
VERIFICATION AND CERTIFICATION REPORT

Datang Zhangzhou Wind Power Co., Ltd

Fujian Zhangpu Liuaio 45MW Wind Power Project

Monitoring period 5: 28/05/2011–27/05/2012 (first and last days included)

SGS Climate Change Programme

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Summary:			
SGS United Kingdom Limited has performed the 5th verification of the GS-CDM project Fujian Zhangpu Liuaio 45MW Wind Power Project (UNFCCC Ref. Number 1318 and GS Project ID. GS375). The verification includes confirming the implementation of the monitoring plan of the revised PDD version 07 dated 01/08/2012 approved by CDM EB on 07/01/2013 and the application of the monitoring methodology as per ACM0002 Version 06, dated 19/05/2006. A site visit was conducted to verify the data submitted in the monitoring report. SGS confirms the following has been reviewed; (a) The registered PDD and the revised PDD, including the monitoring plan, the PDD GS Annex and the corresponding validation report; (b) Monitoring report, emission reduction spreadsheet, the previous verification reports; (c) The applied monitoring methodology; (d) Relevant decisions, clarifications and guidance from the CMP and the Gold Standard Secretariat and CDM Executive Board/VCS Board. (e) All information and references relevant to the project activity's resulting in emission reductions The Project is to generate electricity using wind power resources and deliver to the East China Power Grid (ECPG) which is predominated by connected fossil fuel fired power plants. So the Project reduces GHG emissions by replacing the electricity generated by fossil fuel fired power plants. The Project involves the installation of 36 sets of wind turbines with 1.25MW capacity per unit, its total installed capacity is 45MW. The estimated emission reduction is about 84,130 tCO₂e annually. SGS confirms that the project is implemented in accordance with the validated and revised Project Design Document. The monitoring system is in place and the emission reductions are calculated without material misstatements. The assessment team's 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 the assessment team confirm that the implementation of the project has resulted in 71,900 tCO₂e emission reductions during period 28/05/2011 up to 27/05/2012.			
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Gold Standard Verification			
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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reductions
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
CL	Clarification Request
DRR	Daily Reading Records
ECPG	East China Power Grid
ERs	Emission reductions
ETNs	Electricity Transaction Notes
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GS	Gold Standard
MP	Monitoring Plan
MR	Monitoring Report
MRR	Monthly Reading Records
PDD	Project Design Document
PP	Project Participant
PPA	Power Purchase Agreement
SGS	SGS United Kingdom Limited
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard

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1. Introduction

1.1 Objective

SGS United Kingdom Limited has been contracted by Datang Zhangzhou Wind Power Co., Ltd to perform an independent verification of its GS-CDM project Fujian Zhangpu Liuaio 45MW Wind Power Project. GS 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 (qualitative and quantitative) in the revised 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 revised project design document and the monitoring report. The project is assessed against the requirements of the Gold Standard version 1.0, Kyoto Protocol, the CDM Modalities and Procedures and related rules and guidance.

SGS has, based on the recommendations in the Gold Standard Requirement, Gold Standard Toolkit and the Validation and Verification Standard 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:	Fujian Zhangpu Liuaio 45MW Wind Power Project
UNFCCC Registration Number:	UNFCCC Ref. No. 1318
Gold Standard Registry Number:	GS Project ID. GS375
Monitoring Period Covered in this Report	28/05/2011 to 27/05/2012
Project Participants	Datang Zhangzhou Wind Power Co., Ltd (P.R.China - host) RWE Supply & Trading Netherlands B.V. (Netherlands) RWE Supply & Trading Netherlands B.V. (Switzerland)
Location of the Project Activity:	Liuaio Town, Zhangpu County, Fujian Province, P. R. China

The Project is to generate electricity using wind power resources and deliver to ECPG which is dominated by connected fossil fuel fired power plants. The Project reduces GHG emissions by replacing the electricity generated by fossil fuel fired power plants. The Project involves the installation of 36 sets of wind turbines with 1.25MW capacity per unit, with a total installed capacity of 45MW. The estimated emission reduction is about 84,130 tCO₂e annually. The project started construction on 28/12/2006. The first set of wind turbine started operation on 25/06/2007. All the turbines were put into full operation since January 2008.

2. Methodology

2.1 General Approach

SGS' 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. The strategic review and risk assessment and verification of parameters is undertaken by means of a combined verification protocol.

