VERIFICATION AND CERTIFICATION REPORT

Econergy do Brasil Ltda.

CENAEEL – Central Nacional de Energia Eólica S.A.

Horizonte Wind Power Generation Project

SGS Climate Change Programme
SGS United Kingdom Ltd
SGS House
217-221 London Road
Camberley Surrey
GU15 3EY
United Kingdom

Date of Issue:	**Project Number:**
13-08-2008	CDM.VER0145
Project Title:	
Horizonte Wind Power Generation Project	
Organisation:	**Client:**
SGS United Kingdom Limited	Econergy do Brasil Ltda.
Publication of Monitoring Report:	
Monitoring Period:	27th April 2007 – 25th March 2008
First Monitoring Version and Date:	Version 1, 5 May 2008
Final Monitoring Version and Date:	Version 2, 30 May 2008

Summary:

SGS United Kingdom Ltd has performed the periodic verification of the CDM project Horizonte Wind Power Generation Project, UNFCCC Ref. Number 0486. The verification includes confirming the implementation of the monitoring plan of the registered PDD number 0486 and the application of the monitoring methodology as per AMS-I.D, Version 8, from 3rd March 2006. A site visit was conducted to verify the data submitted in the monitoring report.

The project activity is a wind power plant with generation capacity of 4.8MW (consisting of eight turbines of 600kW), located in the city of Água Doce, in the Northwest of the State of Santa Catarina (Brazil).

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 5,061 tCO_2e during period 27th April 2007up to 25th March 2008.

Subject:

CDM Verification

Verification Team:

Fabian Gonçalves – Lead Assessor
Fabiana Philipi – Local Assessor (Trainee)

Technical Review:	**Trainee Technical Reviewer:**
Date: 05-06-2008 Name: AureaNardelli	Name: N/A

Authorised Signatory:

Name: Siddharth Yadav
Date: 14th August 2008

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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 Econergy Brasil Ltda. to perform an independent verification of its CDM project Horizonte Wind Power Generation Project. 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:	Horizonte Wind Power Generation Project
UNFCCC Registration Number:	0486
Monitoring Period Covered in this Report	27th April 2007 to 25th March 2008
Project Participants	CENAEEL (Central Nacional de Energia Eólica S.A.) and Econergy Brasil Ltda.
Location of the Project Activity:	The Project Activity is located in the city of Água Doce, in the Northwest of the State of Santa Catarina.

The Horizonte Wind Power Generation Project consists in generation renewable energy through wind power resources and selling it to the Brazilian Grid. The project is promoted by CENAEEL (Central Nacional de Energia S.A.), a Brazilian private wind power developer that sells the energy produced to Celesc – Centrais Elétricas de Santa Catarina – local distributor. It started generating in 2004. The wind power generation capacity is 4.8MW (consisting of eight aero-turbines of 600kW).

The Project Activity is located in the city of Água Doce, in the Northwest of the State of Santa Catarina.

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	Brazil
Fabiana Philipi	Local Assessor (Trainee)	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 Paulo, São Paulo - Brazil	
Date: 12th May 2008	
Coverage:	**Source of Information / Persons Interviewed**
Monitoring plan and emission reductions	Econergy Brasil / Mauricio Rovea
Sample of invoices. Procedures. Electricity generation records. Sampling of internal system data.	CENAEEL / Daniel Salvatore Fernandes

Location: Água Doce, Santa Catarina - Brazil	
Date: 13th May 2008	
Coverage:	**Source of Information / Persons Interviewed**
Equipments installed; operation. Maintenance procedures.	CENAEEL / Daniel Salvatore Fernandes

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 parameter established in the monitoring plan (dispatched energy to the grid) is presented in monitoring report (Ref.3).

No mistakes or changes related to the crediting period date were verified. Monitoring period: 27 April 2007 to 25 March 2008.

No changes observed in the monitoring plan against methodology AMS-I.D. Project stills following the registered monitoring plan and methodology.

No additional source attributable to the project activity needs to be included in the monitoring plan.

3.2 Monitoring Results

All data is generated automatically. There is an internal system (SCADA System) that produces a monthly statement from gross electricity production (higher than electricity production invoiced due losses in CENAEEl transmission system till the grid). The meter sends information to Celesc internal system and this data is the base of the invoices. Celesc monthly e-mails CENAEEL providing file that reports the energy produced.

There are 3 (three) reports for corroborate data:

- Celesc internal system report: generated from data collected by an energy meter calibrated with high precision (official data – Ref.9);
- CENAEEL Invoices: generated from Celesc internal system data send by e-mail monthly to CENAEEL (Ref.6).
- CENNAEL internal system report: SCADA system generates a spreadsheet reporting the monthly gross electricity production (Ref.5).

CENAEEL invoices values were cross-checked against Celesc internal system values and spreadsheet of the monthly electricity production supplied by CENAEEL.

The results are described in the Section 3, item 1.1 of the CDM Verification Protocol and summarized below:

Net electricity supplied to the grid by the project
9,627.229 MWh

3.3 Remaining Issues, CAR's, FAR's from Previous Validation or Verification

Not applicable.

