



VERIFICATION REPORT HUANENG SHOUGUANG WIND POWER Co., LTD

VERIFICATION OF THE SHANDONG HUANENG SHOUGUANG 49.5MW WIND FARM PROJECT

REPORT No.BVC/CHINA-VR/8804/2013

REVISION No.01

BUREAU VERITAS CERTIFICATION

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VERIFICATION REPORT

Date of first issue: 04/03/2013	Organizational unit: Bureau Veritas Certification Holding SAS
Client: Huaneng Shouguang Wind Power Co., Ltd	Client ref.: Mr. Liu Ruixuan

Summary:

Bureau Veritas Certification has conducted the 3rd periodic verification of Shandong Huaneng Shouguang 49.5MW Wind Farm Project, CDM Registration Reference Number 3391, owned by Huaneng Shouguang Wind Power Co., Ltd, which is located in Shouguang county, Weifang city, Shandong Province, P.R.China, and applying the methodology ACM0002 Version 09, on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

The verification scope is defined as an independent and objective review and ex-post determination of the monitored GHG emission reductions, and consisted of the following three phases: i) desk review of the project design, the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in the validated and submitted revised project design documents. Installed equipments being essential for generating emission reduction run reliably and are calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions. The GHG emission reductions are calculated without material misstatements, and the emission reductions verified totalize 88,764 tons of CO₂e for the monitoring period.

Our opinion relates to the projects' GHG emissions and resulting GHG emission reductions reported and related to the valid and registered project baseline, submitted revised monitoring plan and its associated documents.

Reporting period:	25/12/2011 to 31/12/2012
Baseline emissions:	88,764 t CO ₂ equivalents.
Project emissions:	0 t CO ₂ equivalents.
Leakage emissions:	0 t CO ₂ equivalents.
Emission Reductions:	88,764 t CO ₂ equivalents.

Report No.: BVC-China/VR8804/2013	Subject Group: CDM
Project title: Shandong Huaneng Shouguang 49.5MW Wind Farm Project	
Work carried out by: Ms. Jasmine Tang Xuemei - Team Leader	
Internal Technical Review carried out by: Ms. Li Yiting	
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Indexing terms

Work approved by:

Mr. Matthieu Martini

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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
DRR	Daily Reading Record
FAR	Forward Action Request
GHG	Green House Gas(es)
MoV	Means of Verification
MP	Monitoring Plan
MR	Monitoring Report
MRR	Monthly Reading Record
PDD	Project Design Document
PP	Project Participant
PPA	Power Purchase Agreement
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
WTG	Wind Turbine Generator



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1. INTRODUCTION

Huaneng Shouguang Wind Power Co., Ltd has commissioned Bureau Veritas Certification to verify the emissions reductions of its CDM project Shandong Huaneng Shouguang 49.5MW Wind Farm Project (hereafter called “**the Project**”) in Shouguang county, Weifang city, Shandong Province, P.R.China.

This report summarizes the findings of the verification of the Project, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1. Objective

The objective of CDM verification is to conduct a thorough, independent assessment of the registered project activities.

In carrying out its verification work, the DOE shall ensure that the project activity complies with the requirements of paragraph 62 of the CDM modalities and procedures. In particular, this assessment shall:

- (a) Ensure that the project activity has been implemented and operated as per the registered PDD or any approved revised PDD, and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place;
- (b) Ensure that the monitoring report and other supporting documents provided are complete in accordance with latest applicable version of the completeness checklist for requests for issuance of CERs, verifiable, and in accordance with applicable CDM requirements;
- (c) Ensure that actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan or any revised approved monitoring plan, and the approved methodology including applicable tool(s);
- (d) Evaluate the data recorded and stored as per the monitoring methodology including applicable tool(s).

1.2. Scope

The verification scope is defined as an independent and objective review and ex-post determination of the monitored GHG emission reductions. The verification is based on the validated and registered project design document, the monitoring report, emission reduction calculation spreadsheet, and supporting documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

The verification is not meant to provide any consulting service towards the PPs. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.



