
VERIFICATION AND CERTIFICATION REPORT

Usina Alta Mogiana S/A Açúcar e Álcool

**Alta Mogiana Bagasse
Cogeneration Project (AMBCP)**

SGS Climate Change Programme

SGS United Kingdom Ltd
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Date of Issue:		Project Number:	
08-12-2008		CDM.VER0062	
Project Title:			
Alta Mogiana Bagasse Cogeneration Project (AMBCP)			
Organisation:		Client:	
SGS United Kingdom Limited		Usina Alta Mogiana S/A Açúcar e Alcool	
Publication of Monitoring Report:			
Monitoring Period:		01/01/2006 to 31/12/2007	
First Monitoring Version and Date:		Version 1, 02/09/2008	
Final Monitoring Version and Date:		Version 3, 03/11/2008	
Summary:			
<p>SGS United Kingdom Ltd has performed the periodic verification of the CDM project Alta Mogiana Bagasse Cogeneration Project (AMBCP), UNFCCC reference number 0181. The verification includes confirming the implementation of the monitoring plan of the registered PDD 0181 and the application of the monitoring methodology as per AM0015, Bagasse-based cogeneration connected to an electricity grid, version 01, 22/09/2004. A site visit was conducted to verify the data submitted in the monitoring report.</p> <p>This project activity consists of increasing the efficiency in the bagasse (a renewable fuel source, residue from sugarcane processing) cogeneration facility, as well as increasing power capacity, at Usina Alta Mogiana S/A Açúcar e Alcool, a Brazilian sugar mill. Alta Mogiana mill is located in São Joaquim da Barra, São Paulo state, Brazil.</p> <p>SGS confirms that the project is implemented in accordance with the validated and registered Project Design Document. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the projects GHG emissions and the resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring and its associated documents. Based on the information seen and evaluated we confirm that the implementation of the project has resulted in 39,676 tCO₂e during period 01/01/2006 up to 31/12/2007.</p>			
Subject:			
CDM Verification			
Verification Team:			
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Authorised Signatory:			<input type="checkbox"/> Unrestricted Distribution
Name: Siddharth Yadav			
Date: 10 th December 2008			
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2	08-12-2008	20	

Abbreviations

AM	Approved Methodology
CAR	Corrective Action Request
CER	Certified Emission Reduction
DNA	Designated National Authority
MP	Monitoring Plan
NIR	New Information Request
ONS	Operador Nacional do Sistema Elétrico
PDD	Project Design Document
SGS	Société Générale de Surveillance
UNFCCC	United Nations Framework Convention on Climate Change

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1. Introduction

1.1 Objective

SGS United Kingdom Ltd has been contracted by Usina Alta Mogiana S/A Açúcar e Álcool to perform an independent verification of its CDM project Alta Mogiana Bagasse Cogeneration Project (AMBCP). CDM projects must undergo periodic audits and verification of emission reductions as the basis for issuance of Certified Emission Reductions (CERs).

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

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

1.2 Scope

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

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

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

1.3 Project Activity and Period Covered

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

Title of Project Activity:	Alta Mogiana Bagasse Cogeneration Project (AMBCP)
UNFCCC Registration Number:	0181
Monitoring Period Covered in this Report	01/01/2006 to 31/12/2007
Project Participants	Usina Alta Mogiana S/A Açúcar e Álcool and Econergy Brasil Ltda.
Location of the Project Activity:	São Joaquim da Barra, São Paulo state, Brazil

This project activity consists of increasing the efficiency in the bagasse (a renewable fuel source, residue from sugarcane processing) cogeneration facility, as well as increasing power capacity, at Usina Alta Mogiana S/A Açúcar e Álcool, a Brazilian sugar mill. Alta Mogiana mill is located in São Joaquim da Barra, São Paulo, Brazil. The project activity is in operation since 6th May 2002.

Alta Mogiana mill produces bagasse internally which is transported to its cogeneration facility through electrical and/or mechanical conveyor belts which operate on electricity and/or steam generated in the biomass residue cogeneration facility, hence there is no fossil fuel consumption within the project boundary or fossil fuel consumption attributable to the project activity. The installed boilers were projected to use only biomass as fuel (Ref.5c).

