

**CLEAN DEVELOPMENT MECHANISM  
PROJECT ACTIVITY MONITORING REPORT**

# **LAGES METHANE AVOIDANCE PROJECT**

**CDM Registration Reference Number: UNFCCC00000268CDMP**

**Monitoring Period: 1 Jun 2008 – 31 May 2009**

**Monitoring Report Number: 04**

**(Version 01)**

**November 23, 2009**

### History of the document

Version	Date	Nature of revision(s)
01	23 November 2009	Initial adoption

**CLEAN DEVELOPMENT MECHANISM  
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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:**

<b>Name of Party involved (*) ((host indicates a host Party)</b>	<b>Private and/or public entity(ies) project participants (as applicable)</b>	<b>Kindly indicate if the Party involved wishes to be considered as project participant</b>
Brazil	<ul style="list-style-type: none"> <li>• Lages Bioenergética Ltda.</li> <li>• Tractebel Energia S.A.</li> </ul>	Host Country
Switzerland	<ul style="list-style-type: none"> <li>• Bunge Emissions Fund Limited</li> </ul>	Involved indirectly
Canada	<ul style="list-style-type: none"> <li>• Government of Canada – Ministry of Foreign Affairs &amp; International Trade</li> </ul>	Involved directly
Finland	<ul style="list-style-type: none"> <li>• Fortum Corporation</li> <li>• Government of Finland – Ministry for Foreign Affairs of Finland</li> </ul>	Involved directly
France	<ul style="list-style-type: none"> <li>• GDF Suez</li> </ul>	Involved indirectly
Germany	<ul style="list-style-type: none"> <li>• RWE Power AG</li> </ul>	Involved indirectly
Japan	<ul style="list-style-type: none"> <li>• Chubu Electric Power Co., Inc.</li> <li>• Japan International Cooperation Agency (JICA)</li> <li>• Kyushu Electric Power Co., Inc.</li> <li>• MIT Carbon Fund Co., Ltd.</li> <li>• Mitsubishi Corporation</li> <li>• Shikoku Electric Power Co., Inc.</li> <li>• Tohoku Electric Power Co., Inc.</li> <li>• The Tokyo Electric Power Co., Inc.</li> <li>• The Chugoku Electric Power Co., Inc.</li> </ul>	Involved indirectly
Netherlands	<ul style="list-style-type: none"> <li>• Electrabel N.V.</li> <li>• The State of the Netherlands, acting through the Netherlands' Ministry of Housing, Spatial Planning and the Environment (VROM)</li> </ul>	Involved indirectly
Norway	<ul style="list-style-type: none"> <li>• Norsk Hydro ASA</li> <li>• Government of Norway – Ministry of Foreign Affairs</li> <li>• StatoilHydro ASA</li> </ul>	involved directly
Sweden	<ul style="list-style-type: none"> <li>• Government of Sweden – Swedish Energy Agency</li> </ul>	Involved directly
United Kingdom of Great Britain and Northern Ireland	<ul style="list-style-type: none"> <li>• BP Alternative Energy International Ltd.</li> <li>• Deutsche Bank AG</li> </ul>	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)
31 Aug 2009	Third CER issuance (247,668 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 fourth 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
04	1 Jun 2008	31 May 2009	157,914	DNV

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

The period covered in this monitoring report is from 1 June 2008 to 31 May 2009. 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 **157,914 tonnes of CO<sub>2</sub>e**.

This amount is around 28% lower 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 a lower load factor of the cogeneration plant during this period, consequently consuming and treating a wood waste amount lower 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]
2008	6	15,139.00	1,582.960	8.30%	0.00	0.00%	17,480.26	91.70%
	7	15,741.00	1,806.56	7.85%	0.00	0.00%	21,219.71	92.15%
	8	9,855.80	863.83	4.50%	0.00	0.00%	18,346.09	95.50%
	9	14,116.00	0.00	0.00%	0.00	0.00%	21,556.68	100.00%
	10	15,239.00	0.00	0.00%	0.00	0.00%	17,847.71	100.00%
	11	17,348.80	0.00	0.00%	0.00	0.00%	19,255.70	100.00%
	12	12,169.00	0.00	0.00%	0.00	0.00%	20,307.41	100.00%
	<b>Total</b>	<b>99,608.60</b>	<b>4,253.35</b>	<b>3.03%</b>	<b>0.00</b>	<b>0.00%</b>	<b>136,013.55</b>	<b>96.97%</b>
2009	1	14,789.00	0.00	0.00%	0.00	0.00%	18,815.12	100.00%
	2	13,854.00	0.00	0.00%	0.00	0.00%	17,645.75	100.00%
	3	16,773.00	0.00	0.00%	0.00	0.00%	21,640.01	100.00%
	4	12,229.00	0.00	0.00%	0.00	0.00%	20,218.21	100.00%
	5	14,516.00	0.00	0.00%	0.00	0.00%	20,215.94	100.00%
	<b>Total</b>	<b>72,161.00</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00</b>	<b>0.00%</b>	<b>98,535.03</b>	<b>100.00%</b>

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. Sofia and Battistella had been facing this crisis and completely closed down at September 2007 and October 2008 respectively, what justifies the significant reduction in the amounts of wood waste purchased from them.

As consequence, to substitute the biomass reduction from Battistella and Sofia, it was required a wood waste supply increasing from the many other Spot Market suppliers (please note the increase in the number of wood waste suppliers in 2008/2009 in relation to 2006/2007 as presented in the Annex 1). A clarification regarding the increased number of the Spot Market suppliers during this monitoring period and a confirmation that Spot Market suppliers which supplied wood waste during this monitoring period only supply materials originated from the main planted forest in the State of Santa Catarina are provided below in the end of this Section B.4.1, respectively in the Clarification 1 and Clarification 2.

In addition to that, the reduction in the wood waste amount available due to the non-stop USD devaluation, keeping the Spot Market wood waste prices high, as explained above, demanded the continual adoption of biomass purchasing from some more distant suppliers (since the lower wood waste prices from these suppliers compensates the higher transportation costs) and the “toretas” (fine branches lower than 15cm diameter) purchasing by the Lages Project operator during the period covered in this monitoring report. The table below presents the amount of biomass and “toretas” 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]
2008	6 to 12	4,253.35	0.00	0.00%	0.00	0.00	0.00%	136,013.55	29,304.70	21.55%
2009	1 to 5	0.00	0.00	0.00%	0.00	0.00	0.00%	98,535.03	18,502.72	18.78%

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)
2008	6 to 12	2,935.28	0.00	96,673.32
2009	1 to 5	0.00	0.00	72,161.00

The information about the calibration of the dynamic balance installed in the entrance of the combustion chamber of the boiler and used to measure the amount of wood waste consumed by the Project, as well as, about the calibration of the electronic balances installed in the power plant entrance to measure the amount of wood waste purchased from each supplier<sup>1</sup> are presented in the table below.

Balance Type	Balance Number	Calibration Certificate Number	Certifier	Date	Validity
Dynamic	3092000123	0080589	Toledo	20 Jun 2007	18 months
Dynamic	3092000123	0080677	Toledo	06 May 2008	18 months
Dynamic	3092000123	0080839	Toledo	17 Jun 2009	18 months
Electronic (way in)	3077001100	0577533	INMETRO	22 Jun 2007	18 months
Electronic (way in)	3077001100	1230289-2	INMETRO	02 Oct 2008	18 months
Electronic (way in)	3077001100	1190475-6	INMETRO	03 Jul 2009	18 months
Electronic (way out)	3077001101	0577532	INMETRO	22 Jun 2007	18 months
Electronic (way out)	3077001101	1230288-0	INMETRO	02 Oct 2008	18 months
Electronic (way out)	3077001101	1190476-8	INMETRO	03 Jul 2009	18 months

<sup>1</sup> The weighting procedure is to weight the truck in its way in, i.e. the truck with wood waste, and to weight the truck in its way out, i.e. the truck without wood waste. The difference between the weight values is the amount of wood waste delivered by a given supplier.

