MONITORING REPORT

Trupan Biomass Power Plant in Chile

CDM Registration Reference Number: 259

VERSION 00

Monitoring period:

From: October 01, 2006
To: September 30, 2007

Celulosa Arauco y Constitución S.A.

October, 2007

SUMMARY TABLE

Name of the CDM project activity:	Trupan Biomass Power Plant in Chile
CDM registration reference number:	259
Starting date of the project activity:	04/04/2001
Starting date of the first crediting period:	01/05/2003
Length of the first crediting period:	Seven (7) years.
Maximum length of the crediting period:	3 x Seven (7) years
Period covered by the current monitoring report:	01 October 2006 – 30 September 2007 (both days included)
Total net emission reductions claimed in the monitored period:	**122,723 tCO_2eq**

1. Project description and current status

Project description

The Project is designed to use own and third party biomass for electric power generation that would have otherwise been left in piles for natural decay. The Project is presented by Celulosa Arauco y Constitución S.A. (from now on, Arauco) a leading forestry and pulp-producing company in the world, but the project itself was realized by Paneles Arauco S.A. (Trupan), an MDF / wood panel board producing company in Chile, subsidiary of Arauco.

The Project involves the construction and operation of a new Power Plant inside the Trupan Industrial Complex site of 30MW generating electric power capacity. Approximately 50% of the power available is destined to serve the needs of the Trupan Industrial Complex. The remaining 50% is reserved for external energy generation, which is sold to free (unregulated) customers of Arauco Generación[1] and to the spot market in the Interconnected Central System (SIC).

The new Power Plant was part of the expansion project of the Trupan wood panel mill (Trupan Line Nº2). Before this project, Trupan had steam generation capacity but no electric power generation capacity, so the Complex sourced all its electric power requirements through the grid[2]. However, when the Trupan management evaluated the expansion project, it considered the surplus of biomass available in the region, the benefits of the Kyoto Protocol and decided to build a new on-site biomass Power Plant with enough capacity to fulfill the electric power needs of the Trupan Industrial Complex and to generate additional power to the grid. From a technical perspective, this decision involved installing a high-pressure boiler and a steam turbine, which meant going clearly beyond the traditional practice of the Panel Board Industry in Chile. Given that utilizing a high-pressure boiler implied a significant increase in cost compared to the more conventional saturated-steam power boiler solution, the decision of building such Power Plant relied on the possibility of not depending on the SIC for electric power anymore, on selling excess power to the grid, on supplying electric power to other industrial facilities and mills within the Arauco Group and on the potential benefits from being a CDM project activity.

It must be noted that since this Power Plant was located inside the Trupan Complex site, it first served the energy requirements of the Industrial Complex and exported the surplus energy to the grid. If the Power Plant had been built outside the Trupan site, it would have injected all of its power to the grid, and the Trupan Industrial Complex would have had to buy the energy from the grid[3].

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[1] Arauco Generación S.A. is a subsidiary of Celulosa Arauco y Constitución S.A.. Arauco Generación provides administration services to Arauco in the areas of engineering and electric power generation.

[2] The Trupan Complex had an energy contract with Endesa S.A., one of the largest power companies in Chile.

[3] Arauco Generación S.A., a subsidiary of Celulosa Arauco y Constitución S.A., represents the Trupan Power Plant in the CDEC-SIC (the relevant dispatch center).

The proposed project activity assists Chile's sustainable growth by providing electricity to the Trupan Complex and to the SIC through biomass power generation. Without the Trupan Power Plant, not only there would have been no clean energy injection to the SIC, but the Trupan Complex itself would have had to continue sourcing its electric power requirements from the grid. In addition, this Project accomplishes an additional greenhouse (GHG) reduction benefit derived from a reduced disposal or uncontrolled burning of biomass, which results into significantly lower methane emissions.