The bagasse is obtained as a by-product from sugar cane processing for alcohol and sugar production. Any increase in the bagasse would be due to the increase in the demand of alcohol and sugar production. A table was presented in the monitoring report with the historical data of sugar cane crushed and bagasse

generated through the years 2001 to 2006, evidencing that that the increase of sugar cane bagasse is due to the increasing in sugar cane crush to produce sugar and alcohol.

All bagasse produced by Alta Mogiana mill was consumed by project activity, it was not observed store of the bagasse in plant for more than one year. The bagasse produced in the facility is used to generate electricity. A small amount of bagasse is stored from one crop season to another, to start up the boilers, this is a common practice in the sector. It was confirmed on-site by production records that the inter-cropping period covered approximately 4 months/year (December, January, February and March) and no electricity was generated in this period. The bagasse stored during this period is consumed when the plant re-start its activities.

2. Methodology

2.1 General Approach

SGS's approach to the verification is a two-stage process.

In the first stage, SGS completed a strategic review and risk assessment of the projects activities and processes in order to gain a full understanding of:

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

At the end of this stage, SGS produced a Periodic Verification Checklist which, based on the risk assessment of the parameters and data collection and handling processes for each of those parameters, describes the verification approach and the sampling plan.

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

2.2 Verification Team for this Assessment

Name	Role	SGS Office
Fabian Gonçalves	Lead Assessor	SGS Brazil
Thaís Carvalho	Trainee Local Assessor	SGS Brazil

2.3 Means of Verification

2.3.1 Review of Documentation

The validated PDD, the monitoring report submitted by the client and additional background documents related to the project performance were reviewed. A complete list of all documents reviewed is attached in section 8 of this report.

2.3.2 Site Visits

As part of the verification, the following on-site inspections have been performed

Location: São Joaquim da Barra-SP	Date: 09/09/2008
Coverage:	Source of Information / Persons Interviewed
Sampling of internal system. Procedures. Electricity generation records. Equipments installed; operation. Sampling of internal system data.	José Altino B. Marques (Usina Alta Mogiana)
Monitoring plan, emission factor and emission reductions calculation	Maurício B. Rovea (Econergy)

2.4 Reporting of Findings

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

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

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

- I. the verification is not able to obtain sufficient evidence for the reported emission reductions or part of the reported emission reductions. In this case these emission reductions shall not be verified and certified;
- II. the verification has identified misstatements in the reported emission reductions. Emission reductions with misstatements shall be discounted based on the verifiers ex-post determination of the achieved emission reductions

The verification process may be halted until this information has been made available to the assessors' satisfaction. Failure to address a NIR may result in a CAR. Information or clarifications provided as a result of an NIR may also lead to a CAR.

Observations may be raised which are for the benefit of future projects and future verification actors. These have no impact upon the completion of the verification activity.

Corrective Action Requests and New Information Requests are detailed in Periodic Verification Checklist. The Project Developer is given the opportunity to "close" outstanding CARs and respond to NIRs and Observations.

2.5 Internal Quality Control

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

3. Verification Findings

3.1 Project Documentation and Compliance with the Registered PDD

Monitoring report is consistent with registered PDD. The parameters mentioned in the monitoring plan are discussed in the monitoring report. The emission factor is calculated ex-post according to registered PDD section D.2.1.3 and validation report. The electricity delivered to the grid is measured automatically and continuously.

CAR 1 was open to address that the monitoring report version 1 has information not relevant about the crediting period. To close out CAR 1 the monitoring report was revised and contains the applicable information.

The Project boundary was verified during site visit: South-Southeast and Midwest subsystem of the Brazilian grid and the site where the cogeneration facility is located. This is consistent with registered PDD.

No additional source attributable to the project needs to be included in the monitoring plan. The fuel (sugar cane bagasse) used to generate energy is obtained as a by-product from sugar cane processing. No fossil fuel is used in the project activity. The boilers operate only using bagasse as fuel (Ref.5c).

