.00%	0.00%	0.00%	2,437.98	2.27%
Pandolfo	1,815.97	8.80%	1,695.23	7.61%	1,358.82	6.07%	1,311.24	6.26%	1,113.65	5.24%		0.00%	0.00%	0.00%	0.00%	7,294.89	6.79%
Pinusbras	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Polese	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Righez	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Araupel	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Claudio Paes	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Flora Pinus	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Indupinho	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Industiflora	827.16	4.01%	466.54	2.09%	712.54	3.18%	525.48	2.51%	249.46	1.17%		0.00%	0.00%	0.00%	0.00%	2,781.18	2.59%
Jose Alienir	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Lopes	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Martins	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Mengatto	1,222.66	5.92%	1,178.11	5.29%	1,160.39	5.19%	1,263.84	6.04%	1,541.34	7.25%		0.00%	0.00%	0.00%	0.00%	6,366.35	5.92%
Multiform	5,552.64	26.89%	5,868.47	26.33%	4,373.67	19.54%	4,665.15	22.28%	5,923.62	27.88%		0.00%	0.00%	0.00%	0.00%	26,383.55	24.55%
Pisani	777.32	3.76%	926.57	4.16%	770.63	3.44%	569.74	2.72%	373.03	1.76%		0.00%	0.00%	0.00%	0.00%	3,417.29	3.18%
Sart	92.74	0.45%	67.80	0.30%	174.05	0.78%	98.49	0.47%	69.91	0.33%		0.00%	0.00%	0.00%	0.00%	503.40	0.47%
Tributo	310.15	1.50%	142.65	0.64%	367.15	1.64%	351.36	1.68%	240.39	1.13%		0.00%	0.00%	0.00%	0.00%	1,411.70	1.31%
Turbina	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Aleir de Jesus	0.00	0.00%	0.00	0.00%	87.65	0.39%	110.63	0.53%	188.01	0.88%		0.00%	0.00%	0.00%	0.00%	386.29	0.36%
Iaquirana	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Madebins	0.00	0.00%	0.00	0.00%	146.44	0.65%	211.23	1.01%	160.98	0.76%		0.00%	0.00%	0.00%	0.00%	518.65	0.48%
Boa Esperança Matriz	699.20	3.39%	621.99	2.79%	574.29	2.57%	601.87	2.87%	779.86	3.67%		0.00%	0.00%	0.00%	0.00%	3,277.22	3.05%
Madeira Santa Paulina	201.90	0.98%	251.96	1.13%	284.23	1.27%	229.94	1.10%	308.83	1.45%		0.00%	0.00%	0.00%	0.00%	1,276.87	1.19%
Vilso Isidoro	0.00	0.00%	0.00	0.00%	0.00	0.00%	152.24	0.73%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	152.24	0.14%
Antonio Amarante	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Sérgio Boechert	15.78	0.08%	94.62	0.42%	65.08	0.29%	111.80	0.53%	49.79	0.23%		0.00%	0.00%	0.00%	0.00%	337.07	0.31%
Extrapac	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Laminadora Catarinense	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Pinus Forte	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Alcides Inaldo Ramos Rosa	7.52	0.04%	133.21	0.60%	46.01	0.21%	29.37	0.14%	45.09	0.21%		0.00%	0.00%	0.00%	0.00%	261.20	0.24%
José de Souza	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Malke	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Arno Tillmann	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Floko	0.00	0.00%	0.00	0.00%	766.26	3.42%	910.57	4.35%	294.98	1.39%		0.00%	0.00%	0.00%	0.00%	1,971.81	1.83%
Madeira Santa Rita	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Aristides Araújo	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Germino Vargas	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Sérgio Luiz Bogorni	0.00	0.00%	66.67	0.30%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	66.67	0.06%
Brazilian Pine	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Celso Pedro Paese	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Cleio Kauling	239.74	1.16%	138.34	0.62%	140.19	0.63%	62.62	0.30%	171.65	0.81%		0.00%	0.00%	0.00%	0.00%	752.54	0.70%
Comboni	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Eder Roberto Momm	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Nilton Sabatini	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Olimpyo	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%		0.00%	0.00%	0.00%	0.00%	0.00	0.00%

"Torete" amount purchased from Battistella	=	0.00 tonnes/year	Percentage of "Torete" in the wood waste purchased from Battistella	=	0.00%
"Torete" amount purchased from Sofia	=	0.00 tonnes/year	Percentage of "Torete" in the wood waste purchased from Sofia	=	0.00%
"Torete" amount purchased from Spot Market	=	25,325.81 tonnes/year	Percentage of "Torete" in the wood waste purchased from Spot Market	=	26.10%