1.3. GHG Project Description

The Project consists of 33 sets of WTGs of the IEC3 type three-blade rotor of SL1500/77 with a unit capacity of 1,500kW, providing a total installed capacity of 49.5MW. The annual expected net electricity supplied to North China Power Grid is 96,478.8MWh and the annual estimated emission reductions are 101,765tCO₂e.

Project title: Shandong Huaneng Shouguang 49.5MW Wind Farm Project
 UNFCCC ref number: 3391
 Registration Date: 19/07/2010
 Crediting Period: 19/07/2010 to 18/07/2017 (renewable)
 Monitoring Period: 25/12/2011 to 31/12/2012
 Project Participants: (Host Party: China): Huaneng Shouguang Wind Power Co., Ltd
 (Other Party: Japan): The Kansai Electric Power Co., Inc.
 Methodologies used: ACM0002 Version 09 Consolidated methodology for grid-connected electricity generation from renewable sources
 Location of the Project: in Shouguang county, Weifang city, Shandong Province, P.R.China
 Geo coordinates: The Project : Longitude: 118°56'59.636''~119°02'53.821'' E, Latitude: 37°13'44.198''~37°16'02.668'' N
 The substation : Longitude : 118°56'59.636''~118°57'11.300''E, Latitude 37°14'14.110''~37°14'20.603''N
 UNFCCC view page: <http://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1265792990.64/view>

[Post Registration Changes]

A request for approval of corrections and permanent change from the registered monitoring plan as described in the registered PDD is submitted along with this verification report as part of the request for issuance. Please refer to the revised PDD (version 05) /2/and the assessment opinion on the changes (report no. PRC/8804/2013) /4/.

1.4. Verification Team

The assessment team and internal technical reviewer team consist of the following personnel:

FUNCTION	NAME	TA 1.2	TASK PERFORMED*
Team Leader	Ms. Jasmine Tang Xuemei	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> DR <input checked="" type="checkbox"/> SV <input checked="" type="checkbox"/> RI <input type="checkbox"/> TR
Team Member	N/A	<input type="checkbox"/>	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI <input type="checkbox"/> TR
Technical Specialist	N/A	<input type="checkbox"/>	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI <input type="checkbox"/> TR
Internal Technical Reviewer (ITR)	Ms. Li Yiting	<input checked="" type="checkbox"/>	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI <input checked="" type="checkbox"/> TR
Specialist supporting ITR	N/A	<input type="checkbox"/>	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI <input type="checkbox"/> TR

*DR = Document Review; SV = Site Visit; RI = Report issuance; TR = Internal Technical Review



2. METHODOLOGY

The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a verification protocol was customized for the project, according to the version 03.0 of the Clean Development Mechanism Validation and Verification Standard, issued by CDM Executive Board at its 70th meeting on 23/11/2012 /10/. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from verifying the identified criteria. The verification protocol serves the following purposes:

- It organizes, details and clarifies the requirements a CDM project is expected to meet;
- It ensures a transparent verification process where the verifier will document how a particular requirement has been verified and the result of the verification.

The completed verification protocol is enclosed in Appendix A to this report.

2.1. Review of Documents

The assessment of the project documentation provided by the project participant is based upon both quantitative and qualitative information on emission reductions. Quantitative information comprises the reported numbers in the monitoring report (MR) version 02.1 dated 04/03/2013 /7/ and emission reduction calculation spreadsheet version 2.1 dated 04/03/2013 /8/. Qualitative information comprises information on internal management controls, calculation procedures, procedures for transfer of data, frequency of emissions reports, and review and internal audit of calculations.

The Monitoring Report Version 01 dated 18/01/2013 submitted by the project participant was also web hosted on the UNFCCC-CDM web site on 24/01/2013 and thus, was available in the public domain.

In addition to the monitoring documentation provided by the project participants, the DOE reviews:

- (a) The registered PDD including the monitoring plan, the submitted revised monitoring plan and changes from the registered PDD, and the corresponding validation opinion /1//2//4/;
- (b) The validation report /3/
- (c) Previous verification reports /5/;
- (d) The applied monitoring methodology /9/;
- (e) Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board /10/;
- (f) Other information and references relevant to the project activity's resulting emission reductions /11//12/.