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, 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
		$QT_{\text{biomass}}$ $[H=(E-I-J)*(1-\alpha)]^2$	Wood waste burned for own consumption [I]	Wood waste burned spontaneously in the pile $[J=R*(E-I)]$	$QT_{\text{biomass}}$ $[K=(F-L)*(1-\beta)]^3$	Wood waste burned for own consumption [L]	$QT_{\text{biomass}}$ $[M=G*(1-\gamma)]$
		(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
2008	6 to 12	0.00	19,040.00	0.00	0.00	8,400.00	75,844.64
2009	1 to 5	0.00	13,600.00	0.00	0.00	6,000.00	58,610.74

#### Clarification 1:

According to established in the PDD, the baseline for the project was defined in 2001 when the implementation decision was taken. The additionality of the project was established through a barrier analysis: (i) technological barriers (the project represented one of the first applications of the technology in the country, leading to technological concerns even when the technology had been proven in other countries), (ii) barriers due to prevailing practice (there was a lack of will to change the biomass disposal practice with or without regulations) and (iii) other barriers (lack of experience and/or procedures for collecting the biomass from dispersed sources).

- Barrier (i) existed because Lages Project was the first cogeneration plant in Brazil, in its installed capacity range, that was built to produce steam for industrial use and electricity for the national grid as main activity, using wood waste as fuel. Since the project was the first of its kind in terms of size, technology and objective, there was not historical data available that could be used to quantitatively estimate technological/investment risks.

<sup>2</sup> Since the wood waste amount consumed ( $QC_{\text{biomass}}$ ) from Battistella in 2008 (from June to December) and 2009 (from January to May) was lower than the wood waste amount 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 and consequent close down in the period.

<sup>3</sup> Since the wood waste amount consumed ( $QC_{\text{biomass}}$ ) from Sofia in 2008 (from June to December) and 2009 (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 and consequent close down in the period.

- Barrier (ii) was demonstrated, among others, using a study/survey conducted by UNIPLAC which concluded the total of wood waste estimated to be produced in Lages region and unused and inappropriately disposed was 23,000 tonnes/month, totaling 276,000 tonnes/year (see first paragraph in the page 14 of the PDD).

- Barrier (iii) existed because the project developer had to put in place a new logistics program to implement the new Project scenario, given that the facility itself had no sources of wood waste. Hence, using wood waste as fuel also entailed more commercial and management risks for the facility.

According to this analysis and the evidences evaluated by the DOE during the validation process, the baseline scenario to Lages Project was defined as the business-as-usual scenario of continued dumping of wood waste in stockpiles.

From the project operation and the implementation of logistics systems to the wood waste transportation (initially a barrier), as expected, was created a wood waste local market originally not existent, giving a correct destination to the residues, aggregating value to them (increase in the biomass prices), attracting other wood waste consumers to the Lages region and modifying the original scenario used as baseline. This is the main reason to the increase in the number of Spot Market suppliers, for instance.

Hence, and also considering that the Attachment C was not yet adopted at the time that the Lages Project was submitted for registration and the baseline scenario shall be defined only ex-ante at the beginning of each crediting period, is possible to conclude that in the absence of the project activity, at least 276,000 tonnes/year would have been left to decay in the Lages region, not been necessary to verify each wood waste supplier separately.

As the total wood waste treated (QTbiomass) by Lages Project in this monitoring period (Jun 1st 2008 to May 31st 2009 - equivalent to 1 year) was 134,455.38 tonnes (see table above), all this amount has would been piled and left to decay in the absence of the project.

#### Clarification 2:

Lages Project uses only wood waste (including "toretas") from renewable biomass, specifically from pinus, an exotic specie used in reforested plantations in the Lages region. State of Santa Catarina has 17% of the pinus forests in Brazil and Lages region has 20% of the pinus forests in the State of Santa Catarina. Additionally, the use of native species is constantly fiscalized by the state environmental authority (called FATMA) forbidding the use of non-renewable biomass in the region.

During the site visit the DOE could verify the use of renewable biomass (from pinus – planted forests) analysing samples of the biomass invoices, checking the results of the analysis carried out by an independent laboratory to verify the quality of the wood waste consumed by the project and performing visual inspections in the wood waste inventory of the project.

#### **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>4</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>4</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>4</sup> , Volume 5, Chapter 3, Page 3.13	IPCC default value is applied.
F [Q]	0.5	(fraction)	IPCC <sup>4</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.
E <sub>biomass</sub> [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.

<sup>4</sup> 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

Default values				
ID5				
Parameter	Value	Unit	Data source	Comment
CH <sub>4</sub> bio_comb [T]	11	kgCH <sub>4</sub> /TJ	IPCC <sup>4</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.
N <sub>2</sub> Obio_comb [U]	7	kgN <sub>2</sub> O/TJ	IPCC <sup>4</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.
CH <sub>4</sub> _GWP [V]	21	tCO <sub>2</sub> e/tCH <sub>4</sub>	UNFCCC <sup>5</sup>	Official value.
N <sub>2</sub> O_GWP [W]	310	tCO <sub>2</sub> e/tN <sub>2</sub> O	UNFCCC <sup>5</sup>	Official value.
D <sub>diesel</sub> [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.
VEF_CO <sub>2</sub> [Y]	1.097 3,172.31	kgCO <sub>2</sub> /km kgCO <sub>2</sub> /t	IPCC <sup>6</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.
VEF_CH <sub>4</sub> [Z]	6.0E-5 0.18	kgCH <sub>4</sub> /km kgCH <sub>4</sub> /t	IPCC <sup>6</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.
VEF_N <sub>2</sub> O [AA]	3.1E-5 0.09	kgN <sub>2</sub> O/km kgN <sub>2</sub> O/t	IPCC <sup>6</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>5</sup> Climate Change 1995, The Science of Climate Change: Summary for Policymakers and Technical Summary of the Working Group I Report, pg. 22.

<sup>6</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)
2008	6	5,230.70
	7	5,854.60
	8	6,386.10
	9	5,664.40
	10	4,844.40
	11	5,810.50
	12	7,303.50
	Total	41,094.20
2009	1	4,811.70
	2	4,201.30
	3	6,485.60
	4	5,932.20
	5	5,285.80
	Total	26,716.60

**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)
2008	6 to 12	39.5	15.7
2009	1 to 5	45.1	16.1

**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 until July 2008 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. From August 2008 on, aligned with the Environmental Agency approval, the ash produced has been disposed at Lages Region, reducing the round trip distance and consequently greenhouse gas emissions from ash transportation.

Ash transportation			
Year	Month	ID9	ID10
		AVD <sub>ash</sub> [AE]	TC <sub>ash</sub> [AF]
		(km)	(tonnes)
2008	6 to 12	242.2	22.6
2009	1 to 5	71.5	16.9

**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)
2008	6	808.67
	7	923.21
	8	531.39
	9	870.94
	10	849.31
	11	899.32
	12	711.94
	Total	<b>5,594.78</b>
2009	1	933.43
	2	764.95
	3	820.34
	4	489.01
	5	559.38
	Total	<b>3,567.11</b>



## 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 (t $CO_2e$ /year);
- $QT_{biomass}$ : Quantity of biomass treated under the project activity (t/year);
- $CH_4\_GWP$ : Global Warming Potential for  $CH_4$  (t $CO_2e$ /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);
- $CH_4_{bio\_comb}$ : 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<sub>2</sub>e/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> _IPCCdecay)						
Wood waste suppliers	IPCC CH <sub>4</sub> emission factor for decaying biomass (CH <sub>4</sub> _IPCCdecay) [AH=N*Q*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> _IPCCdecay) [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	21
2005	0	0.00	0.1147	
2006	0	0.00	0.1147	
2007	0	0.00	0.1147	
2008	0	0.00	0.1147	
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	
Total	0	0.00	-	-

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> _IPCCdecay) [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	21
2005	0	0.00	0.0573	
2006	0	0.00	0.0573	
2007	0	0.00	0.0573	
2008	0	0.00	0.0573	
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	
Total	0	0.00	-	-