Using the Verification protocol, 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

Assessment Team	
Name	Role
Yuan Xue	Lead Assessor/Team Leader/Sectoral Scope Expert (TA1.2)
Jennifer Yi Yinghua	Assessor /Local Assessor

Technical Review Team	
Name	Role
Michael Wu Shimin	Technical Reviewer/Sectoral Scope Expert (TA1.2)

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 by the lead assessor/ sectoral scope expert and the assessor/ local assessor.

Location: Liua Town, Zhangpu County, Fujian Province, P. R. China	
Date: 11/07/2012	
Coverage:	Source of Information / Persons Interviewed
1. Assessment of the implementation and operation of the project activity as per the revised PDD and monitoring plan;	Jiang Lifang, Datang Zhangzhou Wind Power Co., Ltd;
2. Review of information flows for generating, aggregating and reporting the monitoring parameters;	Yan Haiying, China National Water Resources & Electric Power Materials & Equipment Co., Ltd;
3. Interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the monitoring plan.	Meng Qing, China National Water Resources & Electric Power Materials & Equipment Co., Ltd.
4. A cross-check between information provided in the monitoring report and data from other sources such as MRRs, DRRs and sales receipts;	Jiang Feng, China National Water Resources & Electric Power Materials & Equipment Co., Ltd.
5. A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PDD and the selected methodology;	Wang Shudan, Jiu Town, Zhangpu county;
6. Review of calculations and assumptions made in determining the GHG data and emission reductions;	Chen Kaifang, Da'ao villiage, Liu'ao Town.
7. Identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters	
8. The verification of the monitoring of the SD indicators such as employment (number and quality), replantation and noise control.	

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 Clarification Request (CL) 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. Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;

- II. Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
- III. Issues identified in a FAR during validation to be verified during verification have not been resolved by the project participants.

The verification process may be halted until this information has been made available to comply with the Gold Standard requirements or the requirements of the CDM Executive Board/GS Board. Failure to address a CL may result in a CAR. Information or clarifications provided as a result of a CL may also lead to a CAR.

A clarification request (CL) will be raised if information is insufficient or not clear enough to determine whether the applicable Gold Standard and CDM/GS requirements have been met. All CARs and CLs raised during verification shall be resolved prior to submitting a request for issuance.

Corrective Action Requests and Clarification requests are raised in the Periodic Verification Checklist. The Project Developer is given the opportunity to “close” outstanding CARs and respond to CLs and Observations.

Forward Action Requests (FARs) may be raised during verification for actions where the monitoring and reporting require attention and/or adjustment for the next verification period. 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.

All CARs, CLs and FARs for this verification period are included in this report.

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 Implementation - General

Referring to the project information on the UNFCCC website (/5/), the project was registered on 21/01/2008 against ACM0002 version 06 (/1/). The first crediting period is from 21/01/2008 to 20/01/2015 (renewable). From the information available on the Gold Standard website, <https://gs2.apx.com/mymodule/ProjectDoc/EditProjectDoc.asp?id1=375>, the project is also approved as a GS-CDM project with GS Project ID of GS375. The monitoring period under GS-CDM verification is the fifth GS-CDM monitoring period. The start date of this monitoring period is 28/05/2011, which is the day after the end date of the fourth monitoring period. The end date of this monitoring period is 27/05/2012, which is within the first crediting period.

The project boundary is verified to be in compliance with the one indicated in the revised PDD version 07. Project was implemented and equipment installed as described in the revised PDD (/4/). Required facilities and equipments have been installed before start of this monitoring period. The project started on 28/12/2006, the first set of wind turbine started operation on 25/06/2007 and all 36 sets of wind turbines were put into operation in January 2008, which was verified through reviewing the operation log of wind turbines (/13/). Connected substation of the project was changed from Changjiaoying station to Dongpu station on 04/05/2011, hence corrected PDD version 07 dated 01/08/2012 including this change is submitted to UNFCCC and approved on 07/01/2013.

The QA/QC procedures described in the revised PDD have been followed in the actual monitoring of the project. Relevant procedures are documented in monitoring plan of the project (/19/). Parameters monitored and monitoring approach reported in the monitoring report are consistent with the revised PDD in terms of unit, measurement procedures and monitoring frequency. The data used in anthropogenic emission reductions calculation are consistent with those contained in the revised PDD and monitoring plan. Emergency Plan (/23/) and Staff Training Plan (/22/) are set up. Staffs are well trained and qualified. Through the document review and onsite visit, it is confirmed by the verification team that the actual monitoring of the project is in accordance with the monitoring plan in the revised PDD and the monitoring plan is in accordance with the methodology applied ACM0002 version 06. No events or situations occurred during the monitoring period, which may impact the applicability of the methodology.