2.2. Follow-up Interviews

On 26/02/2013, Bureau Veritas Certification performed a site visit and interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Huaneng Shouguang Wind Power Co., Ltd and Beijing Changjiang River International Holding were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Huaneng Shouguang Wind Power Co., Ltd (the Project Owner)	<ul style="list-style-type: none"> ➤ Project Design and implementation ➤ Technical equipment, calibration and operation ➤ Monitoring Plan and management procedures ➤ Monitoring data ➤ Data uncertainty and residual risks (QA/QC) ➤ GHG Calculation ➤ Environmental Impacts ➤ Compliance with National Laws and Regulations
Beijing Changjiang River International Holding (the consultant)	<ul style="list-style-type: none"> ➤ Monitoring Plan ➤ Monitored data and Monitoring Report ➤ GHG Calculations

2.3. Resolution of Clarification, Corrective and Forward Action Requests

The objective of this phase of the verification is to resolve issues related to the monitoring, implementation and operations of the registered project activity that could impair the capacity of the registered project activity to achieve emission reductions or influence the monitoring and reporting of emission reductions prior to Bureau Veritas Certification's positive conclusion on the GHG emission reduction calculation.

Findings established during the verification can either be seen as a non-fulfillment of criteria ensuring the proper implementation of a project or where a risk to deliver high quality emission reductions is identified.

A Corrective Action Request (CAR) is raised, if one of the following situations occurs:

- (a) Non-compliance with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- (b) Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;
- (c) Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;



(d) Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

A Clarification Request (CL) is raised, if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

A Forward Action Request (FAR) is raised, for actions if the monitoring and reporting require attention and/or adjustment for the next verification period.

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol in Appendix A.

2.4. Internal Technical Review

The verification report underwent an Internal Technical Review (ITR) before requesting issuance of CERs for the project activity.

The ITR is an independent process performed to examine thoroughly that the process of verification has been carried out in conformance with the requirements of the verification scheme as well as internal Bureau Veritas Certification procedures.

The Team Leader provides a copy of the verification report to the reviewer, including any necessary verification documentation. The reviewer reviews the submitted documentation for conformance with the verification scheme. This will be a comprehensive review of all documentation generated during the verification process.

When performing an Internal Technical Review, the reviewer ensures that:

- The verification activity has been performed by the team by exercising utmost diligence and complete adherence to the CDM rules and requirements.
- The review encompasses all aspects related to the project which includes project design, baseline, additionality, monitoring plans and emission reduction calculations, internal quality assurance systems of the project participant as well as the project activity, review of the stakeholder comments and responses, closure of CARs, CLs and FARs during the verification exercise, review of sample documents.

The reviewer may raise Clarification Requests to the verification team and discusses these matters with Team Leader.

After the agreement of the responses on the Clarification Requests from the verification team as well as the PP(s), the finalized verification report is accepted for further processing such as uploading via the UNFCCC interface.

3. VERIFICATION CONCLUSIONS

In the following sections, the conclusions of the verification are stated.

The findings from the desk review of the original monitoring documents and the findings from interviews during the follow up visit are described in the Verification Protocol in Appendix A.



The Clarification, Corrective and Forward Action Requests are stated, where applicable, in the following sections and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in 1 CAR and 5CLs.

The CARs, CLs and FARs were closed based on adequate responses from the Project Participant(s) which meet the applicable requirements. They have been reassessed before their formal acceptance and closure.

The number between brackets at the end of each section corresponds to the VVS paragraph.

3.1. Remaining issues from validation or previous verification (213)

All CARs and CLs raised were successfully closed during the validation stage and previous verification of the Project, no remaining issues were left.

3.2. Compliance of the project implementation with the registered project design document (228)

Bureau Veritas Certification has performed a site visit and found that the Project has been put into operation and the electricity generated is supplied to Shouguang Power Grid (SGPG), and then to North China Power Grid (NCPG) according to the signed Power Purchase Agreement (PPA) /15/. 33 sets of WTGs of the IEC3 type three-blade rotor of SL1500/77 with a unit capacity of 1,500kW, manufactured by Sinovel Wind Group Co., Ltd, providing a total installed capacity of 49.5MW has been in operation during the monitoring period.