The quality assurance of data is guarantee by the calibrated meters and automatic data provided in the project. It was also verified documented instructions for the plant operation, monitoring and maintenance. All procedures verified are found consistent with registered PDD (Ref.5a, 5b, 5c). A chart with responsibilities was also provided to SGS (Ref.5d). All data used to calculate emission factor are from official source.

3.2 Monitoring Results

All data is generated automatically. The internal measurement occurs daily and monthly, and this information is cross checked against CPFL data. The internal data is controlled by GESTAL system.

The CPFL receipt of sales with the energy delivered to the grid, is consolidated monthly and sent to Alta Mogiana, by email, in a excel spreadsheet.

The internal system has restricted access. In the sample verified during site visit, internal data and CPFL data were consistent.

For the year 2007, when the electricity generated by G4 was greater than the internal consumption, this energy was discounted from total energy delivered to the grid. This action avoids that the energy generated by G4 be counted for emission reduction. See section 3.3 for more detail about G4.

All receipts of sales from CPFL (Ref.7) were checked against monthly report from Alta Mogiana (Ref.8). No error was found. These values were checked against the ones presented in Monitoring Report (Ref.3). Also, it was confirmed that the exceeding energy generated by G4 not included in the project was discounted from the total energy delivered to the grid (Ref.12).

3.3 Project Implementation

Project was implemented and equipment installed as described in the registered PDD;

Verified the equipments installed in the project activity:

Meters

The following meters were applied during the monitoring period:

- ELO 2180 SP, serial number 40072300-0

As the project had just one meter, the CPFL (energy concessionary), during calibration process carried on 19/09/2007, substituted it by:

- ELO 2180 SP, serial number 40085772-3 (Principal meter)
- ELO 2180 SP, serial number 40085773-1 (Rearguard meter)

Boilers

Are the same from previous verification.

- MC 20042, 200t/h steam, 400°C, 42bar, serial number 072/03.

- AZ 200, 150t/h steam, 400°C, 42bar, serial number 458/2002.
- MC 15042, 150t/h steam, 400°C, 42bar, serial number 1500102.

Generators*

One generator (TG1) was substituted by another one with the same characteristics.

- TG3: Toshiba TABL, 25000kVA, serial number 0120101000, 02/2002.
- TG2: ABB WGWGb 800, 7500kVA, serial number SP25023, 1994.
- TG1: GE 5000 kVA, model 5AT86128474901, serial number BBH 227001579.

*Note: due to a typo error, the registered PDD presents the values in MW, and it should be MVA.

Verified the technical data sheet of each generator to confirm the installed capacity. Through this document it is possible to confirm the MVA and respective MW or kVA and kW (see Ref.13):

- TG3: Toshiba TABL, serial number 0120101000, 25MVA * 0.8 (capacity factor) = 20MW.
- TG2: ABB, serial number SP25023, 7500kVA * 0.8 (capacity factor) = 6000kW.

TG1: GE, serial number BBH 227001579, 5000 kVA * 0.8 (capacity factor) = 4000kW.

Also, a generator (TG4: GE, model 271R612G1, serial number BAH 227001496, 37500 kVA, 02/2007) was installed in 2007. This generator is not part of the project activity. It was installed to generate energy for the internal consumption. A conservative measure was taken by the projects participants to avoid counting emission reductions from the energy produced by this generator. The internal system has the measurement of energy produced by each generator. In the months where the energy generated by G4 was greater than the internal consumption, this difference was discounted from the energy delivered to the grid and no emission reduction was calculated for this energy.

It was verified the installation license for this generator (Ref.6b) and as the project is not exceeding the installed capacity of energy to the grid, the ANEEL resolution (Ref.10) remains the same when the project was implemented.

The meter ELO 2180 SP, serial number 40072300-0 was calibrated on 10/05/2006, by CPFL, certificate nº 6MW5024 (Ref.9).