The verified emission reductions achieved by the project in this monitoring period are 71,900 tCO₂e. The estimated emission reductions were calculated as 84,130 t CO₂e based on the data in the revised PDD. The actual emission reductions in this monitoring period are lower than the estimates in the revised PDD because of the actual wind source variation for this monitoring period.

Following review in the second monitoring period, SD indicators including employment (number and quality), replantation and noise control were monitored and reported in the MR. The detailed information could be referred to section 3.4.

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

This is the fifth monitoring period. By checking against the validation report and previous verification reports (/6//7//8//9//10/), there are no remaining issues from the previous 4 periodic verifications. All findings from previous verifications had already been closed out. Also, the CDM Registry administrator has been instructed to issue 71,901 CERs of the fifth monitoring period from 28/05/2011 to 27/05/2012 for the CDM project activity "Fujian Zhangpu Liua 45MW Wind Power Project" on 07/01/2013. Because emissions reductions are separated into calendar year 2011 and 2012 respectively, total number of the ERs is changed from 71,901 t CO₂e to 71,900 t CO₂e due to the round down of the calculated result. Please refer ERs spreadsheet for details.

3.3 Compliance of the monitoring plan with the monitoring methodology.

The project was registered against the approved methodology ACM0002 version 06. In accordance with paragraphs 229-232 of the VVS version 03.0, SGS confirms that the registered monitoring plan is in accordance with the approved methodology ACM0002 version 06. The documents for this monitoring period are complete and transparent.

3.4 Completeness of Monitoring

Monitoring of reductions in GHG emissions resulting from the registered project activity have been implemented in accordance with the monitoring plan contained in the revised PDD version 07 (/4/). The monitoring mechanism is effective and reliable.

3.4.1 Baseline emission

According to the revised PDD Version 07 of the project, parameter EG_y , net electricity delivered to the grid during year y needs to be monitored.

Net electricity delivered to the grid is the electricity exported to the Grid by the project ($EG_{\text{export},y}$) minus the electricity imported from the Grid by the project ($EG_{\text{import},y}$).

As per the revised PDD of the project and the Power Purchase Agreement (PPA) (/18/) signed between the wind farm company and Fujian Province Zhangpu County Electric Power Company (the Grid Company), one bidirectional meter has been installed at the wind farm to measure the electricity exported to the Grid and the electricity imported from the Grid. A backup meter has been installed at the wind farm for reference when the main meter is out of order.

Designated personnel read the readings of the two meters and manually transcribed the readings into Daily Reading Records (DRRs) (/13/) on a daily basis. Accumulated data were transcribed into Monthly Reading Records (MRRs) (/14/) on a monthly basis.

At designated time of every month, usually at 00:00 hour on the 28th day of every month, both the grid company and the wind farm company read and recorded the readings of the meter(s). Based on the readings of the meter(s), the Grid Company issued Electricity Transaction Notes (ETNs) to the wind farm company for the exported and imported electricity. After confirming the numbers on the ETNs for the exported electricity to the Grid by the project, the wind farm company issued sales invoices to the Grid Company subsequently on a monthly basis. The Grid Company issued sales invoices to the wind farm company for the imported electricity by the wind farm based on the readings of the meter(s).

Data in the Monthly Reading Records (MRRs) were used to calculate the net electricity delivered to the Grid by the project. ETNs and sales invoices, serving as sales receipts (/16//17/), were used for cross-check purpose by SGS assessors. Data in the Daily Reading Records (DRRs) were checked for a cross reference.

Line losses were deducted from the electricity exported to the grid on the sales receipts from 28/05/2011 to 27/05/2012; this is stated on page 10 of the PPA valid from 28/11/2008 between the project owner and Grid Company which has been provided to the verification team. Original meter readings and sales receipts for electricity exported to and imported from the grid in this monitoring period have been provided by the PP and checked by the assessment team. It has been verified that the reported values of electricity exported to and imported from the grid in the monitoring report are accurate and the PP adopted a conservative approach by using the smaller values for electricity exported to the grid between the two sources of meter readings and sales receipts for the ERs calculation. Supporting references and data required to determine the net electricity delivered to the grid by the project is found to be complete and transparent.

3.4.2 Project emissions

As per page 18 of the PDD and applied methodology ACM0002 version 06, the project emission is zero. There were no fossil fuels used for electricity generation by the project activity during the monitoring period.

3.4.3 Leakage

As per page 18 of the PDD and applied methodology ACM0002 version 06, no leakage needs to be considered.

3.4.4 SD indicators

1. Employment (number and quality)

Employment (number and quality) was monitored by confirmation letter about employment and salary payment, and records of social welfare (/24/).