Changes to the project design in the registered project activity have occurred and identified during this verification. It is determined that the changes do not require prior approval by the Board in accordance with appendix 1 of Project standard. A request for approval of changes is submitted along with this verification report as part of the request for issuance. Please refer to the revised PDD (version 05) /2/ and the assessment opinion on the changes (report no. PRC/8804/2013)/4/. The implementation and operation of the project activity have been conducted in accordance with the description contained in the submitted revised PDD.

According to Construction contract /17/, the Project started construction on 15/04/2008. And according to Implementation log of the Project /17/, The Project put full operation on 16/12/2008 /17/. During this monitoring period, there was an overhaul on the three days of 11/07/2012, 12/07/2012 and 13/07/2012, thus caused the shutdown of the equipment and without any generation./17/

[Power System] /13/

As shown in the diagram of the power system connection /13/ and described in monitoring report, the power generated by the wind turbines was delivered to the onsite 110kV Step-up Substation via the three 35kV lines, and then exported to Fengtai Transformer Substation via the 110kV main line, which connected to North China Power Grid.

When the Project fails to generate power or under maintenance, the Project will import electricity from the grid via the 110kV main line.

**[Metering System] /13/**

Two electricity meters were installed, of which:

The main meter (M1) was installed at the Fengtai Substation which is operated by grid company and the backup meter (M2) was installed at the output of onsite 35kV/110kV Step-up Substation which is operated by the PP. Both of them can measure the bi-directional electricity flows including exported to and imported from the grid via 110kV line.

Both above meters have been properly installed, maintained according to relevant standards.

[Management and Operation]

The PP has operated the Project as per the submitted revised PDD. The monitoring organization has been set up and all monitoring staffs have been trained as per the CDM Monitoring & Management Manual /22//23/. CDM Monitoring & Management Manual and CDM monitoring internal training records have been provided and verified by Bureau Veritas Certification. The readings of the main meter M1 are recorded by the PP and the grid company on a monthly basis. The grid company issues the sales receipts to the PP to confirm the electricity exported to the grid every month and electricity imported from the grid each three months during this monitoring period. Bureau Veritas Certification confirms that all the documents required by the monitoring plan have been stored. Bureau Veritas Certification has verified the documents and found the management and operations have been conducted by the PP in accordance with the submitted revised PDD.



Corresponding to the paragraph 228 of VVS version 03.0, Bureau Veritas Certification can confirm that:

- The implementation of the Project is consistent with the submitted revised PDD.
- The Project is operated as per the submitted revised PDD by the PP.

3.3. Compliance of the monitoring plan with the monitoring methodology including applicable tool(s) (232)

Bureau Veritas Certification has verified the monitoring plan, including the data and parameters required to be monitored, measurement procedures, monitoring frequency and QC/QA procedures as described in the submitted revised PDD.



Corresponding to the paragraph 232 of VVS version 03.0, Bureau Veritas Certification can confirm that the monitoring plan is in accordance with the approved methodology including applicable tool(s) applied by the Project.

3.4. Compliance of monitoring activities with the monitoring plan (235-236)

Permanent changes to the monitoring plan as described in the registered PDD have occurred and identified during this verification. It is determined that the changes do not require prior approval by the Board in accordance with appendix 1 of Project standard. A request for



approval of changes is submitted along with this verification report as part of the request for issuance. Please refer to the submitted revised PDD (version 05) /2/ and the assessment opinion on the changes (report no. PRC/8804/2013) /4/.

Monitoring has been carried out in accordance with the monitoring plan contained in the submitted revised PDD.

[Parameters and information flow]

The parameters required by the monitoring plan and how Bureau Veritas Certification has verified the information flow (from data generation, aggregation, to recording, calculation and reporting) for these parameters including the values in the monitoring report are described below:

Parameters monitored:

- (1) **EG_{out,y}** Electricity supplied to the SGPG within NCPG by the project.
- (2) **EG_{in,y}** Electricity consumed from the grid by the project through the main line

As the parameter EG_y represents net electricity supplied to the grid, electricity imported from the grid via the 110kV main line (EG_{in,y}) is subtracted from the electricity exported to the grid by the Project (EG_{out,y}) to obtain net electricity supplied to the grid (EG_y).