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]
2004	0	0.00	0.0573	
2005	0	0.00	0.0573	
2006	0	0.00	0.0573	
2007	0	0.00	0.0573	
2008	91,317	75,844.64	0.0573	21
2009	70,567	58,610.74	0.0573	21
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>161,884</b>	<b>134,455.38</b>	<b>-</b>	<b>-</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	0	0	0	0
2008	91,317	0	0	91,317
2009	70,567	0	0	70,567
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>161,884</b>	<b>0</b>	<b>0</b>	<b>161,884</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]	N <sub>2</sub> O emission factor for biomass and waste combustion (N <sub>2</sub> O-bio_comb) [U] (kgN <sub>2</sub> O/TJ)	GWP for N <sub>2</sub> O (N <sub>2</sub> O-GWP) [W]
2004	0.000	0.00					
2005	0.000	0.00					
2006	0.000	0.00					
2007	0.000	0.00					
2008	1.853	99,608.60	7.746E-03	11	21	7	310
2009	1.342	72,161.00	7.746E-03	11	21	7	310
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>3.195</b>	<b>171,769.60</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

Emissions from on-site transportation (OT_GHG <sub>y</sub> )								
Year	Emissions from on-site transportation (OT_GHG <sub>y</sub> ) [AO=AB*X*(Y+Z*V+AA*W)/10^6] (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	0.000							
2008	0.116	41,094.20	8.80E-04	3,172.31	0.18	21	0.09	310
2009	0.075	26,716.60	8.80E-04	3,172.31	0.18	21	0.09	310
2010	0.000							
2011	0.000							
2012	0.000							
2013	0.000							
2014	0.000							
<b>Total</b>	<b>0.191</b>	<b>67,810.80</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>y</sub> )								
Year	Emissions from off-site transportation (BT_GHG <sub>y</sub> ) [AP=A/AD*AC*(Y+Z*V+AA*W)/10^6] (ktCO <sub>2</sub> e/year)	Quantity of biomass consumed by project activity (Q <sub>C<sub>biomass</sub></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	0.000	0.00						
2008	0.278	99,608.60	15.7	39.5	1.097	6.0E-05	21	3.1E-05
2009	0.224	72,161.00	16.1	45.1	1.097	6.0E-05	21	3.1E-05
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>0.502</b>	<b>171,769.60</b>	-	-	-	-	-	-

Emissions from ash transportation (AT_GHG <sub>y</sub> )								
Year	Emissions from ash transportation (AT_GHG <sub>y</sub> ) [AQ=AG/AF*AE*(Y+Z*V+AA*W)/10^6] (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	0.000							
2008	0.066	5,594.78	22.6	242.2	1.097	6.0E-05	21	3.1E-05
2009	0.017	3,567.11	16.9	71.5	1.097	6.0E-05	21	3.1E-05
2010	0.000							
2011	0.000							
2012	0.000							
2013	0.000							
2014	0.000							
<b>Total</b>	<b>0.083</b>	<b>9,161.89</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	0.000	0.000	0.000
2008	0.344	0.278	0.066
2009	0.241	0.224	0.017
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>0.585</b>	<b>0.502</b>	<b>0.083</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	0.000	0.000	0.000	0.000
2008	2.312	1.853	0.116	0.344
2009	1.658	1.342	0.075	0.241
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>3.971</b>	<b>3.195</b>	<b>0.191</b>	<b>0.585</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	0	0	0
2008	89,005	91,317	2,312
2009	68,909	70,567	1,658
2010	0	0	0
2011	0	0	0
2012	0	0	0
2013	0	0	0
2014	0	0	0
<b>Total</b>	<b>157,914</b>	<b>161,884</b>	<b>3,971</b>



### CONSUMED AMOUNTS IN 2008

[illegible]