The Trupan project activity proponent believes that biomass power generation constitutes a sustainable source of power generation that brings clear advantages to mitigate global warming. Using the available natural resources in a rational way, the Trupan project activity helps to enhance the development of renewable energy sources in Chile, in particular the use of biomass generated as a by-product of the forestry industry, which has a significant potential in the country. The proposed project is a good example to demonstrate the viability of electricity generation as a source of revenue not only to the Wood Panel industry, but also to all forest-related industries. It is worthy to highlight, however, that none of the wood panel mills in Chile (and very few in the world) have this additional power generation capacity, making the Trupan Power Plant facility quite unique and particular in its type.

Baseline methodology

Arauco developed the baseline and monitoring methodology originally proposed for the Trupan Power Plant project activity, the NM0081. Though the Executive Board approved this methodology, a new and broader methodology was developed, which was approved and published by the CDM Executive Board. This methodology resulted from a consolidation of the existing approved methodologies for grid-connected biomass CDM project activities, including the one developed by Arauco. This consolidated methodology is the one applied for the Trupan project activity. The name of the baseline methodology applied to the project activity is:

"Consolidated baseline methodology for grid-connected electricity generation from biomass residues", ACM0006. (Version 01)

Applied baseline scenario for the project activity: Nº3.

Documentation

The project was validated by DNV and registered in June 06, 2006. The Project Design Document, validation report, request for registration and registration approval are available on the UNFCCC website: http://cdm.unfccc.int/Projects/DB/DNV-CUK1138289069.87/view.html

Implementation and current status

The project has been completed as planned and described in the Project Design Document (PDD). Though the Trupan project activity falls under the category of an “early CDM project activity” (started functioning before the CDM registration date), the monitoring plan has been implemented and enforced just as described in the corresponding PDD.

Sustainability, economic and social well-being

The Trupan biomass Power Plant reduces carbon emissions by replacing fossil fuel-based electricity generation and by preventing forestry biomass to be left to decay. The project promotes sustainable development by:

- Fostering the diversification of electricity generation towards renewable energy sources in the country.
- Using clean, efficient and top of the line technology to generate power, thus, conserving natural resources and the environment.
- Becoming a benchmark of an efficient and renewable energy generation project in the country. This encourages the development of modern and more efficient generation of electricity and thermal energy throughout the country using renewable biomass sources.
- Optimizing the use of natural resources, avoiding new uncontrolled waste disposal places in the surrounding area of the Power Plant.

2. Monitored parameters

All parameters needed to make the emission reduction calculations according to the monitoring plan are described in the PDD, section D.2. This section provides additional explanatory information about the monitored data.

The following table provides information about the monitored data for the baseline and project emission data variables:

Project activity monitored data

ID number.	Data variable.	Additional comments
1. $BF_{i,y}$	Quantity of biomass of type i combusted in the project plant.	The total biomass per type used in the power boiler was constantly monitored during the verification period. The weight of the biomass was measured by weighing the trucks with and without the biomass cargo (entering and exiting the plant) by electronic weighbridges. The volume of the biomass was also measured and recorded each time. The biomass consumption at the power plant was determined by considering the biomass purchases (measured) and stock variations (measured) during each month. The additional biomass (or biomass related to the implementation of the CDM project activity) was calculated just as described in page 43 of the validated PDD. The way of calculating the biomass related to the CDM project activity is conservative (see footnote 18 in the PDD).
2. NCVi	Net calorific value of biomass fuel type i.	The net calorific values of the biomass types entering to the power boiler were measured in an external lab in the region and recorded each year.
3. EF_{CH4}	Methane emission factor for combustion of biomass in the project plant.	The same methane emission factor and conservativeness factor for biomass controlled burning used in the PDD was used to calculate the methane emission from controlled burning in the power boiler. (IPCC default factor for controlled biomass burning of biomass, adjusted by a validated conservativeness factor.).
4. AVD_y	Average return trip distance between biomass fuel supply sites and the project site.	Distances from biomass providers to the Plant were constantly monitored and recorded. This variable was calculated and reported on a monthly basis for the calculation of the project activity emission reductions each month.
5. TL_y	Average truckload of the trucks used for transportation of biomass.	Idem as above.
6. $EF_{km,CO2}$	Average CO_2 emission factor for transportation of biomass with trucks.	Average fuel consumption was obtained from the transportation subcontractors, which was then used to calculate the corresponding CO_2 emission factor.
7. $COEF_{CO2,i}$	Emission factors.	This factor was calculated using IPCC default values (Carbon content and fraction of carbon oxidized) and local national data (Net calorific values of the corresponding fossil fuels).
8. OF_y	On-site use of transport fuel.	Total quantities of fossil fuel per type for on-site biomass transportation were constantly monitored and monthly recorded. These amounts were used to calculate the fossil fuel consumption related to the project activity, just as described in page 44 of the validated PDD.
9. FF_y	Fossil fuel used in Power	Total quantities of fossil fuel per type used in the power boiler were