As described above, two meters have been installed in accordance with the submitted revised PDD. Bureau Veritas Certification has on-site checked the location of the meters against the diagram of power system connection /13/ of the Project and found that they are consistent. The calculated net electricity supplied to the grid by the Project is summed over the monitoring period.

The monthly readings records (MRR) of the main meter M1 are based on consistent measurement and monthly recorded by the PP and grid company /18/. The readings of the meter are measured continuously, and frozen on monthly basis by the grid company. 24:00 o'clock on cut-off date of every month and the end of this monitoring period 24:00 o'clock on 31/12/2012 are the cut-off time to calculate the monthly net electricity supplied to the grid by the Project. The cut-off date is usually determined by the availability of the Grid Company, and once the cut-off date is chosen, the PP is informed in advance. The different cut-off dates in each month have no impact on the emission reductions claimed for the monitoring period. Bureau Veritas Certification has verified the values provided in the monitoring report /7/ against the MRR /18/ and the sales receipts /19/ and found the values are consistent with the evidences.

Parameters determined ex-ante:

- (1) EF_y, emission factor of the grid

The emission factor of the 1st crediting period of the Project has been determined ex-ante in the registered PDD. The emission factor 1.0548 tCO₂e/MWh used in the monitoring report has been verified against the PDD and found them to be consistent.



✌ Corresponding to the paragraph 235 and 236 of VVS version 03.0, Bureau Veritas Certification can confirm that:

- The monitoring has been carried out in accordance with the monitoring plan contained in the submitted revised PDD.
- All parameters required by the monitoring plan have been sufficiently monitored and correctly listed. The monitored data for required parameters have been verified by checking the whole information flow.

3.5. Compliance with the calibration frequency requirements for measuring instruments (243)

The submitted revised monitoring plan requires that the electricity meters shall be calibrated annually and any error resulting from the electricity meters shall not exceed 0.5% of full-scale rating.

During this monitoring period, the installed measuring instruments have been operating well and were duly calibrated. The calibration records are shown in Table 2 below.

Table 2 The calibration records of the meters

Meter ID	Serial number	Accuracy	Calibration date	Validity	Calibration entity
M1	200708080200 43	0.5S	04/06/2011; 30/05/2012	Yes	A
M2	091001702200 42	0.5S	04/06/2011; 30/05/2012	Yes	A

Entity A: Weifang Power Company Meter Measuring Centre (Lu)FaJi(2009)D008 and (Lu)FaJi(2012)D008 with the valid period from 01/01/2009 to 31/12/2011 and 17/02/2012 to 16/02/2015 respectively /21/

[Instrument accuracy]

Bureau Veritas Certification has verified the calibration records and the accreditation certificates of the calibration entity. All the meters meet the rated accuracy level as described in the monitoring plan and are in compliance with the industry standard *Technical Administrative Code of Electric Energy Metering (DL/T 448-2000)* /11/.

[Calibration frequency]

The calibration frequency fulfills the requirement as described in the monitoring plan and is in compliance with the national standard *Verification Regulation of Electrical Energy Meter with Electronics (JJG 596-1999)* /12/.

✌ Corresponding to the paragraph 243 of VVS version 03.0, Bureau Veritas Certification can confirm that:

- The calibration is conducted at the frequency as specified by the methodology and the monitoring plan contained in the submitted revised PDD.



3.6. Assessment of data and calculation of emission reductions (246)

A complete set of data for the specified monitoring period is available.

The critical parameter used for the determination of the Emission Reductions is EG_y . The data pertaining to the above parameter are maintained in the identified records. All the data are in compliance with that stated in the Monitoring Report version 02.1.

As per the methodology ACM0002 Version 09 and the submitted revised PDD, the emission reductions for the Project are calculated as the baseline emissions minus the project emissions and leakage. Hence the emission reduction is determined by the following formula:

$$ER_y = BE_y - PE_y - L_y$$

Where,

ER_y : Emission reductions

BE_y : Baseline emissions

PE_y : Project emissions

L_y : Emissions due to leakage

[Baseline emissions]

The baseline emissions are the EF_y (baseline emission factor) times the EG_y (Net electricity supplied to the grid by the Project). Therefore,

$$BE_y = EF_y * EG_y$$

EF_y : GHG emission factor of the North China Power Grid, calculated ex-ante in the registered PDD as 1.0548 tCO₂e/MWh

EG_y : Net electricity supplied to the grid by the Project

The EG_y can be calculated as:

$$EG_y = EG_{out,y} - EG_{in,y}$$

where

$EG_{out,y}$ Electricity supplied to the SGPG within NCPG by the project.