Flora Pinus	Inactive	6.0	3.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Genilda Correa	Active	90.0	10.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.79	14.10	0.00	0.00	0.00	18.89	2	167	
Germino Vargas	Inactive	10.0	6.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Gerson Coimbra de Figueiredo Filho	Active	60.0	17.5	0.00	0.00	0.00	0.00	0.00	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	21.35	10.79	0.00	41.30	24.69	0.00	0.00	98.14	6	521	
Gilberto Muniz Lima	Active	35.0	19.5	0.00	0.00	0.00	0.00	0.00	490.46	510.03	323.73	534.52	669.65	1,212.49	413.92	4,154.79	213	7,465	
Gilmar Sasso Correia	Active	100.0	16.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.41	13.23	0.00	0.00	24.64	1	150		
Gilmar Guanabara	Active	112.0	14.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0		
Incohaut Madeiras Ltda	Active	240.0	23.2	0.00	0.00	0.00	0.00	0.00	302.62	340.88	224.78	259.23	292.41	223.20	176.59	1,819.72	78	18,808	
Indupinho	Inactive	100.0	16.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0		
Indusflora	Active	30.0	17.4	0.00	0.00	0.00	0.00	0.00	441.58	83.63	279.35	539.04	241.20	140.65	116.73	1,842.19	106	3,169	
Istelio José Souto-Maior Camargo	Active	8.0	14.9	0.00	0.00	0.00	0.00	0.00	19.39	116.17	119.69	46.69	190.98	284.62	209.73	987.27	66	531	
J.A. Maines	Active	170.0	16.8	0.00	0.00	0.00	0.00	0.00	88.60	0.00	0.00	0.00	0.00	0.00	88.60	5	896		
Jacyr Jose tomazi	Active	140.0	14.6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.38	1	167		
Jair Philippi	Active	170.0	24.4	0.00	0.00	0.00	0.00	0.00	743.42	796.86	563.53	751.34	878.54	683.93	236.54	4,654.15	191	32,434	
Jair Philippi Filho	Active	220.0	24.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.78	27.96	0.00	0.00	62.75	3	570	
Janderson	Inactive	16.0	12.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Jaquirana	Inactive	220.0	16.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
JJ Thomazi	Active	25.0	11.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
João Lima de Andrade	Active	90.0	14.3	0.00	0.00	0.00	0.00	0.00	11.59	64.15	0.00	0.00	0.00	0.00	0.00	75.74	5	477	
João Luis Ronsoni	Active	80.0	16.7	0.00	0.00	0.00	0.00	0.00	78.86	56.13	7.77	21.92	0.00	0.00	0.00	164.68	10	787	
João Raimundo colombo	Active	10.0	11.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	207.72	46.13	0.00	15.15	269.01	23	231		
Joaquim da Silva Pacheco	Active	80.0	14.9	0.00	0.00	0.00	0.00	0.00	0.00	182.73	199.28	247.75	269.92	331.00	195.30	1,425.98	96	7,663	
Jose Albanir Ferreira da Silva	Active	40.0	8.5	0.00	0.00	0.00	0.00	0.00	33.52	0.00	0.00	0.00	0.00	0.00	33.52	4	157		
José Alexandre Coelho	Active	100.0	17.3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Jose Altenir	Active	30.0	17.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Jose Canozio Alves Pereira	Active	150.0	14.6	0.00	0.00	0.00	0.00	0.00	0.00	21.14	29.26	19.34	29.34	40.53	18.47	158.08	11	1,629	
José de Souza	Active	60.0	8.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
José Mariano da Silva	Active	50.0	15.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Juliano Sérgio Lopes	Active	170.0	18.1	0.00	0.00	0.00	0.00	0.00	0.00	22.14	24.56	33.15	89.16	86.76	38.74	294.52	16	2,767	
Klabin	Active	84.0	28.1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.98	0.00	0.00	23.98	1	72	
Laminadora Catarinense	Active	4.0	11.1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Lopes	Inactive	100.0	14.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Luiz Antonio Stimamiglio	Active	30.0	17.6	0.00	0.00	0.00	0.00	0.00	23.36	28.80	0.00	0.00	0.00	27.43	9.79	89.38	5	152	
Luiz Fernando Figueiredo	Active	3.0	13.4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	109.62	146.59	233.15	160.71	650.07	48	145	
Mad. Nossa Senhora de Lourdes Ltda	Active	300.0	16.3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.99	265.92	306.92	306.92	19	5,654	
Madbras	Inactive	40.0	6.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Madebampi	Active	10.0	13.8	0.00	0.00	0.00	0.00	0.00	474.08	656.55	249.33	201.54	262.37	277.93	309.87	2,431.68	176	1,763	
Madebins	Active	220.0	20.5	0.00	0.00	0.00	0.00	0.00	102.16	0.00	0.00	0.00	0.00	0.00	0.00	102.16	5	1,096	
Madeiraira Boa Parada	Active	70.0	13.8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Madeiraira Lajes	Active	3.0	14.5	0.00	0.00	0.00	0.00	0.00	107.02	100.94	54.34	37.53	127.04	78.47	60.67	566.02	39	117	
Madeiraira Norte Pontaltense	Active	160.0	17.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Madeiraira Santa Paulina	Active	14.0	11.5	0.00	0.00	0.00	0.00	0.00	263.04	274.82	213.20	304.65	389.95	432.78	146.53	2,024.97	176	2,469	
Madeiraira Santa Rita	Inactive	14.0	11.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Madeiraira Trevo Ltda	Active	16.0	13.6	0.00	0.00	0.00	0.00	0.00	11.48	10.38	0.00	16.39	96.36	76.37	58.52	269.50	20	317	
Madepar	Active	4.0	13.3	0.00	0.00	0.00	0.00	0.00	1,385.76	1,099.54	478.70	1,012.50	823.34	1,193.71	528.39	6,521.95	489	1,955	
Magdalena Presser Einsfeld	Active	60.0	17.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Malke	Active	10.0	10.9	0.00	0.00	0.00	0.00	0.00	60.79	0.00	0.00	0.00	0.00	0.00	0.00	60.79	6	56	
Marcos Narciso Agostini	Active	110.0	17.4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	167.54	137.09	304.63	18	1,927	
Marcus Aristoteles Zilli	Active	170.0	10.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Martins	Inactive	16.0	8.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Mengatto	Active	5.0	15.5	0.00	0.00	0.00	0.00	0.00	770.10	1,051.83	596.35	828.00	1,014.15	992.33	663.65	5,916.41	382	1,909	
Mercedes Webber dos Santos	Active	60.0	12.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.93	45.03	25.39	40.44	38.19	169.98	13	792	
MJ Madeiras	Active	5.0	11.5	0.00	0.00	0.00	0.00	0.00	454.01	463.93	229.58	239.29	366.54	482.96	271.84	2,508.13	218	1,090	
MS Madeiras Ltda	Active	160.0	26.6	0.00	0.00	0.00	0.00	0.00	60.75	71.70	28.40	0.00	23.98	25.67	15.93	226.43	9	1,362	
Multiform	Active	2.0	18.0	0.00	0.00	0.00	0.00	0.00	4,180.31	4,505.30	3,257.14	4,636.26	4,932.43	5,707.25	4,907.90	32,126.60	1,785	3,570	
Nelson Moraes de Camargo	Active	30.0	9.9	0.00	0.00	0.00	0.00	0.00	36.09	0.00	11.61	15.31	0.00	6.96	13.59	83.56	8	252	
Neri Antonio Chiodelli Junior	Active	160.0	12.6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	92.73	43.66	71.86	29.38	10.10	247.72	20	3,137	
Nery Nunes de Carvalho	Active	100.0	13.3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.23	8.23	1	62	
Neuri A. Chiodelli	Active	160.0	16.6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Neuza Bianchini Arruda	Active	90.0	15.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.65	114.40	64.27	0.00	110.24	60.96	30	2,707	
Nilton Sabatini	Active	20.0	8.1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.55	85.36	106.81	214.72	27	531	
NP Madeiras	Active	180.0	15.7	0.00	0.00	0.00	0.00	0.00	34.31	0.00	26.90	0.00	29.54	43.55	30.96	165.26	11	1,891	
Olimpio Antonio Candiago	Active	40.0	9.9	0.00	0.00	0.00	0.00	0.00	31.17	11.10	8.34	5.72	0.00	0.00	7.43	63.76	6	259	
Olimpyo	Active	24.0	13.5	0.00	0.00	0.00	0.00	0.00	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	12.4	0.00	0.00	0.00	0.00	0.00	49.44	28.63	13.97	0.00	0.00	0.00	0.00	92.03	7	410	
P & P Móveis de Confeccões Ltda	Active	5.0	15.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	476.23	625.16	484.16	372.08	1,957.64	130	615	

Pandolfo	Active	3.0	10.9	0.00	0.00	0.00	0.00	0.00	894.09	686.27	333.55	715.18	842.80	1,003.27	581.94	5,057.10	463	1,389
Paulino Granzotto	Active	16.0	15.0	0.00	0.00	0.00	0.00	0.00	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	17.9	0.00	0.00	0.00	0.00	0.00	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	15.8	0.00	0.00	0.00	0.00	0.00	182.48	33.07	0.00	0.00	0.00	0.00	36.82	252.37	16	640
Pinus Bom Jesus	Active	360.0	25.0	0.00	0.00	0.00	0.00	0.00	22.49	0.00	47.61	469.76	796.94	720.33	278.71	2,335.84	93	33,622
Pinus Forte	Inactive	3.0	9.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Pinusbras	Inactive	5.0	9.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Pisani	Active	18.0	14.9	0.00	0.00	0.00	0.00	0.00	130.18	171.48	49.66	54.93	0.00	0.00	0.00	406.25	27	492
Polesse	Inactive	26.0	7.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Prime Timber	Active	220.0	17.6	0.00	0.00	0.00	0.00	0.00	164.18	127.68	98.07	130.67	152.83	129.10	125.03	927.56	53	11,589
Raul Antonio Favero	Active	150.0	16.3	0.00	0.00	0.00	0.00	0.00	79.05	151.56	26.35	33.38	0.00	15.92	39.56	345.82	21	3,187
Ravazin	Active	20.0	24.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Resíduos Bioenergia	Active	400.0	18.4	0.00	0.00	0.00	0.00	0.00	127.24	227.72	97.01	58.18	0.00	0.00	0.00	510.15	28	11,112
Righez	Inactive	50.0	15.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
RP Madeiras Ind. e Com. Ltda	Active	30.0	15.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Sart	Active	78.0	10.5	0.00	0.00	0.00	0.00	0.00	13.94	68.74	41.27	26.98	4.55	0.00	0.00	155.47	15	1,155
Sérgio Bochert	Active	58.0	15.4	0.00	0.00	0.00	0.00	0.00	13.56	9.96	0.00	0.00	0.00	0.00	0.00	23.52	2	89
Sérgio Luiz Bogorni	Active	50.0	15.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Serraria Campos de Palmas S.A	Active	70.0	4.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Silvio Muinz Matos	Active	80.0	15.0	0.00	0.00	0.00	0.00	0.00	0.00	82.31	71.92	21.65	13.58	51.30	45.93	286.69	19	1,531
Tributo	Active	30.0	12.2	0.00	0.00	0.00	0.00	0.00	70.68	221.05	119.45	162.70	108.30	10.52	142.38	835.07	69	2,058
Turbina	Inactive	130.0	16.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
União Fosforeira	Inactive	150.0	13.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Valdeci Nunes de Carvalho	Active	60.0	14.1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.55	40.98	172.88	149.41	373.81	27	1,590
Victorio Genuino Agostini	Active	30.0	14.6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Vilmar Laudelino Ferreira	Active	66.0	16.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Vilso Isidoro	Active	40.0	15.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Wilson de souza Machado	Active	110.0	15.8	0.00	0.00	0.00	0.00	0.00	0.00	21.55	0.00	0.00	0.00	0.00	0.00	21.55	1	150
Zilda Eliza Letti Pelizzaro	Active	120.0	14.2	0.00	0.00	0.00	0.00	0.00	0.00	65.58	56.14	51.67	45.00	101.01	18.25	337.65	24	2,856
<b>Total</b>				<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>15,139.00</b>	<b>15,741.00</b>	<b>9,855.80</b>	<b>14,116.00</b>	<b>15,239.00</b>	<b>17,348.80</b>	<b>12,169.00</b>	<b>99,609</b>	<b>6,337</b>	<b>250,578</b>