	Boiler.	constantly monitored at the Power Plant. These amounts were used to calculate the fossil fuel consumption related to the project activity, just as described in page 44 of the validated PDD.

Baseline monitored data

ID number.	**Data variable.**	**Additional comments**
10. EG_y (EG_h if dispatch data OM is used)	Net quantity of electricity displaced by the project activity from the grid.	The net energy displaced from the grid resulted from subtracting the additional energy consumption of the Power Plant due to the project activity to the gross energy generation of the Power Plant (measured). The additional power consumption was determined by subtracting the baseline electricity consumption (established in the PDD) to the total energy consumption of the Power Plant (measured).
11. EF_y	CO_2 emission factor of the grid.	Calculated as the average (equal weights of 50% for each) between the OM and BM SIC emission factors.
12. $EF_{OM,y}$	CO_2 Operating Margin emission factor of the grid.	This factor was calculated according to the chosen baseline methodology (which indicates to follow the ACM0002 methodology). For this coefficient and according to the PDD, the Simple Adjusted OM factor was used. For the 2007 coefficient, the information was available only until September 2007.
13. $EF_{BM,y}$	CO_2 Build Margin emission factor of the grid.	This factor was calculated according to the chosen baseline methodology (which indicates to follow the ACM0002 methodology). In this case, the BM was calculated for each year (ex-post) and in each case, the weighted average of the emission coefficients of the most recent power plants responsible for 20% of the total power generation each year was used. For the 2007 coefficient, the information was available only until September 2007.
14. $F_{i,y}$	Amount of each fossil fuel consumed by each power source / plant.	This information was directly obtained by the CDEC-SIC Dispatch Center or directly from the electric power companies themselves.
15. $COEF_i$	CO_2 emission coefficient of each fuel type i consumed by the electric power generators in the relevant grid.	This factor was calculated using IPCC default values (Carbon content and fraction of carbon oxidized) and local national data (Net calorific values of the corresponding fossil fuels).
16. $GEN_{j/k/n,y}$	Electricity generation of each power source / plant j/k or n.	This information was directly obtained by the CDEC-SIC Dispatch Center. For the 2007 generation, the information was available only until September 2007.
17.	Identification of power source / plant for the OM calculation.	This information was directly obtained by the CDEC-SIC Dispatch Center.
18.	Identification of power source / plant for the BM calculation.	This information was directly obtained by the CDEC-SIC Dispatch Center.
19. λ_y	Fraction of time during which low-cost / must-run sources are on the margin.	This factor was calculated from information directly obtained from the CDEC-SIC Dispatch Center. For the 2007 coefficient, the information was available only until September 2007.
20.a $GEN_{j/k/ll,y}$ IMPORTS	Electricity imports to the project electricity system.	This information was directly obtained by the CDEC-SIC Dispatch Center. There are no imports / exports to the project activity electricity system.

20.b $COEF_{i,jy}$ IMPORTS	CO_2 emission coefficient of fuels used in connected electricity systems (if imports occur).	See 20.a above.