Sixty-six temporary job positions were offered by the project during the construction period of the project. A total of 871,500Yuan RMB was paid to the sixty-six employees (/24/).

Seven permanent employees have been employed by the project company for the operation and maintenance of the project. During this monitoring period, the annual salary for the eleven staffs is 45,350yuan/person (/25/).

It is stated in the GS-Annex submitted during validation that the construction of the power plant is estimated to provide around 300 jobs and a dozen jobs are created for power plant operation and maintenance. The PP clarified that 300 jobs are the number of job opportunities that may be provided by the Liuaio Wind Farm which includes three phases. The Fujian Zhangpu Liuaio 45MW Wind Power Project is the phase 2 project. It was a misunderstanding about the project activity at validation stage. 66 jobs were created during construction. The supporting materials have been provided to and verified by SGS.

Taking into account of the actual numbers of job opportunities provided by the project activity, it is verified that the initial sustainable development assessment carried out during validation is not significantly affected by this difference.

Furthermore, measures planned of anti-accident and labour protection and safety measures, and Management standards of production safety responsibility system (/34/) are found in place as rules preventing injury. Training plan and records (/22/) are also in place and verified.

2. Replantation

Replantation was prescribed in the construction contract for replantation signed on 20/09/2008 between the Datang Zhangzhou Wind Power Co., Ltd and Zhangpu County Forestry Bureau (/29/) and implemented by Zhangpu County Forestry Bureau, which was verified by the verification team during the periodic verification. The construction contract for replantation has been finished and accepted in October 2009 and the vegetation maintenance confirmed by the assessment team during on-site visit was kept by Datang Zhangzhou Wind Power Co., Ltd constantly. Datang Zhangzhou Wind Power Co., Ltd signed service contract for road maintenance, flood control, typhoon prevention, and reinforcement with Xiamen Fengsheng Trading Co., Ltd on 30/12/2009 (/26/). Xiamen Fengsheng Trading Co., Ltd is responsible for the vegetation maintenance from 10/03/2010 to 09/03/2011. It has been verified by the assessment team that Zhangpu Yongfu Flower Plantation is responsible for planting shrubs and grass to improve soil and water conservation of wind farm from 17/06/2011 to 25/06/2011 according to the Plant Protection Engineering Contract signed on 05/06/2011 (/28/) and Xiamen Fengsheng Trading Co., Ltd. is responsible for the venues secondary formation, soil and water conservation and vegetation planting of the wind farm from 14/05/2012 to 03/06/2012 according to Liuaio wind farm two venues (S1, S3, S5) secondary formation of Soil and Water Conservation prevention construction contract signed on 11/05/2012 (/32/).

3. Noise Control

During the onsite visit and document review, it has been found that the noise in the area 200 meters of the project has been under control according to the data from the noise monitoring report issued by Fujian Environmental Monitoring Center (/27/).

3.5 Accuracy of Equipment

According to the revised PDD, the accuracy of electricity meters monitoring EG_{export} and EG_{import} should be 0.2S. The calibration frequency is once per year. Calibration certificates of the metering equipments (/11/) and accreditation certificate for the calibration entity (/12/) have been checked by the verification team. The accuracy level of both the main meter and the backup meter is 0.2S. The meters have been calibrated annually in accordance with the monitoring plan and Chinese national technical standard DL/T448-2000.

The calibration information has been reported in the Version 02 (/2/) of the monitoring report. Details are as follows:

Monitoring equipment	M1 (backup meter)		M2 (main meter)		
Monitoring parameter	EGy		EGy		
S/N	02077812		02069159 (From 28/05/2011 to 15/12/2011)		02068436 (Since 15/12/2011)
Type	Electricity meter		Electricity meter		Electricity meter
Level	0.2s		0.2s		0.2s
Calibration frequency requirement	annually		annually		annually
Calibration date	16/12/2010	08/11/2011	16/12/2010	08/11/2011	29/11/2011
Validity	15/12/2011	07/11/2012	15/12/2011	07/11/2012	28/11/2012
Are there delays in calibration?	No		No		No
Calibration Entity	Fujian Provincial Electric Power Company Metrological Verification Center				
Accreditation Certificate for the calibration entity	Issued by Quality and Technology Supervision Bureau of Fujian Province during the period of 18/09/2009-17/09/2012 with Certificate No.(Min)Faji (2006)270021				