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

= 39.5 km

Weighted average truck capacity [AD=A/AY]

= 15.7 tonnes

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%	1,582.96	8.30%	1,806.56	7.85%	863.83	4.50%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	4,253.35	3.03%	
Sofia	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00	0.00%	
Adelia Tealdi	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	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%	14.13	0.07%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	14.13	0.01%	
Adilson Tadeu Coelho	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	19.09	0.08%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	19.09	0.01%	
Agro Comercial Zandonadi Ltda.	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	131.42	0.69%	18.06	0.08%	65.60	0.34%	136.81	0.63%	146.83	0.82%	170.31	0.88%	0.00	669.05	0.48%	
Agro Florestal Paqueté	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00	0.00%	
Agroflorestal Serra	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	258.95	1.28%	258.95	0.18%
Alceir de Jesus	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	65.87	0.29%	0.00	0.00%	212.49	0.99%	68.74	0.39%	0.00	0.00%	12.82	0.06%	359.92	0.26%
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%	8.39	0.04%	25.06	0.12%	0.00	0.00%	0.00	0.00%	0.00	33.45	0.02%	
Aldo Silveira flores	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	45.00	0.23%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	45.00	0.03%	
Alexandre Coelho 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%	
Altair Benício Luz	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	110.00	0.57%	93.05	0.43%	12.77	0.07%	10.43	0.05%	0.00	226.25	0.16%	
Anelson Chaves Pucci	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	21.38	0.09%	0.00	0.00%	20.82	0.10%	0.00	0.00%	21.15	0.10%	50.38	0.28	0.00	137.38	0.09%	
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	0.00%	
Antonio Carlos de Liz Stefan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	174.11	0.91%	139.27	0.60%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	313.38	0.22%	
Antonio Ermar Garcia e/Iou Maria Ilza G. Garcia	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	16.46	0.09%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	16.46	0.01%	
Apretre 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%	16.65	0.08%	0.00	0.00%	0.00	0.00%	0.00	16.65	0.01%	
Araucari	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	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	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	0.00%	0.00	0.00%	0.00	0.00	0.00%	
Arno Volni Arruda	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	127.90	0.67%	99.93	0.43%	17.55	0.09%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	245.38	0.17%	
Benjamin Luiz Valentini	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	15.95	0.07%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	15.95	0.01%	
Biopine 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%	
Boa Esperança Matriz	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	950.82	4.99%	1,121.57	4.87%	1,185.42	6.17%	1,183.77	5.49%	1,164.28	6.52%	1,040.85	5.41%	744.38	3.67%	7,391.11	5.27%
Boa Esperança Paqueté	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	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 Madeiras	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	18.44	0.12%	73.44	0.32%	30.19	0.15%	8.38	0.04%	78.13	0.44%	43.44	0.22%	166.95	425.27	0.30%	
Brazilian Pac	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00	0.00%	
Brazimoveis	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	16.07	0.08%	14.80	0.06%	21.45	0.11%	13.10	0.06%	14.96	0.08%	0.00	0.00%	40.55	0.20%	120.93	0.09%
Carauão Madeiras Ltda.	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	269.78	1.42%	308.71	1.34%	289.53	1.51%	158.57	0.74%	0.00	0.00%	0.00	0.00%	0.00	1,026.59	0.73%	
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	0.00%	0.00	0.00%	0.00	0.00	0.00%	
Claudio Pais	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	111.53	0.48%	128.64	0.67%	160.79	0.75%	96.04	0.54%	160.00	0.83%	0.00	657.00	0.47%	
Cleio Kauling	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	113.37	0.60%	223.35	0.97%	63.12	0.33%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	400.04	0.29%	
Clevis Arruda Vieira	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00	0.00%	
Coes Agroflorestal	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	112.61	0.59%	138.59	0.60%	95.34	0.50%	67.69	0.31%	61.48	0.34%	129.77	0.67%	71.07	676.55	0.49%	
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	0.00%	0.00	0.00%	0.00	0.00	0.00%	
Comércio de Madeira Beija Flor 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%	
Cooperativa Agropecuária de Tubarão	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	24.60	0.11%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	24.60	0.02%	
Darley Pedro Martini	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	116.02	0.61%	156.24	0.68%	157.70	0.82%	227.47	1.06%	59.06	0.33%	0.00	0.00%	0.00	716.49	0.51%	
Delcize Maria Zanotto Della Giustina	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	146.63	0.72%	146.63	0.10%
Diogo James Ventorini	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	93.13	0.40%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	33.45	0.17%	145.59	0.10%
Dirlete Terezinha Perez	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	65.24	0.34%	85.95	0.37%	116.64	0.61%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	267.83	0.19%	
Domingos da Silva Martins	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	205.12	1.08%	85.81	0.37%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	290.93	0.21%	
Edemar Antonio Rosseto	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	52.98	0.28%	152.56	0.66%	151.44	0.79%	55.33	0.26%	29.81	0.17%	111.31	0.58%	14.17	567.60	0.40%	
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	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00	0.00%	
Edeschos	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00	0.00%	
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	0.00%	
F. Klum	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00	0.00%	
Finance 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%	
Floko	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	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	0.00%	
Genilda Correa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	9.34	0.05%	21.53	0.10%	0.00	0.00%	0.00	0.00%	0.00	30.87	0.02%	
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	0.00%	
Gerson Coimbra de Figueiredo Filho	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00	0.00%	
Genildo Alves Oliveira	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	26.89	0.14%	15.79	0.07%	0.00	0.00%	63.07	0.29%	28.92	0.16%	0.00	0.00%	0.00	134.67	0.10%	
Gilberto Mantz Lima	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%	617.59	3.24%	746.08	3.24%	630.99	3.28%	816.27	3.79%	784.28	4.39%	1,345.76	6.99%	690.74	5,631.71	4.	

"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	=	29,304.70 tonnes/year	Percentage of "Torete" in the wood waste purchased from Spot Market	=	21.55%