As indicated in the PDD, the total amounts of biomass and fossil fuels were monitored. The additional amounts (the ones related to the project activity) were calculated following the exact description in pages 43 and 44 of the PDD and Annex 3 of the PDD. These calculations:

- Determine the biomass amount related to the project activity (i.e. used to generate power) using a coefficient defined in page 81 of the PDD: "Electric power generation factor for Trupan". This factor is conservative and fixed for the entire crediting period of the project activity.

- Use the additional biomass to determine the additional fossil fuel consumption due to the project activity. In this case the calculation assumes direct proportionality between the biomass and fossil fuel consumption at the Power Plant.

Monitoring of complementary data

To perform the calculation of the net emission reductions of the project activity, some additional data was monitored. The following table provides some information of these variables.

Complementary data

BDt / m^3st	This factor was calculated each month to determine the amount of bone-dry ton (BDt) of biomass from humid volumetric quantities of biomass (cubic meters). To do so, the volume, the biomass humidity and the weight of the biomass were used and monitored at the Plant.

Biomass humidity	This variable was constantly measured and monthly reported for the calculation of the net emission reductions of the project activity.
CH_4 emission factor for uncontrolled burning of biomass	According to the baseline methodology ACM0006 (Version 01), page 33, the project proponent may undertake measurements or use referenced default values to calculate the CH_4 baseline emissions from uncontrolled burning of biomass. Given that by the time the PDD was written there were no local measurements available, the validator indicated the project proponent to use the IPCC default factor corrected by the lowest conservativeness factor (Table Nº4, page 34 of the ACM0006 Version 01). This lead to extremely conservative CH_4 baseline emissions for the project activity, since in reality a significant portion of the biomass is left to natural decay in the open air, releasing a much higher amount of CH_4 than if it were burned in an uncontrolled way. As a result, the project proponent explicitly mentioned in the PDD (page 67) and in the validation report (page A39) that a local CH_4 measurement would be attempted in order to have a more accurate and fair estimation of the baseline emissions from this source. During September 2006, the project proponent hired the U.S. Forest Service of Missoula, Montana, USA to conduct a local measurement of the CH_4 emission factor for uncontrolled burning of biomass in the nearby area of the Power Plant. The result of this measurement indicated a CH_4 emission factor for uncontrolled burning of the same type of biomass used in the Trupan Power Plant of 740.5 Kg of CH_4 / TJ, with an associated standard deviation of 162.2 Kg of CH_4 / TJ. According to Table 4 of the ACM0006 (Version 01) baseline methodology, this led to a conservativeness factor of 0.94[4], resulting in an adjusted CH_4 baseline emission factor for uncontrolled burning of biomass of 696.1 Kg of CH_4/TJ.
CH_4 emission factor for controlled burning of biomass in the power boiler	The project proponent also requested the U.S. Forest Service to carry out a CH_4 emission factor measurement for controlled burning of biomass in the power boiler. The result of the measurement indicated insignificant (zero) CH_4 emissions in the flue gases of the power boiler[5]. Considering this result and the fact that the project proponent is still using an IPCC default factor of 15.3 Kg of CH_4 / TJ to calculate the project activity emissions related to biomass controlled burning in the power boiler, the net emission reduction calculation derived from the more efficient way of burning the biomass due to the project activity is conservative.

[4] A 95% confidence interval was calculated to determine the corresponding uncertainty range for the sample mean.

[5] According to the final measurement report, the flue gases of the power boiler presented lower concentration of CH_4 (0.55 ppm) than clean air levels (1.7 ppm to 2 ppm). Therefore, the combustion process in power generation resulted in a <u>net loss of CH_4</u> from the air used.

Summary of the main monitored data

According to the monitoring plan outlined above, the following table shows a summary of the main monitored data of the project activity during the monitored period.