The meter ELO 2180 SP, serial number 40085772-3 (Principal) and ELO 2180 SP, serial number 40085773-1 (Rearguard) were calibrated on 19/09/2007 by CPFL, certificates numbers 8MW08544 and 8MW08543 respectively were verified (Ref.9).

The calibration period is following the required by ONS (Operador Nacional do Sistema Elétrico – the national entity, in charge of the coordination and control of the generation and transmission of electric energy in the national integrated system).

Spreadsheets of the generators to confirm that the values in kVA and kW:

Data Spreadsheet-Generator 1
(Potency 5000 kVA or 4000 KW)

GEVISA		FOLHA DE DADOS		GE Sistemas Industriais																																																					
				Geradores Sincronos																																																					
CLIENTE Nº DE ORDEM CLIENTE Nº DA PARTE CLIENTE GEVISA REQ/ITEM GEVISA SO Nº DE SÉRIE QUANTIDADE	: USINA ALTA MOGIANA : : : 132-0-3593/01 : 2270359 : 227001579 : 1	ACIONADO POR ALTITUDE MÁXIMA MÁX. TEMP. AMB.	: TURBINA A VAPOR : : : : 1000 m : 40°C																																																						
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Data Spreadsheet- Generator 2
(Potency= 7500 KVA)

ABB	DATA SHEET	DSWB9102
GERADOR SÍNCRONO		2/3

01. DADOS ELÉTRICOS

POTÊNCIA.....	7500	KVA	REAT.SATURADA XD.....	1.220	PU
TENSÃO.....	13800	V	REAT.SATURADA X'D.....	0.200	PU
FREQUÊNCIA.....	60	HZ	REAT.SATURADA X''D.....	0.129	PU
ROTAÇÃO.....	1800	RPM	REAT.SATURADA XQ.....	0.681	PU
CORRENTE NOMINAL.....	313.8	A	REAT.SATURADA X2.....	0.150	PU
CLASSE ISOL.EST./ROT.....	F / F		REAT.SATURADA X0.....	0.059	PU
ELEV.TEMPER. EST/ROT.....	80/90	°C	CONST. DE TEMPO TA.....	0.078	S
FATOR DE POTENCIA NOM.....	0.8		CONST. DE TEMPO T'D.....	0.594	S
REND.4/4 CARGA FP NOM.....	97.0	%	CONST. DE TEMPO T'DO.....	3.881	S
REND.3/4 CARGA FP NOM.....	96.8	%	TIPO DE EXCITACAO.....	BRUSHLESS	
REND.2/4 CARGA FP NOM.....	95.9	%	CORR. EXC.NOM./VAZIO.....	5.6/2.3	A
RELAÇÃO DE CURTO CIRC.....	> 0.7		TENS. EXC.NOM./VAZIO.....	70/22	V
LIGAÇÃO DO ESTATOR.....	ESTRELA		CORR. EXC.MAX./TETO.....	6.2/9	A
			TENS. EXC.MAX./TETO.....	77/112	V

02. DADOS MECÂNICOS/GERAIS

NORMAS.....	IEC	PINTURA.....	3ABL9384-023
FATOR DE SERVIÇO.....	1.0	COR.....	CINZA MUNSELL N6.5
SERVIÇO.....	CONTINUO	CARGA ADICIONAL RADIAL.....	6.2/9 KGFA
PROTEÇÃO.....	IP-54	CARGA ADICIONAL AXIAL.....	--- KGF
MONTAGEM.....	IM-1001	ALTITUDE.....	< 1000 M
REFRIGERAÇÃO.....	ICW37A91	TEMPERATURA AMBIENTE.....	40 °C max.
SENTIDO DE ROTAÇÃO(LA).....	HORARIO	INTERCAMBIÁVEL.....	NÃO
SOBREVELOCIDADE.....	2160 RPM	ÁREA CLASSIFICADA.....	NÃO
PESO DO ROTOR.....	8400 KG	APLICAÇÃO.....	TURBINA
PESO DO ESTATOR.....	12100 KG	TIPO DE ACOPLAMENTO.....	FLEXIVEL
PESO DO GERADOR.....	21600 KG	INERCIÁ DO ROTOR..(J).....	365 KG.M2
PRESSÃO SONORA.....	85 DBA		