## CONSUMED AMOUNTS IN 2009

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Sofia	Inactive	4.0	4.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Adelia Tealdi	Active	90.0	13.8	0.00	0.00	31.92	16.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4	318
Adelina Vieira dos Santos	Active	12.0	11.3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Adilson Tadeu Coelho	Active	60.0	6.4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Agro Comercial Zandonadi Ltda.	Active	200.0	16.1	127.72	125.27	74.33	29.86	48.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25	5,041
Agro Florestal Paquerê	Active	80.0	16.6	0.00	74.37	69.63	358.32	343.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51	4,078
Agroflorestal Serrana	Active	146.0	18.9	301.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16	2,328
Alceir de Jesus	Active	27.0	18.4	0.00	11.49	10.48	9.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2	46
Alcides Inaldo Ramos Rosa	Active	27.0	9.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Aldo Silveira flores	Active	22.0	16.8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Alexandre Coelho de Oliveira	Active	14.0	11.1	0.00	0.00	201.08	288.94	329.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	74	1,036
Altair Benicio Luz	Active	120.0	10.8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Anderson Chaves Pucci	Active	38.0	10.1	15.67	22.41	30.93	17.35	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9	350
Antonio Amarante	Active	70.0	17.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Antonio Carlos de Liz Stefen	Active	30.0	14.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	14.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Apotec Madeiras	Active	4.0	7.3	26.92	5.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4	18
Araupel	Inactive	160.0	30.0	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Arno Volni Arruda	Active	52.0	16.8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Benjamin Luiz Valentini	Active	80.0	15.4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Biopine Madeiras Ltda	Active	160.0	25.3	0.00	0.00	0.00	74.98	165.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9	1,520
Bou Esperança Matriz	Active	50.0	13.0	877.61	751.95	839.09	616.55	723.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	293	14,644
Bou Esperança Pauquerê	Inactive	146.0	14.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Bonete Madeiras	Active	160.0	36.6	133.21	65.84	60.37	11.95	24.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8	1,297
Brazilian Pine	Inactive	2.0	12.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Brazimoveis	Active	160.0	13.9	0.00	0.00	7.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	92
Carauino Madeiras Ltda.	Inactive	420.0	16.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Celso Pedro Paese	Inactive	30.0	15.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Claudio Paes	Active	30.0	16.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Clesio Kauling	Active	70.0	15.8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Clóvis Arruda Vieira	Active	50.0	16.3	230.67	282.02	271.85	61.39	20.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53	2,654
Coesa Agroflorestal	Active	68.0	13.9	54.70	51.53	21.97	8.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10	669
Comboni	Inactive	160.0	10.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Comércio de Madeira Beija Flor Ltda	Active	5.0	14.1	433.58	783.12	1,003.91	789.66	671.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	261	1,303
Cooperativa Agropecuária de Tubarão	Active	460.0	24.6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Darley Pedro Martini	Active	80.0	14.6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Delcize Maria Zanotto Della Giustina	Active	160.0	14.2	202.35	86.36	163.58	102.21	113.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47	7,518
Diogo Jaques Ventorini	Active	120.0	6.2	44.96	11.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9	1,087
Dirlete Terezina Pereira	Active	52.0	16.9	0.00	0.00	0.00	0.00	0.00	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	21.0	0.00	227.65	249.19	130.55	182.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38	1,130
Edemar Antonio Rosseto	Active	60.0	13.8	66.19	108.93	65.68	15.25	77.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	1,449
Eder Roberto Monn	Active	70.0	16.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Edeschons	Inactive	5.0	4.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Extrapac	Inactive	10.0	5.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
F. Klann	Active	60.0	8.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Finance Comercial	Active	72.0	14.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Floko	Active	100.0	16.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Flora Pinus	Inactive	6.0	3.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Genilda Correa	Active	90.0	10.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Germino Vargas	Inactive	10.0	6.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Gerson Coimbra de Figueiredo Filho	Active	60.0	17.5	0.00	0.00	0.00	0.00	0.00	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	42.61	34.96	39.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7	620
Gilberto Muniz Lima	Active	35.0	19.5	659.71	431.13	707.21	434.60	569.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	144	5,035

Gilmar Sasso Correia	Active	100.0	16.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Gilmar Guanabara	Active	112.0	14.9	0.00	0.00	104.71	33.67	87.21	0.00	0.00	0.00	0.00	0.00	0.00	225.58	15	1,699	
Incohaut Madeiras Ltda	Active	240.0	23.2	191.45	237.40	226.59	169.02	229.75	0.00	0.00	0.00	0.00	0.00	0.00	1,054.21	45	10,896	
Indupinho	Inactive	100.0	16.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Indusflora	Active	30.0	17.4	281.10	329.69	409.34	87.92	58.09	0.00	0.00	0.00	0.00	0.00	0.00	1,166.14	67	2,006	
Istelio José Souto-Maior Camargo	Active	8.0	14.9	13.12	54.13	55.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	122.56	8	66	
J.A. Maines	Active	170.0	16.8	157.86	0.00	0.00	29.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	186.87	11	1,890	
Jacyr Jose tomazi	Active	140.0	14.6	21.53	0.00	20.23	17.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.73	4	573	
Jair Philippi	Active	170.0	24.4	626.34	767.19	823.63	666.02	822.23	0.00	0.00	0.00	0.00	0.00	0.00	3,705.41	152	25,823	
Jair Philippi Filho	Active	220.0	24.2	59.11	55.41	104.00	62.32	150.45	0.00	0.00	0.00	0.00	0.00	0.00	431.29	18	3,916	
Janderson	Inactive	16.0	12.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Jaquirana	Inactive	220.0	16.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
JJ Thomazi	Active	25.0	11.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
João Lima de Andrade	Active	90.0	14.3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
João Luis Ronsoni	Active	80.0	16.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
João Raimundo colombo	Active	10.0	11.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Joaquim da Silva Pacheco	Active	80.0	14.9	225.37	260.24	270.81	225.28	339.13	0.00	0.00	0.00	0.00	0.00	0.00	1,320.82	89	7,098	
Jose Albanir Ferreira da Silva	Active	40.0	8.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
José Alexandre Coelho	Active	100.0	17.3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Jose Altenir	Active	30.0	17.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Jose Canozio Alves Pereira	Active	150.0	14.6	11.92	11.27	113.33	38.73	48.36	0.00	0.00	0.00	0.00	0.00	0.00	223.61	15	2,304	
José de Souza	Active	60.0	8.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
José Mariano da Silva	Active	50.0	15.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Juliano Sérgio Lopes	Active	170.0	18.1	48.72	62.58	35.83	41.27	44.47	0.00	0.00	0.00	0.00	0.00	0.00	232.87	13	2,187	
Klabin	Active	84.0	28.1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Laminadora Catarinense	Active	4.0	11.1	0.00	9.40	8.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.40	2	6	
Lopes	Inactive	100.0	14.0	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Luiz Antonio Stimamiglio	Active	30.0	17.6	22.96	0.00	104.34	9.28	18.04	0.00	0.00	0.00	0.00	0.00	0.00	154.63	9	264	
Luiz Fernando Figueiredo	Active	3.0	13.4	175.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	175.35	13	39	
Mad. Nossa Senhora de Lourdes Ltda	Active	300.0	16.3	232.91	175.03	369.20	247.87	241.57	0.00	0.00	0.00	0.00	0.00	0.00	1,266.58	78	23,332	
Madbras	Inactive	40.0	6.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Madebampi	Active	10.0	13.8	372.71	382.75	571.02	268.54	288.94	0.00	0.00	0.00	0.00	0.00	0.00	1,883.96	137	1,366	
Madebins	Active	220.0	20.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Madeiraira Boa Parada	Active	70.0	13.8	0.00	0.00	21.86	24.18	30.06	0.00	0.00	0.00	0.00	0.00	0.00	76.09	6	387	
Madeiraira Lajes	Active	3.0	14.5	45.78	24.24	11.00	0.00	30.34	0.00	0.00	0.00	0.00	0.00	0.00	111.37	8	23	
Madeiraira Norte Pontaltense	Active	160.0	17.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Madeiraira Santa Paulina	Active	14.0	11.5	278.24	295.51	87.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	660.88	58	806	
Madeiraira Santa Rita	Inactive	14.0	11.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Madeiraira Trevo Ltda	Active	16.0	13.6	144.34	74.85	102.68	115.70	167.33	0.00	0.00	0.00	0.00	0.00	0.00	604.90	44	711	
Madepar	Active	4.0	13.3	313.72	414.58	223.08	22.97	123.09	0.00	0.00	0.00	0.00	0.00	0.00	1,097.43	82	329	
Magdalena Presser Einsfeld	Active	60.0	17.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Malke	Active	10.0	10.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Marcos Narciso Agostini	Active	110.0	17.4	0.00	0.00	113.54	7.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	121.24	7	767	
Marcus Aristoteles Zilli	Active	170.0	10.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Martins	Inactive	16.0	8.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Mengatto	Active	5.0	15.5	36.27	36.34	47.35	21.80	49.85	0.00	0.00	0.00	0.00	0.00	0.00	191.60	12	62	
Mercedes Webber dos Santos	Active	60.0	12.9	12.09	6.88	8.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.77	2	129	
MJ Madeiras	Active	5.0	11.5	566.77	523.92	437.71	496.91	521.60	0.00	0.00	0.00	0.00	0.00	0.00	2,546.91	221	1,107	
M5 Madeiras Ltda	Active	160.0	26.6	144.16	213.69	145.42	167.47	275.09	0.00	0.00	0.00	0.00	0.00	0.00	945.82	36	5,687	
Multiform	Active	2.0	18.0	5,924.43	4,896.89	5,501.53	4,060.00	5,070.32	0.00	0.00	0.00	0.00	0.00	0.00	25,453.16	1,414	2,828	
Nelson Moraes de Camargo	Active	30.0	9.9	0.00	5.21	7.20	17.78	23.72	0.00	0.00	0.00	0.00	0.00	0.00	53.91	5	163	
Neri Antonio Chiodelli Junior	Active	160.0	12.6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Nery Nunes de Carvalho	Active	100.0	13.3	0.00	0.00	27.53	8.98	9.47	0.00	0.00	0.00	0.00	0.00	0.00	45.98	3	345	
Neuri A. Chiodelli	Active	160.0	16.6	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
Neuza Bianchini Arruda	Active	90.0	15.0	84.37	54.96	57.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	196.51	13	1,181	
Nilton Sabatini	Active	20.0	8.1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
NP Madeiras	Active	180.0	15.7	21.19	34.64	36.88	8.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	101.52	6	1,161	
Olimpio Antonio Candiago	Active	40.0	9.9	32.36	17.39	43.26	29.20	31.11	0.00	0.00	0.00	0.00	0.00	0.00	153.32	16	622	
Olimpyo	Active	24.0	13.5	0.00	0.00	0.00	0.00	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	12.4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	
P & P Móveis de Confecções Ltda	Active	5.0	15.0	247.74	582.37	584.27	533.58	582.11	0.00	0.00	0.00	0.00	0.00	0.00	2,530.08	168	841	
Pandolfo	Active	3.0	10.9	637.13	428.04	875.39	703.07	908.89	0.00	0.00	0.00	0.00	0.00	0.00	3,552.53	325	976	