Summary of main monitored data per year

		2006	2007
Operating Margin	(tCO_2/GWh)	693.5	775.4
Build Margin	(tCO_2/GWh)	207.5	504.7
Combined Margin	(tCO_2/GWh)	450.5	640.1
Net energy displaced from the grid	(GWh/yr)	169.0	129.9
Additional biomass due to project activity	(BDT/yr)	86,637	67,281
Net calorific value of the biomass	(TJ / 000 ton)	18.92	19.05
Avg distance between sawmills and P.Plant	(Km)	71.4	70.4
Avg load for 1 trip	(Ton/truck)	18.4	17.2
Additional fossil fuel consumed in P. Boiler			
Diesel	(Lt/yr)	513,358	48,887
Fuel Oil	(ton/yr)	0	0
LPG	(Lt/yr)	2,042	684
Addit. fossil fuel used for biomass transp. in P.Plant			
Diesel	(Lt/yr)	126,152	85,992

Note: Year 2007 considers monitored data from January to September of that year.

Some differences between the monitored data and the one used to calculate the net emission reductions in the registered PDD are due to the following reasons:

1. The use of some referential data in the PDD instead of actual monitored data (i.e. conversion factors, humidity factors, etc.).

2. An improvement in the accuracy of some monitored data that was previously used to calculate some emission reduction coefficients in the PDD (i.e. the CDEC-SIC Dispatch Center made some ex-post corrections in the power plant generation data for the past years).

3. The replacement of natural gas for diesel in fossil fuel power plant[6] and a higher share of fossil fuel generation in the SIC grid during 2007.

[6] Natural gas from Argentina for electric power generation in Chile was almost unavailable in 2007.

Leakage

Though there are no official studies in the country about the supply / demand situation of forest biomass in the relevant area, Arauco performed a annual studies for 2006 and 2007 using official bulletins from INFOR[7] as well as other (whenever available) official sources to calculate the biomass supply and demand in the Trupan Power Plant influence area[8]. This study was part of the monitoring plan of the Trupan project activity and was carried out according approach L2 of the baseline methodology. A detailed and confidential Excel spreadsheet with the monitored data and the calculation of the forest biomass supply / demand situation each year was provided to the DOE to establish the quality and validity of the data sources and the accuracy of the calculated numbers. The following table provides the final results of such study:

TRUPAN INFLUENCE AREA SUPPLY / DEMAND SITUATION

		2006	2007
Biomass supply			
Total supply	**(m^3st/yr)**	**9,872,266**	**10,483,068**
Biomass demand			
Total demand	**(m^3st/yr)**	**5,631,074**	**5,680,530**
Total supply / total demand	**(number)**	**1.7532**	**1.8454**

According to the table above, it is clear that the quantity of available biomass in the influence area of the project activity is greater than the 25% threshold established in option L2 of the consolidated baseline methodology. This is consistent with the fact that in the last years the existing biomass power plant in the Trupan influence area continue to function without restriction and that new biomass based projects are currently being considered in the area[9].

From the above analysis, it is possible to conclude that the Trupan biomass Power Plant has not caused a biomass supply shortage in its influence area and therefore has not caused other biomass consumers to switch from biomass fuels to fossil fuel sources. For these reasons, the associated leakage to the Trupan project activity is considered to be zero.

$$L_y = 0$$

[7] INFOR stands for "Instituto Nacional Forestal" or "National Forestry Institute" in English.

[8] The Trupan influence area is clearly defined in page 65 of the registered PDD.

[9] Including some prospective CDM biomass projects.

Biomass sources

The Trupan Power Plant sources a significant portion of its biomass fuels from nearby sawmills. As established in the registered PDD, the monitoring plan includes the monitoring of variable Nº23, which establishes that the biomass that is being used in the Trupan Power Plant comes from sustainable sources.

Each time a biomass supplier delivers biomass fuels to the Trupan Power Plant, the supplier must sign a reception bill in which the supplier declares to know and comply with the outstanding Chilean forest law. This law mandates that all harvested forest plantations must be replanted; therefore it guarantees the sustainable source of the biomass fuels (as well as the source of any other products from the forest industry). The law also establishes that the purchase of products that come from illegally managed forestlands is also considered illegal in Chile.