By means of the on site visit and document review, the assessment team found that the main meter was changed from original meter (SN: 02069159) to new meter (SN: 02068436) on 15/12/2011. However, this information was not reported in MR Version 01. So **CL#1** was raised to request the PP to clarify in this regard. As per the PP's clarification, the assessment team confirmed that relevant information was added in the MR section C and D.2. Through verifying the meter replacement record (/31/) and the calibration reports (/11/) of the original meter (SN: 02069159) and new meter (SN: 02068436), it is confirmed that the original main meter was replaced to a new one on 15/12/2011 and both meters have been duly calibrated. It is confirmed by the assessment team that replacement of the main meter does not affect monitoring and hence no impact on data was observed. Hence, **CL#1 was closed out.**

3.6 Accuracy of Emission Reduction Calculations

According to the VVS version 03.0, the accuracy of emission reduction calculations has been verified by the assessment team. In accordance with the MP, a complete set of data for the specified monitoring period is available. The monitored data of the parameters reported in the monitoring report has been cross checked with sales receipts, and DRRs have been used for a cross reference. The ER calculation spreadsheet (/3/) has been reviewed and found to be correct. Appropriate methods and formulae for calculating the baseline emissions have been followed. To conclude, the calculations of the baseline emissions and emission reductions are in accordance with the applied methodology and the revised PDD. The details of the reported and the verified values for the parameter are listed in section 4, "Calculation of Emission Reductions". No findings were raised about the accuracy of emission reduction calculations.

3.7 Quality of Evidence to Determine Emission Reductions

Critical parameters used for the determination of the Emission Reductions are discussed in section 3.4 above. All the data recorded is in compliance with the monitoring report.

3.8 Management System and Quality Assurance

The management system and quality assurance procedures have been stipulated in the CDM monitoring plan (/19/) and have been implemented during daily operation. This has been verified by the on-site visit and document review following the VVS (/20/). Therefore the assessment team can confirm that the management system of the CDM project is in place; with the responsibilities properly identified and in place.

According to “Guidelines for completing the monitoring report form (version 02.0, /21/)” and “Clean development mechanism project standard (version 01.0, /30/)”, the MR should include organizational structure, roles and responsibilities of personnel for the monitoring system. Organizational structure information was not reported in the MR Version 01, and the description of the roles and responsibilities of personnel was different with the registered monitoring plan. So **CL#2** was raised to request the PP to clarify in this respect. As per the PP’s response, the organizational structure information and the description of the roles and responsibilities of personnel are correctly reported in MR version 02 which are in compliance with the registered monitoring plan and verified results from the onsite inspection. **CL#2 was closed out.**

3.9 Data from External Sources

The baseline emission factor (EF_y) was determined ex-ante and fixed for the first crediting period as per the revised PDD Version 07. The value of the baseline emission factor used in the monitoring report is 0.880 tCO₂e/MWh. It complies with the calculated value of the baseline emission factor in the revised PDD Version 07.

4. Calculation of Emission Reductions

Parameter	Reported Value in MR V01		Verified Value in MR V02	
	Calendar year 2011 (28/05/2011- 27/12/2011)	Calendar year 2012 (28/12/2011- 27/05/2012)	Calendar year 2011 (28/05/2011- 27/12/2011)	Calendar year 2012 (28/12/2011- 27/05/2012)
EG _y	44800.435MWh	36905.391MWh	44800.435MWh	36905.391MWh
EF _y	0.880 tCO ₂ e/MWh		0.880 tCO ₂ e/MWh	

According to the applied methodology, the emission reduction (ER_y) is calculated as:

$ER_y = BE_y - PE_y - L_y$, while the project emission and leakage are zero according to the revised PDD and EF_y is ex-ante determined and is fixed for the first crediting period. So,

The emission reduction in 2011 is calculated as:

$$ER_y = BE_y = EG_y * EF_y = 44800.435 \text{MWh} * 0.880 \text{tCO}_2\text{e/MWh} = 39,424 \text{ tCO}_2\text{e}$$

The emission reduction in 2012 is calculated as:

$$ER_y = BE_y = EG_y * EF_y = 36905.391 \text{MWh} * 0.880 \text{tCO}_2\text{e/MWh} = 32,476 \text{ tCO}_2\text{e}$$

* The electricity and ERs on 28-31 Dec are included into the following year, which has been approved by GS registry on 13/09/2010 (/35/).

5. Recommendations for Changes in the Monitoring Plan

No recommendation for changes in the monitoring plan was made during this (5th) verification.

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. All members of the assessment team visited the site and undertook interviews, collected data, audited the implementation of procedures, checked calibration certificates and checked data, inter alia.

The results of the site visit 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.