Paulino Granzotto	Active	16.0	15.0	0.00	0.00	0.00	0.00	0.00	0.00	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	17.9	0.00	0.00	0.00	0.00	0.00	0.00	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	15.8	92.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	92.36	6	234
Pinus Bom Jesus	Active	360.0	25.0	208.41	363.34	463.47	513.53	208.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,757.65	70	25,300
Pinus Forte	Inactive	3.0	9.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Pinusbras	Inactive	5.0	9.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Pisani	Active	18.0	14.9	0.00	0.00	0.00	101.91	197.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	298.94	20	362
Polese	Inactive	26.0	7.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Prime Timber	Active	220.0	17.6	140.13	189.66	235.89	185.14	321.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,072.26	61	13,397
Raul Antonio Favero	Active	150.0	16.3	11.36	0.00	0.00	8.84	61.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	81.44	5	751
Ravazin	Active	20.0	24.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Residuos Bioenergia	Active	400.0	18.4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Righez	Inactive	50.0	15.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
RP Madeiras Ind. e Com. Ltda	Active	30.0	15.5	0.00	0.00	0.00	120.57	178.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	299.29	19	581
Sart	Active	78.0	10.5	0.00	0.00	115.05	27.70	24.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	167.25	16	1,242
Sérgio Bochert	Active	58.0	15.4	0.00	0.00	83.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	83.18	5	314
Sérgio Luiz Bogorni	Active	50.0	15.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Serraria Campos de Palmas S.A	Active	70.0	4.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Silvio Muinz Matos	Active	80.0	15.0	0.00	11.64	49.68	8.70	10.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80.21	5	428
Tributto	Active	30.0	12.2	189.41	147.25	137.84	65.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	540.22	44	1,331
Turbina	Inactive	130.0	16.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
União Fosforeira	Inactive	150.0	13.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Valdeci Nunes de Carvalho	Active	60.0	14.1	0.00	9.18	91.95	33.04	10.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	144.89	10	616
Victorio Genuino Agostini	Active	30.0	14.6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Vilmar Laudelino Ferreira	Active	66.0	16.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Vilso Isidoro	Active	40.0	15.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Wilson de souza Machado	Active	110.0	15.8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Zilda Eliza Letti Pelizzaro	Active	120.0	14.2	43.80	139.63	196.01	47.72	34.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	461.39	33	3,902
<b>Total</b>					<b>14,789.00</b>	<b>13,854.00</b>	<b>16,773.00</b>	<b>12,229.00</b>	<b>14,516.00</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>72,161</b>	<b>4,487</b>	<b>202,283</b>

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

= 45.1 km

Weighted average truck capacity [AD=A/AY]

= 16.1 tonnes



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	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
Sofia	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
Adelia Tealdi	0.00	0.00%	0.18	0.00%	27.66	0.19%	0.00	0.00%	0.14	0.00%	0.00	0.00%	68.84	0.07%
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%
Adilson Tadeu 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%
Agro Comercial Zandonadi Ltda.	162.49	0.86%	159.55	0.90%	95.90	0.44%	49.37	0.24%	68.23	0.34%	0.00	0.00%	535.54	0.54%
Agro Florestal Paquerê	0.00	0.00%	94.73	0.54%	89.84	0.42%	592.41	2.93%	478.61	2.37%	0.00	0.00%	1,255.59	1.27%
Agroflorestal Serrana	383.19	2.04%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	383.19	0.39%
Aleciir de Jesus	0.00	0.00%	14.63	0.08%	13.52	0.06%	15.36	0.08%	0.00	0.00%	0.00	0.00%	43.51	0.04%
Alcides Inácio 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%
Aldo Silveira Flores	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
Alexandre Coelho de Oliveira	0.00	0.00%	0.00	0.00%	259.43	1.20%	477.71	2.36%	458.34	2.27%	0.00	0.00%	1,195.48	1.21%
Altair Benício 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%
Anderson Chaves Pucci	19.93	0.11%	28.54	0.16%	39.90	0.18%	28.69	0.14%	9.93	0.05%	0.00	0.00%	126.99	0.13%
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%
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%
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%
Aprietei Madeiras	34.25	0.18%	7.10	0.03%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	41.35	0.04%
Araupé	0.00	0.00%	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%
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%
Arno Volni Arruda	0.00	0.00%	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%
Biepine Madeiras Ltda	0.00	0.00%	0.00	0.00%	0.00	0.00%	123.96	0.61%	230.46	1.14%	0.00	0.00%	354.42	0.36%
Boa Esperança Matriz	1,116.52	5.43%	957.73	5.06%	1,062.87	5.40%	1,019.24	5.00%	4,989.24	24.86%	0.00	0.00%	5,183.70	5.26%
Boa Esperança Paiquerê	0.00	0.00%	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	169.48	0.90%	83.86	0.48%	77.89	0.36%	19.75	0.10%	34.71	0.17%	0.00	0.00%	385.69	0.39%
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%
Brazimoveis	0.00	0.00%	0.00	0.00%	10.27	0.05%	0.00	0.00%	0.00	0.00%	0.00	0.00%	10.27	0.01%
Carauño 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%
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%
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%
Clevis Kauling	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
Clóvis Arruda Vieira	293.47	1.56%	359.21	2.04%	350.73	1.62%	101.49	0.50%	28.68	0.14%	0.00	0.00%	1,133.58	1.15%
Coesa Agroflorestal	69.59	0.37%	65.63	0.37%	28.35	0.13%	14.08	0.07%	0.00	0.00%	0.00	0.00%	177.65	0.18%
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%
Comércio de Madeira Beija Flor Ltda	551.62	2.93%	997.45	5.65%	1,295.21	5.99%	1,305.54	6.46%	935.63	4.63%	0.00	0.00%	5,085.45	5.16%
Cooperativa Agropecuária de Tubarão	0.00	0.00%	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%
De Alciz Maria Zandonadi Della Giustina	257.44	1.37%	109.95	0.98%	211.05	0.96%	158.26	0.84%	158.64	0.78%	0.00	0.00%	944.11	0.96%
Dione Jaques Ventorini	57.20	0.30%	14.10	0.08%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	71.30	0.07%
Dirlete Terezina 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%
Domingos da Silva Martins	0.00	0.00%	289.96	1.64%	321.30	1.49%	215.84	1.07%	253.53	1.25%	0.00	0.00%	1,080.83	1.10%
Edemar Antonio Rossetto	84.21	0.45%	138.74	0.79%	84.74	0.39%	25.21	0.12%	108.45	0.54%	0.00	0.00%	441.35	0.45%
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%
Eideschons	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
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%
F. Klann	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
Finance 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%
Floko	0.00	0.00%	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%
Genilda Correa	0.00	0.00%	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%
Gerson Coimbra de Figueiredo Filho	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
Genildo 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%
Gilberto Muniz Lima	839.31	4.46%	549.13	3.11%	912.42	4.22%	718.53	3.55%	793.16	3.92%	0.00	0.00%	3,812.55	3.87%
Gilmar Sasso Correia	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
Gilmar Guanabara	0.00	0.00%	0.00	0.00%	135.09	0.62%	55.66	0.28%	121.45	0.60%	0.00	0.00%	312.20	0.32%
Incohabit Madeiras Ltda	243.57	1.29%	302.38	1.71%	292.34	1.35%	279.44	1.38%	319.96	1.58%	0.00	0.00%	1,437.69	1.46%
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%
Indusflora	357.62	1.99%	419.93	2.38%	528.12	2.44%	145.36	0.72%	80.90	0.40%	0.00	0.00%	1,531.93	1.55%
Isidelo José Souto-Maior Camargo	16.49	0.09%	68.99	0.39%	71.35	0.33%	0.00	0.00%	0.00	0.00%	0.00	0.00%	156.83	0.16%
J.A. Maines	200.82	1.07%	0.00	0.00%	0.00	0.00%	47.97	0.24%	0.00	0.00%	0.00	0.00%	248.80	0.25%
Jacy Jose Iomazi	27.39	0.15%	0.00	0.00%	26.10	0.12%	29.71	0.15%	0.00	0.00%	0.00	0.00%	83.20	0.08%
Jair Philippi	796.85	4.24%	977.17	5.54%	1,062.62	4.91%	1,101.13	5.45%	1,145.09	5.66%	0.00	0.00%	5,082.86	5.16%
Jair Philippi Filho	75.20	0.40%	70.57	0.40%	134.18	0.62%	103.04	0.51%	209.53	1.04%	0.00	0.00%	592.52	0.60%
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%
Jaquirana	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
JJ Thomazi	0.00	0.00%	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 Lima de Andrade	0.00	0.00%	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 Rensoni	0.00	0.00%	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 Raimundo colombo	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%