Since the Chilean forest law is very stringent, failing to comply with it may imply hefty penalties for the transgressors in some cases. For these reasons all Arauco plants tend to be very selective in choosing their suppliers and have tight quality controls in the reception of raw-material.

Annex 4 of the registered PDD provides more official information and evidence that further confirms the sustainable origin of the biomass type generated in the region (and country) used in this project activity.

Quality assurance

Quality control and quality assurance mechanisms for the monitored data were implemented as mentioned in the registered PDD. The following table provides additional information in the same format as the one used in the PDD.

Data	Uncertainty level	QA/QC procedures implemented during the monitored period.
1	Low	Biomass fuels, as well as any other raw material that enters the Trupan Complex are weighed at the entrance of the complex (incoming and exiting trucks). In addition, the cargo volume of each truck carrying biomass fuels is also registered. Biomass inventory is monthly measured and therefore biomass consumption at the Trupan Power Boiler is duly calculated each month. Since the Trupan plant (as well as most of Arauco subsidiaries) uses the SAP systems, there are periodic and continuous consistency checks between the information that is loaded in SAP and the receipts from all suppliers including biomass. This is necessary not only to ensure the accuracy of the information used to calculate the Trupan net emission reductions, but also to ensure the good quality of the information used for accounting and tax-reporting purposes. This further ensures the good quality of the information used to calculate the emission reductions of the Trupan project.
2	Low	During the monitored period, the NCV of the biomass per type combusted in the Power Boiler was measured each year, presenting minimum differences from one year to another. Comparisons with corresponding IPCC default values also validated and confirmed the measured values.
3, 6, 7, 15, 21.b	Low (CO_2) / Medium (CH_4)	Local values were used whenever possible. In cases in which they were not available, IPCC factors were used instead.
4	Low	Since the location of each biomass supplier is known (i.e. 99% of the biomass comes from permanent type sawmills in the nearby area), distances were obtained for each biomass supplier point from a regional road map.
5	Low	Trucks that transport the biomass are all of standard sizes. This variable was calculated from measured data (weight and volume of the cargo). Electronic weighbridges in which the measurements were performed receive periodic calibration and maintenance.
8, 9	Low	Fuel meters received periodic maintenance and calibration and the consistency of metered fuel consumption was checked with purchase dispatch bills.
10	Low	Electricity meters received periodic maintenance and calibration as per instructed by the equipment manufacturer. In addition, the Trupan administration performed periodic (monthly) consistency checks in the Trupan substation electric bus where the Trupan Power Plant connects to the SIC grid. Finally, the plant manager also performed consistency checks between the total energy generated by the plant and the total biomass fired at the power boiler (efficiency checks).
11, 12, 13, 14, 15, 16, 17, 18, 19, 20a, 20b	Low	As mentioned in the PDD, the quality control of this data is beyond the control of the project operator. However, the project proponent obtained similar results comparing its own calculations with the ones performed by others independent and external parties (i.e. OECD studies). The results were also consistent with IPCC data.
21, 22	Medium	The biomass surplus index was calculated using as much official information as possible. Practical consistency checks were performed whenever it was feasible (i.e. low cost biomass power plants in the influence area continue being low cost-must run power units after the Trupan Power Plant started operating).
23	Low	In most cases, the Trupan biomass suppliers have some kind of sustainability certification (i.e. Certfor) or have signed supply contracts explicitly declaring to comply with the outstanding forest Chilean law which guarantees a sustainable origin of the biomass sold to the Trupan plant. Further quality assurance of this variable can be found in Annex Nº4 of the registered PDD.

In addition to the above, the project proponent developed a dedicated information system designed exclusively to guarantee the quality of the information related to the Trupan CDM project activity. During 2006/2007, this system was successfully incorporated to the Trupan's ISO-14,001 / OHSAS 18,001 systems.