03. MANCAIS

TOSHIBA

TOSHIBA DO BRASIL S.A. SEDE E DIV. DE MÁQ. ROTATIVAS
E AUTOMAÇÃO INDUSTRIAL
ESTRADA DOS ALVARENGAS, 5500 - BAIRRO ALVARENGA
CEP: 09850-550 SÃO BERNARDO DO CAMPO - SP
TELS.: GERAL (11) 4358-7199 VENDAS (11) 4358-7180
FAX: (11) 4358-7189 (11) 4358-7179
HOME PAGE: www.toshiba.com.br



FOLHA DE DADOS

A) DADOS PRINCIPAIS:

Cliente	US.ALTA MOGIANA A&A	Projeto	US.ALTA MOGIANA A&A
Equipamento	Turbo gerador	Equipamento acoplado	Turbina a vapor
N. da ordem de produção	OF 0120101011	N. de série	0120101000
Potência nominal	25 MVA	N. de pólos	4
Tensão nominal	13800 V	Corrente nominal	1046 A
Rotação nominal	1800 rpm	Frequência nominal	60 Hz
Fator de potência	0.8	Fator de serviço	1.0
Tipo	TABL	Forma	RCC
Quantidade	1	Normas aplicáveis	ABNT / IEC

B) CARACTERÍSTICAS:

Altitude	menor que 1000 m	Temp. amb. min./máx.	0 °C / 40 °C
Área classificada	não	Instalação	interna
Grau de proteção (IEC)	IP 54	Tipo de resfriamento (IEC)	IC9A1W7
Construção	eixo horizontal	Intercambiabilidade	não
Fator de serviço	1.0	Regime de operação	Continuo (S1)
Classe de isolamento estator	F	Classe de isolamento do rotor	F
Classe de elev.temp. estat.	80 °C (por resist.) FS=1.0	Classe de elev.temp.rotor	90 °C (por resist.) FS=1.0
Sistema de excitação	Brushless (sem PMG)	Acoplamento	Direto / Rígido
Peso total da máquina	48730 kg	GD² (aprox.do rotor)	7090 kg.m²
Peso do estator	28300 kg	Peso do rotor	15210 kg
Comprimento da máquina	5550 mm	Largura da máquina	2745 mm
Altura da máquina	2200 mm	Altura da ponta de eixo	1100 mm
Caixa terminal principal	não (saída por baixo)	Caixa de neutro	não
Caixa terminal auxiliar	3(rtd's, excite.e res.aquec.)	Ligação do estator	estrela (6 terminais)
Trocador de calor	sim (no poço)	Peso do trocador de calor	2300 kg (mais caixa)
Temp. de entrada da água	32°C	Vazão total da água	168 m³/h
Pressão máx. de trabalho	3,0 kgf/cm²	Tubos do trocador	Simplex de cobre
Tipo de óleo	Deslizamento	Lubrificação	Forçada
Vazão de óleo total	ISO VG68 ou equivalente	Pressão máx.	1,0 kgf/cm²
Folga axial (mancal e eixo)	44 l/min	Temp. máx. entrada do óleo	40 °C
Esforços externos (radial)	20mm (total)	Mancal isolado	LOA
Sobrevelocidade	não	Esforços externos (axial)	não
Nível de ruído (sem carga)	2160 rpm (1 minuto)	Sobrecarga	10% 1h a cada 24 h
	85 dBA (SPL a 1 metro)	Conjugado nominal	13528 kg.m

23/08/01

REVISÃO 0

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PG. 1/3

APROV.	VERIF.	FEITO
BANNO	BANNO	WILY

Data Spreadsheet- Generator 3
(Potency= 25 MVA)

Data- Spreadsheet- Generator 4
(Potency= 37000 kVA or 30000 kW)