Yes. Baseline emission factor, 0.880tCO₂e/MWh, was determined using external sources at validation stage. Baseline emission factor is ex-ante determined and fixed for the first crediting period, which is the key parameter for calculating the emission reduction.

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 GS 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 revised PDD and monitoring plan. The emission reduction was 84,130 tCO₂ for the period 28/05/2011 to 27/05/2012 as per the estimation made in the revised PDD. The actual emission reduction has been verified as 71,900 tCO₂ for the same period.

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 revised project design document has been observed.

7. Verification and Certification Statement

SGS United Kingdom Limited has been contracted by Datang Zhangzhou Wind Power Co., Ltd to perform the verification of the emission reductions reported for the GS/CDM project Fujian Zhangpu Liuaao 45MW Wind Power Project (UNFCCC Ref. No. 1318; GS Project ID GS375) in the period from 28/05/2011 to 27/05/2012.

The verification is based on the approved revised 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, VCS Board and CoP/MoP as well as all related Gold Standard Foundation guidance and decisions. 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 Monitoring Report Version 02 dated 08/01/2013.

The management of Datang Zhangzhou Wind Power Co., Ltd is responsible for the preparation, calculation and determination of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project Monitoring Report Version 02 dated 08/01/2013.

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 28/05/2011 to 27/05/2012 based on the reported emission reductions in the Monitoring Report Version 02 dated 08/01/2013 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 revised project design documents. Based on the information we have seen and evaluated, we confirm the following:

Project Title:	Fujian Zhangpu Liua0 45MW Wind Power Project	
UNFCCC Reference Number:	1318	
GS Registry Number:	GS375	
Approved Revised PDD Used for Verification:	PDD Version 07 dated 01/08/2012 approved by CDM EB on 07/01/2013	
Methodology Used for Verification:	ACM0002 Version 06 dated 19/05/2006	
Applicable Period:	28/05/2011 to 27/05/2012	
Total GHG Emission Reductions Verified:	71,900 tCO ₂ e	
	Calendar year 2011 (28/05/2011-27/12/2011)	Calendar year 2012 (28/12/2011-27/05/2012)
	39,424tCO ₂ e	32,476tCO ₂ e

Signed on behalf of the Verification Body by Authorized Signatory

Signature:



Name: Michael Wu

Date: 06/02/2013

Signature:



Name: Yuan Xue

Date: 06/02/2013

8. Document References

/1/ ACM0002 Version 06 dated 19/05/2006

/2/ GS Monitoring Report

MR Version	Date of Revision	Main changes reason for Revision in section F of MR
01	06/06/2012	MR sent to SGS by client
02	08/01/2013	CL#1: the information of the main meter was changed from original meter (SN: 02069159) to new meter (SN: 02068436) on 15/12/2011 and reported in section D.2; CL#2: Organizational structure information was reported and the description of the roles and responsibilities of personnel was compliance with the registered monitoring plan in section C.

/3/ ERs spreadsheet for this monitoring period, version 01 dated 06/06/2012, version 02 dated 08/01/2013

ER Version	Date of Revision	Main changes reason for Revision in section F of MR
01	06/06/2012	ER sent to SGS by client
02	08/01/2013	ER is revised voluntarily by PP according to the fifth periodic CDM verification issued by CDM EB on 07/01/2013

/4/ Revised PDD version 07 dated 01/08/2012 approved by CDM EB on 07/01/2013

/5/ Project information on the UNFCCC website PA1318:

<http://cdm.unfccc.int/Projects/DB/TUEV-SUED1188562976.71/view>

/6/ Validation report for Fujian Zhangpu Liuaio 45MW Wind Power Project dated 30/08/2007 Rev No. 2 Report No.948571

/7/ CDM Verification reports for 'Fujian Zhangpu Liuaio 45MW Wind Power Project':

MP:	DOE	Date	Version Number
1	SGS	20/06/2008	0
2	SGS	04/08/2009	0
3	SGS	11/10/2010	0
4	SGS	04/01/2012	0
5	SGS	29/08/2012	1

/8/ Monitoring Reports for 'Fujian Zhangpu Liuaio 45MW Wind Power Project':

MP	Version	Date
1	02	18/06/2008
2	02	25/06/2009
3	02	08/10/2010

4	03	07/08/2012
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/9/ Gold Standard Validation report for Fujian Zhangpu Liuaio 45MW Wind Power Project issued by TUV-SUD revision 1 dated 30/08/2007 report No. 948571

/10/ GS-CDM Verification reports for 'Fujian Zhangpu Liuaio 45MW Wind Power Project':