3. Emission reductions

Calculation formulas

As presented in the PDD and according to the baseline methodology, the net emission reduction calculation formula for the Trupan project is:

Project Activity Net Emission savings = Baseline Emissions – Project Activity Emissions – Leakage

or

$$PNE_y = BL_{E,y} - EM_{P,y} - L_y$$

or

$$PNE_y = (BL_{E1,y} + BL_{E2,y}) - (P_{E1,y} + P_{E2,y} + P_{E3,y} + P_{E4,y}) - L_y$$

Where:

$BL_{E1,y}$: Baseline emissions from avoided biomass disposal (tCO_2eq/yr).
$BL_{E2,y}$: Baseline emissions from grid electricity displacement (tCO_2/yr).

$P_{E1,y}$: Project emissions from biomass controlled burning in the Power Plant (tCO_2eq/yr).
$P_{E2,y}$: Project emissions from biomass transportation to the biomass Power Plant (tCO_2/yr).
$P_{E3,y}$: Project emissions from biomass transportation within the Power Plant site (tCO_2/yr).
$P_{E4,y}$: Project emissions from fossil fuel consumption in the Power Plant (tCO_2/yr).

L_y : Are the leakage emissions (tCO_2/yr).

The following section of the monitoring report evaluates each part of this equation and calculates the net emission reductions of the Trupan project activity on a monthly basis.

Emission reductions for the monitored period

For the calculation of the net emission reductions of the Trupan project activity, a confidential Excel spreadsheet with the monitored data and the monthly / yearly calculation of the net emission reductions was provided to the DOE for the verification of the calculated numbers. For informative purposes, this monitoring report provides a table that shows the monthly net emission reduction of the Trupan project activity:

Net emission savings per month

		Baseline emissions		Project activity emissions				
	Net emission savings	Grid emissions	Methane emissions	Methane in P.B.	Fossil fuel in P.B.	Transport onsite	Transport to P. Plant	Leakage
(Months)	**(tCO_2eq/yr)**	(tCO_2/yr)	(tCO_2eq/yr)	(tCO_2eq/yr)	(tCO_2/yr)	(tCO_2/yr)	(tCO_2/yr)	(tCO_2/yr)
Year 2006								
January	**9,571**	7,574	2,208	49	0	44	118	0
February	**9,212**	7,204	2,215	49	9	34	116	0
March	**8,319**	6,467	2,073	46	29	33	113	0
April	**9,881**	7,523	2,583	57	10	35	124	0
May	**8,448**	6,607	2,026	45	7	25	108	0
June	**8,386**	6,615	2,088	46	121	24	125	0
July	**6,638**	5,345	1,655	36	207	23	94	0
August	**7,207**	6,024	1,919	42	557	23	113	0
September	**6,349**	5,288	1,619	36	386	20	116	0
October	**7,086**	5,645	1,668	37	15	25	151	0
November	**7,824**	6,130	1,904	42	20	25	124	0
December	**8,173**	6,411	2,003	44	3	26	169	0
Total year 2006	**97,093**	**76,832**	**23,961**	**527**	**1,366**	**335**	**1,472**	**0**
Year 2007								
January	**6,761**	5,712	1,193	26	16	22	80	0
February	**12,151**	10,158	2,240	49	1	28	170	0
March	**13,388**	11,108	2,554	56	12	28	178	0
April	**11,082**	9,127	2,248	49	73	23	148	0
May	**12,411**	10,367	2,280	50	8	24	153	0
June	**12,144**	10,116	2,289	50	13	27	171	0
July	**12,293**	10,295	2,286	50	0	36	202	0
August	**9,682**	8,108	1,852	41	8	22	207	0
September	**9,729**	8,182	1,797	39	2	22	185	0
October	**0**	0	0	0	0	0	0	0
November	**0**	0	0	0	0	0	0	0
December	**0**	0	0	0	0	0	0	0
Total year 2007	**99,641**	**83,172**	**18,739**	**412**	**133**	**231**	**1,495**	**0**
2nd verif (Oct 06-Sept 07)	**122,723**	**101,358**	**24,315**	**534**	**170**	**306**	**1,939**	**0**

Note: Net emission savings = Baseline emissions - Project activity emissions - Leakage.

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