GEVISA		FOLHA DE DADOS		GE Sistemas Industriais													
CLIENTE : USINA ALTA MOGIANA S/A		ACIONADO POR : TURBINA A VAPOR		Geradores Sincronos													
Nº DE ORDEM CLIENTE : 9263		GD2 REQUERIDO		kgf.m²													
Nº DA PARTE CLIENTE : 132-0-3457/01																	
GEVISA REQ/ITEM : 2270275		ALTITUDE MÁXIMA : 1000 m															
GEVISA SO : 227001496		MAX. TEMP. AMB. : 40°C															
Nº DE SÉRIE : 1																	
QUANTIDADE : 1																	
Nº DE MODELO : 271R612 G1 CARÇAÇA : 9263 TIPO : ATB Nº DE PÓLOS : 04 POTÊNCIA : 37500 kVA POTÊNCIA : 30000 kW ROTAÇÃO : 1800 RPM TENSÃO : 13800 V FREQUÊNCIA : 60.0 Hz Nº DE FASES : 3 PROTEÇÃO/REFRIGERAÇÃO : TEWAC CONEXÃO DO ESTATOR : Y FATOR DE SERVIÇO : 1.0 REGIME DE SERVIÇO : CONTINUO TIPO DE PÓLO ROTOR : SALIENTE C/ AMORTECEDOR CLASSE DE ISOL. ESTATOR : F ELEV. TEMP. ESTATOR : 90°C / RES NO FS 1.0 CLASSE ISOL. ROTOR : F ELEV. TEMP. ROTOR : 90°C / RES. NO FS 1.0 CORRENTE NOMINAL : 1569 A REL. CURTO CIRCUITO : 0.56 TIPO DE ACOPLAMENTO : RIGIDO TIPO DE MANCAL : BUCHA LUBRIFICAÇÃO DO MANCAL : OLEO DESLOCAMENTO AXIAL : 13 mm		<table border="1"> <thead> <tr> <th>Carga(%)</th> <th>FP (pu)</th> <th>Rend (pu)</th> </tr> </thead> <tbody> <tr> <td>100</td> <td>0.80</td> <td>0.972</td> </tr> <tr> <td>75</td> <td>0.80</td> <td>0.971</td> </tr> <tr> <td>50</td> <td>0.80</td> <td>0.966</td> </tr> </tbody> </table> REAT. (pu) Xd = 1.91 X'd = 0.30 X''d = 0.20 Xq = 0.96 X''q = 0.23 PESO TOTAL (ESTIMADO) : 69450 kgf ROTOR GD2 (ESTIMADO) : 15100 kgf.m² Nº DE CONTOURNO : M100D100373 ROTAÇÃO VISTO L.O.A : CCW ENTREFERRO MÍNIMO : 25.4 mm EXCITAÇÃO TIPO : BRUSHLESS POTENCIA : 57 kW TENSÃO : 62.5 V CAMPO BRUSHLESS CORRENTE : 4.2 A VOLTS : 83 V		Carga(%)	FP (pu)	Rend (pu)	100	0.80	0.972	75	0.80	0.971	50	0.80	0.966		
Carga(%)	FP (pu)	Rend (pu)															
100	0.80	0.972															
75	0.80	0.971															
50	0.80	0.966															
DADOS ADICIONAIS DO GERADOR PINTURA FINAL DE ACABAMENTO EM COR MUNSELL N6.5 MÁXIMA VELOCIDADE PREVISTA 2160 RPM PARÂMETROS DE DESEMPENHO EM CONCORDÂNCIA COM IEC 34																	
TESTES MEDIÇÃO DE RESISTÊNCIA DOS ENROLAMENTOS MEDIÇÃO DE RESISTÊNCIA DE ISOLAMENTO CORRENTE DE CAMPO EM VAZIO ENSAIO DE VIBRAÇÃO ENSAIO DE TENSÃO APLICADA CURTO CIRCUITO TRIFÁSICO																	
ACESSÓRIOS 6 ESTATOR-DTR DE PLATINA - 100 OHMS - 0 GC 2 MANCAL-DTR DE PLATINA - 100 OHMS - 0 GC 1 AQUECEDOR - 3200W - 220 V - 1 FASE 2 TERMOMETRO COM VISOR - COM 2 CONTATOS 1 DETECTOR DE VAZAMENTO DE AGUA COM 1 CONTATO																	
PREPARADO POR : A. GRABERT APROVADO : Emissão : 22 mai 2006 Revisão: 01 06 Jul 2006				FL 1 de 2 DS2270275													

3.4 Completeness of Monitoring

The reporting procedures reflect the content of the monitoring plan. The monitoring mechanism is effective and reliable

3.5 Accuracy of Emission Reduction Calculations

The calculation of emission reductions is found to be correct. No CARs were raised. The details of the reported and the verified values for all parameters are listed in section 4.