MP:	DOE	Date
1	SGS	22/10/2008
2	SGS	18/12/2009
3	SGS	22/03/2011
4	SGS	08/08/2012

/11/ Calibration reports of the main meter and backup meter covering the whole monitoring period

/12/ Accreditation Certificate of Fujian Provincial Electric Power Company Metrological Verification Center issued by Quality and Technology Supervision Bureau of Fujian Province ((Min)FaJi(2006) 270021)

/13/ Daily Reading Records (DRRs) of the wind farm covering the period from 28/05/2011 to 27/05/2012

/14/ Monthly Reading Records(MRRs) of the wind farm covering the period from 28/05/2011 to 27/05/2012

/15/ Logbooks of the wind farm covering the period from 28/05/2011 to 27/05/2012

/16/ Sales receipts of electricity exported to the grid by the wind farm covering the period 28/05/2011 to 27/05/2012

/17/ Sales receipts of electricity imported from the grid by the wind farm covering the period 28/05/2011 to 27/05/2012

/18/ Power Purchase Agreement signed between the Grid Company and the wind farm company signed in 2008

/19/ CDM manual in May 2010

/20/ Clean Development Mechanism Validation and Verification Standard version 03.0 dated 23/11/2012

/21/ Guidelines for completing the monitoring report form, version 02.0, dated 02/03/2012

/22/ Staffs Training Records and Qualification Certificates

/23/ Emergency plan

/24/ Statement about employment and salary payment, records of social welfare for employees of the project

/25/ The payable statement for 7 employees issued by Datang Zhangzhou Wind Power Co., Ltd

/26/ Service contract for road maintenance, flood control, typhoon prevention, reinforcement with Xiamen Fengsheng Trading Co., Ltd on 30/12/2009

- /27/ Noise monitoring report issued by Fujian Environmental Monitoring Center on 10/02/2010
- /28/ The Plant Protection Engineering Contract signed on 05/06/2011 between the project owner and Zhangpu Yongfu Flower Plantation
- /29/ Construction contract for replantation signed on 20/09/2008 between the Datang Zhangzhou Wind Power Co., Ltd and Zhangpu County Forestry Bureau
- /30/ Clean Development Mechanism Project Standard version 01.0 dated 25/11/2011
- /31/ Meter replacement record dated 15/12/2011
- /32/ Liua wind farm two venues (S1, S3, S5) secondary formation of Soil and Water Conservation prevention construction contract signed on 11/05/2012
- /33/ PDD GS Annex
- /34/ Rules preventing injury including:
Measures planned of anti-accident and labor protection and safety measures
Management standards of production safety responsibility system
- /35/ Confirm letter by Leon Wang from GS dated 13/09/2010 about including ERs on 28-31 Dec into next year vintage

9. Findings Overview

Findings Overview Summary

	CARs	CLs	FARs
Total Number raised	0	2	0

Date:	19/07/2012	Raised by:	Yuan Xue & Jennifer Yi		
Type:	CL	Number:	#1	Reference:	Section 2 in AU4
Lead Assessor Comment:				Date: 19/07/2012	
By means of on site visit and document review, the assessment team found that the main meter was changed from original meter (SN: 02069159) to new meter (SN: 02068436) on 15/12/2011. However, this information was not reported in MR version 01. Please clarify and take relevant action.					
Project Participant Response:				Date: 08/01/2013	
The original meter (Serial No. 02069159) with the accuracy of 0.2s was replaced to a new meter with the accuracy of 0.2s (Serial No. 02068436) on 15/12/2011, the relevant documents have been provided for verification, and this information was reported in MR version 02.					
Documentation Provided as Evidence by Project Participant:					
MR version 02 dated 08/01/2013					
Information Verified by Lead Assessor:					
MR version 02 dated 08/01/2013 Meter replacement record Calibration reports of original meter (SN: 02069159) dated 16/12/2010 and 08/11/2011, and Calibration report of new meter (SN: 02068436) dated 29/11/2011					
Reasoning for not Acceptance or Acceptance and Close Out:					
The meter replacement record indicates that the original main meter was replaced to the new one on 15/12/2011. Because the meter readings were regularly recorded during this monitoring period, the replacement of main meter has no impact on the monitoring system and the calculation of emission reductions. The calibration reports of original meter (SN: 02069159) and new meter (SN: 02068436) have been reviewed. The assessment team confirmed that the original and new main meter were calibrated according to the requirements of the monitoring plan in registered PDD and the calibration validity covered the whole monitoring period. Furthermore, through checking the MR Version 02, the assessment team confirmed that the main meter replacement information was added in the Section D.2, which was in compliance with the verified results. So the CL#1 was close out.					
Acceptance and Close out by Lead Assessor: Yuan Xue				Date: 14/01/2013	