3.4 Project Implementation

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

The Energy Meter SAGA 1000 (42109666) remains the same since the beginning of the project and there were two calibrations in the related verification period: first on 3rd February 2006 (Ref.7), and second on 29th April 2008 (Ref.8). The calibration periodicity is in accordance with determined by ONS calibration procedure (Operador Nacional do Sistema Elétrico – National Electricity System Operator – the national entity in charged of the coordination and control of the generation and transmission of electric energy in the national integrated system) that determines that meter should be calibrated every two years (Ref. 12, Anexo 1).

The company Wobben is hired to operate the plant and is in charged of the maintenance of it (every three months). All procedures are registered on a record book. The operator was interviewed and observed performing his activities (monitoring and maintenance).

3.5 Completeness of Monitoring

The reporting procedures reflect the content of the monitoring plan. The monitoring mechanism is effective and reliable. The only change from Monitoring Report Version 1 to Version 2 was a correction on the start date of the monthly energy produced from November/December. The date 26th November 2007 was replaced by 27th November 2007.

3.6 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.

3.7 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.

3.8 Management System and Quality Assurance

Wobben is the third part in charge of the operation and maintenance of the wind farm. It is the same company that produces the wind power generators, therefore it can be affirmed that the management system the CDM project is in place; with the responsibilities properly identified.

In order to verify data quality, the Companies involves in the project work in accordance with a quality assurance routine verified during site visit, which establishes the operational and management structure implemented.

3.9 Data from External Sources

Emission factor of the S-SE-CO Brazilian Grid (EF) = 0.5258 tCO_2e/MWh.

Fixed value determined *ex-ante* in accordance with registered PDD. No calculation is applicable.

4. Calculation of Emission Reductions

Parameter	*Reported Value*	*Verified Value*
Electricity supplied to the grid (EGy)	9,627.229 MWh	9,627.229 MWh
Emission Factor (EF) – (fixed ex-ante)	0.5258 tCO_2/MWh	0.5258 tCO_2/MWh
Total of emissions reductions	5,061 tCO_2e	5,061 tCO_2e

Metered Electricity: 9,627.229MWh

EF: 0.5258tCO_2/MWh

ER= 9,627.229 * 0.5258 = 5,061tCO2e

5. Recommendations for Changes in the Monitoring Plan

A revised monitoring plan will be submitted before the next issuance, describing that calibration will occur every two years.

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 as lead assessor and Fabiana Philipi as 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.

Emission Factor of the S-SE-CO Brazilian Grid (EF)= 0.5258 tCO_2e/MWh.

This is fixed value determined ex-ante according to registered PDD.

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 6,074 tCO2 for the period 27/04/2007 to 25/03/2007 as per the estimation made in the registered PDD. The actual emission reduction has been verified as 5,061 tCO2 for the period 27/04/2007 to 25/03/2008.

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. 0486 on UNFCCC website

http://cdm.unfccc.int/UserManagement/FileStorage/QKTLR2PCOAANCSDUI0AIOB6WHQVYUK

7. Verification and Certification Statement

SGS United Kingdom Ltd has been contracted by Econergy Brasil Ltda. to perform the verification of the emission reductions reported for the CDM project Horizonte Wind Power Generation Project / Ref. number 0486 in the period from 27th April 2007 to 25th March 2008.

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 3rd Monitoring Report – Horizonte Wind Power Generation Project; 30th May 2008; Version 2.

Econergy Brasil Ltda. 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 2, 30th May 2008. Calculation and determination of GHG emission reductions from the project is the responsibility of the management team of the Horizonte Wind Power Generation Project. 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 from 27th April 2007 to 25th March 2008 based on the reported emission reductions in the Monitoring Report Version 2 dated 30th May 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:	Horizonte Wind Power Generation Project
UNFCCC Reference Number:	0486
Registered PDD and Approved Used for Verification:	Version 3, 2nd May 2006
Methodology Used for Verification:	AMS-I.D. – Version 8 from 3rd March 2006.
Applicable Period:	27/04/2007 – 25/03/2008
Total GHG Emission Reductions Verified:	5,061 tCO_2e

Signed on behalf of the Verification Body by Authorized Signatory

Signature: 

Name: Siddharth Yadav

Date: 14th August 2008

8. Document References

/1/ Horizonte Wind Power Generation Project – Registered PDD on 2nd May 2006 as a CDM Project entitled on Horizonte Wind Power Generation Project (0486)

/2/ AMS-I.D. – Grid connected renewable electricity generation (Version 8 – 3rd March 2008)

/3/ 3rd Monitoring Report – Horizonte Wind Power Generation Project, Version 1 – 05/05/2008 and Version 2 – 30/05/2008

/4/ Operation Licence

/5/ Internal system statement (SCADA)

/6/ Invoices 2007 and 2008

/7/ Calibration Certificate (February 2006)

/8/ Calibration Certificate (April 2008)

/9/ Celesc system statement

/10/ E-mail from Celesc to CENAEEL

/11/ CER spreadsheet

/12/ ONS Calibration Procedure

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