3.6 *Quality of Evidence to Determine Emission Reductions*

Critical parameters used for the determination of the Emission Reductions are discussed above in section 3.2 above. All the data recorded is in compliance with the monitoring report.

3.7 *Management System and Quality Assurance*

The companies involved in the project have quality assurance procedure implemented; therefore we can affirm that the management system the CDM project is in place; with the responsibilities properly identified and in place.

In order to verify data quality, the companies involved in the project works in accordance with a quality assurance procedure, which establishes the operational and management structure implemented.

3.8 *Data from External Sources*

Ex-post Emission Factor of the S-SE-CO Brazilian Grid (EF) = 0.2798 tCO₂/MWh calculated for the year of 2006 (Ref.11a), and 0.2628 tCO₂e/MWh calculated for the year 2007.

Calculations of ex-post emission factors for the S-SE-CO for 2006 and 2007 were checked through the worksheets (ref 11a and 11b) and were found to be correctly calculated.

4. Calculation of Emission Reductions

Parameter	Reported Value	Verified Value
Electricity supplied to the grid in 2006 (EGy)	73,891.525 MWh	73,891.525 MWh
Electricity supplied to the grid in 2007 (EGy)	72,308.318 MWh	72,308.318 MWh
Emission factor (EF) - (ex-post 2006)	0.2798 tCO ₂ e/MWh	0.2798 tCO ₂ e/MWh
Emission factor (EF) - (ex-post 2007)	0.2798 tCO ₂ e/MWh	0.2628 tCO ₂ e/MWh
Total of emission reduction	39,676 tCO ₂ e	39,676 tCO ₂ e

Calculations of ERs for 2006 and 2007 are found correct:

$$\mathbf{ERs} = (73,891.525 \text{ MWh} * 0.2798 \text{ tCO}_2\text{e/MWh}) + (72,308.318 \text{ MWh} * 0.2628 \text{ tCO}_2\text{e/MWh}) = \mathbf{39,676 \text{ tCO}_2\text{e}}$$

5. Recommendations for Changes in the Monitoring Plan

No recommendation is necessary for changes in the monitoring plan.

6. Overview of Results

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

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

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

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

Yes. Fabian Gonçalves and Thaís Carvalho (Lead Assessor and Trainee Local Assessor) visited the sites and undertook interviews, collected data, audited the implementation of procedures, checked calibration certificates and checked data, inter alia.

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

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

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

CO₂ Emission factor of the S-SE-CO Brazilian Grid (EF) for 2006= 0.2798tCO₂e/MWh was used.

CO₂ Emission factor of the S-SE-CO Brazilian Grid (EF) for 2007= 0.2628tCO₂e/MWh was used

These are values determined ex-post according to registered PDD and validation report. They are calculated using official data provided by ONS – Brazilian Electricity System manager (the parameters used for calculation are CO₂ Operating Margin Emission factor of the grid, CO₂ Build Margin of the grid and Lambda - Fraction of time during which low cost/must-run sources are on the margin).

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

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

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

No.

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

The data used in anthropogenic emission reduction calculation is consistent with those contained in the registered PDD and monitoring plan. The emission reduction was 26,214 tCO₂ for the period 01/01/2006 to 31/12/2007 as per the estimation made in the registered PDD. The actual emission reduction has been verified as 39,676 tCO₂ for the same period. The emission reduction increased because the sugar cane crush increased due to the demand of sugar and alcohol production.

Consequently, the available amount of sugar cane bagasse increased and more energy was generated.