Joaquim da Silva Pacheco	286.72	1.52%	331.47	1.88%	349.39	1.61%	372.45	1.84%	472.29	2.34%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1,812.32	1.84%
José Albuair Ferreira 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%
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%
José Alenir	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	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 Canazio Alves Pereira	15.17	0.08%	14.35	0.08%	146.21	0.68%	64.04	0.32%	67.35	0.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	307.12	0.31%
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%
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%
Juliano Sérgio Lopes	61.98	0.33%	79.71	0.45%	46.23	0.21%	68.23	0.34%	61.93	0.31%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	318.08	0.32%
Klabin	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	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%	11.97	0.07%	10.32	0.05%	0.00	0.00%	0.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	22.29	0.02%
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%
Lucemar Schmitz	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	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 Simamiglio	29.21	0.16%	0.00	0.00%	134.62	0.62%	15.34	0.08%	25.13	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	204.30	0.21%
Luiz Fernando Figueiredo	223.09	1.19%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	223.09	0.23%
Mad. Nossa Senhora de Lourdes Ltda	296.32	1.57%	222.93	1.26%	476.33	2.20%	409.81	2.03%	336.42	1.66%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1,741.81	1.77%
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	474.18	2.52%	487.51	2.76%	736.71	3.40%	443.98	2.20%	402.39	1.99%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2,544.77	2.58%
Madebims	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	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 Boa Parada	0.00	0.00%	0.00	0.00%	28.20	0.13%	39.97	0.20%	41.86	0.21%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	110.03	0.11%
Madeiraira Lajes	58.24	0.31%	30.88	0.17%	14.19	0.07%	0.00	0.00%	42.26	0.21%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	145.57	0.15%
Madeiraira 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%
Madeiraira Santa Paulina	353.99	1.88%	376.39	2.13%	112.41	0.52%	0.00	0.00%	0.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	842.79	0.86%
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%
Madeiraira Trevo Ltda	183.64	0.98%	95.34	0.54%	132.47	0.61%	191.28	0.95%	233.04	1.15%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	835.77	0.85%
Maderpar	399.12	2.12%	528.05	2.99%	287.81	1.33%	37.97	0.19%	171.42	0.85%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1,424.37	1.45%
Magdalena Presser Einsteld	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	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%	0.00%	0.00%	0.00%	0.00	0.00%
Marcos Narciso Agostini	0.00	0.00%	0.00	0.00%	146.48	0.68%	12.73	0.06%	0.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	159.21	0.16%
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%
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	46.14	0.25%	46.28	0.26%	61.09	0.28%	36.05	0.18%	69.42	0.34%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	258.98	0.26%
Mercedes Webber dos Santos	15.38	0.08%	8.76	0.05%	11.36	0.05%	0.00	0.00%	0.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	35.50	0.04%
MJ Madeiras	721.07	3.83%	667.31	3.78%	564.72	2.61%	821.54	4.06%	726.41	3.59%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3,501.06	3.55%
MJS Madeiras Ltda	183.40	0.97%	272.17	1.54%	187.61	0.87%	276.88	1.37%	383.11	1.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1,303.17	1.32%
Multiform	7,537.28	40.06%	6,237.14	35.35%	7,097.90	32.80%	6,712.39	33.20%	7,061.26	34.93%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	34,645.97	35.16%
Nelson Moraes de Camargo	0.00	0.00%	6.64	0.04%	9.29	0.04%	29.39	0.15%	33.04	0.16%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	78.36	0.08%
Neri Antonio Chiodelli Junior	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00%
Nery Nunes de Carvalho	0.00	0.00%	0.00	0.00%	35.52	0.16%	14.84	0.07%	13.19	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	63.55	0.06%
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%	0.00%	0.00	0.00%
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%	0.00%	0.00	0.00%
Neuza Bianchini Arruda	107.34	0.57%	70.00	0.40%	73.77	0.34%	0.00	0.00%	0.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	251.11	0.25%
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%	0.00%	0.00%	0.00%	0.00	0.00%
NP Madeiras	26.96	0.14%	44.12	0.25%	47.58	0.22%	14.56	0.07%	0.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	133.22	0.14%
Olimpio Antonio Candiago	41.17	0.22%	22.15	0.13%	55.81	0.26%	48.28	0.24%	43.32	0.21%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	210.73	0.21%
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%	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%
P & P Móveis de Confecções Ltda	315.19	1.68%	741.76	4.20%	753.81	3.48%	882.16	4.36%	810.69	4.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3,503.61	3.56%
Pandolfo	810.59	4.31%	545.20	3.09%	1,129.41	5.22%	1,162.38	5.75%	1,265.79	6.26%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4,913.35	4.99%
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%
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%
Paulo Cesar da Costa	117.51	0.62%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	117.51	0.12%
Pinus Bom Jesus	265.15	1.41%	462.78	2.62%	597.95	2.76%	849.02	4.20%	290.93	1.44%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2,465.83	2.50%
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%	0.00%	0.00%	0.00%	0.00	0.00%
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%
Pisani	0.00	0.00%	0.00	0.00%	0.00	0.00%	168.48	0.83%	274.40	1.36%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	442.88	0.45%
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%
Prime Timber	178.28	0.95%	241.57	1.37%	304.34	1.41%	306.16	1.51%	447.65	2.21%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1,477.94	1.50%
Raul Antonio Favero	14.45	0.08%	0.00	0.00%	0.00	0.00%	14.61	0.07%	85.38	0.42%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	114.36	0.12%
Ravazin	0.00	0.00%	0.00																		