Date:	19/07/2012		Raised by:	Yuan Xue & Jennifer Yi		
Type:	CL	Number:	#2	Reference:	Section 2 in AU4	
Lead Assessor Comment:				Date: 19/07/2012		
According to “Guidelines for completing the monitoring report form (version 02.0)” and “Clean development mechanism project standard (version 01.0)”, MR should include organizational structure, roles and responsibilities of personnel for the monitoring system. Organizational structure information was not reported in MR version 01, and the description of the roles and responsibilities of personnel was different with the registered monitoring plan. Please clarify and take relevant action.						
Project Participant Response:				Date: 08/01/2013		
A CDM group of three persons was established within the owner company to carry out the monitoring work. The organizational structure of the CDM group, roles and responsibilities of personnel for the monitoring system were reported in MR version 02.						
Documentation Provided as Evidence by Project Participant:						

MR version 02 dated 08/01/2013	
Information Verified by Lead Assessor:	
MR version 02 dated 08/01/2013	
Reasoning for not Acceptance or Acceptance and Close Out:	
The organizational structure information and the description of the roles and responsibilities of personnel are correctly reported in MR version 02 which are in compliance with the registered monitoring plan and verified results from on site inspection. So CL#2 was close out.	
Acceptance and Close out by Lead Assessor: Yuan Xue	Date: 14/01/2013

10. Statement of Competence

Statement of Competence

Name:

Status

- Lead Assessor	x	- Expert	x
- Assessor	x	- Financial Expert	
- Local Assessor	China	- Technical Reviewer	

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)

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Technical Area(s): TA 1.2 Energy generation from renewable energy sources

2. Energy Distribution

Technical Area(s):

3. Energy Demand

Technical Area(s):

4. Manufacturing

Technical Area(s):

5. Chemical Industry

Technical Area(s):

6. Construction

Technical Area(s):

7. Transport

Technical Area(s):

8. Mining/Mineral Production

Technical Area(s):

9. Metal Production

Technical Area(s):

10. Fugitive Emissions from Fuels (solid, oil and gas)

Technical Area(s):

11. Fugitive Emissions from Production and

Consumption of Halocarbons and Sulphur Hexafluoride

Technical Area(s):

12. Solvent Use

Technical Area(s):

13. Waste Handling and Disposal

Technical Area(s):

14. Afforestation and Reforestation

Technical Area(s):

15. Agriculture

Technical Area(s):

Approved Member of Staff by:

Date:

Statement of Competence

Name: Jennifer Yi

Status

- Lead Assessor	x	- Expert	
- Assessor	x	- Financial Expert	
- Local Assessor	China	- Technical Reviewer	

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	
Technical Area(s):	
2. Energy Distribution	
Technical Area(s):	
3. Energy Demand	
Technical Area(s):	
4. Manufacturing	
Technical Area(s):	
5. Chemical Industry	
Technical Area(s):	
6. Construction	
Technical Area(s):	
7. Transport	
Technical Area(s):	
8. Mining/Mineral Production	
Technical Area(s):	
9. Metal Production	
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Technical Area(s):	
12. Solvent Use	
Technical Area(s):	
13. Waste Handling and Disposal	
Technical Area(s):	
14. Afforestation and Reforestation	
Technical Area(s):	
15. Agriculture	
Technical Area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 29/08/2012

Statement of Competence

Name: Michael
Wu

Status

- Lead Assessor	x	- Expert	x
- Assessor	x	- Financial Expert	
- Local Assessor	China	- Technical Reviewer	x

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	x
Technical Area(s): TA 1.2 Energy generation from renewable energy sources	
2. Energy Distribution	
Technical Area(s):	
3. Energy Demand	
Technical Area(s):	
4. Manufacturing	
Technical Area(s):	
5. Chemical Industry	
Technical Area(s):	
6. Construction	
Technical Area(s):	
7. Transport	
Technical Area(s):	
8. Mining/Mineral Production	
Technical Area(s):	
9. Metal Production	
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Technical Area(s):	
12. Solvent Use	
Technical Area(s):	
13. Waste Handling and Disposal	
Technical Area(s):	
14. Afforestation and Reforestation	
Technical Area(s):	
15. Agriculture	
Technical Area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 19/10/2012

11. Photographic Evidence

Unique reference number: 02077812
Name of equipment: M1 (backup meter)

Parameter: EG_y
Date: 11/07/2012



Unique reference number: 02068436
Name of equipment: M2 (main meter)

Parameter: EG_y
Date: 11/07/2012



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