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

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

Post monitoring report on UNFCCC website

Yes, the monitoring report is available at ref. 0181 on UNFCCC website

<http://cdm.unfccc.int/Projects/DB/TUEV-SUED1134666922.78/view>

7. Verification and Certification Statement

SGS United Kingdom Ltd has been contracted by Usina Alta Mogiana S/A Açúcar e Álcool to perform the verification of the emission reductions reported for the CDM project Alta Mogiana Bagasse Cogeneration Project (AMBCP), UNFCCC reference number 0181 in the period 01/01/2006 to 31/12/2007.

The verification is based on the validated and registered project design document and the monitoring report for this project. Verification is performed in accordance with section I of Decision 3/CMP.1, and relevant decisions of the CDM EB and CoP/MoP. The scope of this engagement covers the verification and certification of greenhouse gas emission reductions generated by the above project during the above mentioned period, as reported in 2nd Monitoring Report, Alta Mogiana Bagasse Cogeneration Project (AMBCP), 03/11/2008, version 3.

The management of the Usina Alta Mogiana S/A Açúcar e Álcool is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project Monitoring Report version 3, 03/11/2008. Calculation and determination of GHG emission reductions from the project is the responsibility of the management of the Alta Mogiana Bagasse Cogeneration Project (AMBCP). The development and maintenance of records and reporting procedures are in accordance with the monitoring report.

It is our responsibility to express an independent GHG verification opinion on the GHG emissions and on the calculation of GHG emission reductions from the project for the period 01/01/2006 to 31/12/2007 based on the reported emission reductions in the Monitoring Report 3 dated 03/11/2008 for the same period.

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

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

Project Title:	Alta Mogiana Bagasse Cogeneration Project (AMBCP)
UNFCCC Reference Number:	0181
Registered and Approved PDD used for Verification:	Version 2B, 2/12/2005
Methodology used for Verification:	Bagasse-based cogeneration connected to an electricity grid, version 01, 22/09/2004
Applicable Period:	01/01/2006 to 31/12/2007
Total GHG Emission Reductions Verified:	39,676 tCO ₂ e

Signed on behalf of the Verification Body by Authorized Signatory



Signature:

Name: Siddharth Yadav

Date: 10th December 2008

8. Document References

- /1/ PDD, version 2B, 2nd December 2005: Alta Mogiana Bagasse Cogeneration Project (AMBCP).
- /2/ AM0015: Bagasse-based cogeneration connected to an electricity grid (version 01, 22/09/2004).
- /3/ 2nd Monitoring Report Alta Mogiana Bagasse Cogeneration Project (AMBCP):
Version 1, 02/09/2008;
Version 2, 09/09/2008;
Version 3, 03/11/2008
- /4/ First Verification Checklist for Alta Mogiana Bagasse Cogeneration Project (AMBCP)–
CDM.Ver0062 (UK.AU4i.CDM.Ver0062)
- /5a/ Procedure: IT-GEEN-001 rev05, 23/05/2008 (Generators' operation)
- /5b/ Procedure: IT-GEEN-002 rev01, 28/04/2008 (Substation Alta Mogiana operation)
- /5c/ Procedure: PG-GEVA-001 rev02, 31/07/2006 (Steam generation)
- /5d/ NA-SGEAM-003 rev01, 03/05/2006 (Internal Organizational Structure)
- /6a/ Operation License LO 27001899
- /6b/ Operation License LO 27002908
- /7/ CPFL receipt of sales 2006 and 2007
- /8/ Alta Mogiana internal reports 2006 and 2007
- /9/ Calibration certificates
- /10/ ANEEL Resolution No 231, 8 May 2003
- /11a/ EF (2006)-Cópia de BR – Grid EF SSECO 2006 expost – 2007.07.08 exl.doc
- /11b/ EF (2007)-Cópia de BR – Grid EF SSECO 2007 expost – 2008.04.21 exl.doc
- /12/ ER spreadsheet: Alta Mogiana CERs calculation 2008.09.09 v1
- /13/ Generators technical data sheet.