$EG_{in,y}$ Electricity consumed from the grid by the project through the main line.

Bureau Veritas Certification has cross-checked the values from the meter reading records /18/ with the sales receipt /19/ for the period from 25/12/2011 to 31/12/2012, and found they are totally consistent. The verified values are shown in the following Table 3 and Table 4.



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Table 3 The verified $EG_{out,y}$ (MWh)

Period	Meter reading records	Sales Receipt	Verified EG_{out}
	A1	B1	C1=min(A1,B1)
25/12/2011-19/01/2012	3,736.48	3,736.48	3,736.48
20/01/2012-23/02/2012	8,402.24	8,402.24	8,402.24
24/02/2012-24/03/2012	8,569.44	8,569.44	8,569.44
25/03/2012-23/04/2012	11,973.28	11,973.28	11,973.28
24/04/2012-24/05/2012	8,264.96	8,264.96	8,264.96
25/05/2012-23/06/2012	5,302.88	5,302.88	5,302.88
24/06/2012-23/07/2012	4,468.64	4,468.64	4,468.64
24/07/2012-24/08/2012	5,146.24	5,146.24	5,146.24
25/08/2012-23/09/2012	4,352.48	4,352.48	4,352.48
24/09/2012-24/10/2012	5,503.52	5,503.52	5,503.52
25/10/2012-23/11/2012	7,937.60	7,937.60	7,937.60
24/11/2012-18/12/2012	7,828.48	7,828.48	7,828.48
19/12/2012-31/12/2012	2,974.40	2,974.40	2,974.40
Total	-	-	84,460.64

Table 4 The verified $EG_{in,y}$ (MWh)

Period	Meter reading records	Sales Receipt	Verified $EG_{in,y}$
	A2	B2	C2=max(A2,B2)
25/12/2011-19/01/2012	49.28	123.20	-
20/01/2012-23/02/2012	52.80		
24/02/2012-24/03/2012	21.12		
Subtotal	123.20	123.20	123.20
25/03/2012-23/04/2012	10.56	49.28	-
24/04/2012-24/05/2012	19.36		
25/05/2012-23/06/2012	19.36		
Subtotal	49.28	49.28	49.28
24/06/2012-23/07/2012	17.60	70.40	-
24/07/2012-24/08/2012	29.92		
25/08/2012-23/09/2012	22.88		
Subtotal	70.40	70.40	70.40
24/09/2012-24/10/2012	19.36	52.80	-
25/10/2012-23/11/2012	19.36		
24/11/2012-18/12/2012	14.08		
Subtotal	52.80	52.80	52.80



Period	Meter reading records	Sales Receipt	Verified EG _{in,y}
	A2	B2	C2=max(A2,B2)
19/12/2012-31/12/2012	12.32	12.32	12.32
Total	-	-	308.00

$$EG_y = EG_{out,y} - EG_{in,y}$$

$$= 84,460.64 - 308.00 = 84,152.64 \text{ MWh}$$

The baseline emissions of the Project are calculated as:

$$BE_y = EF_y * EG_y = 1.0548 \text{ tCO}_2\text{e/MWh} * 84,152.64 \text{ MWh} = 88,764 \text{ tCO}_2\text{e}$$

[Project emissions]

The Project is a newly built wind power project, thus according to ACM0002 Version 09 the project emissions are zero.

[Leakage emissions]

Leakage is not considered according to ACM0002 Version 09.

[Emission reductions]

The emission reductions during the monitoring period from 25/12/2011 to 31/12/2012 are calculated as:

$$ER_y = BE_y - PE_y - L_y = 88,764 - 0 - 0 = 88,764 \text{ tCO}_2\text{e}$$

[Comparison of ERs]

The annual estimated emission reductions are 101,765 tCO₂e as per the registered PDD, while the estimated emission reductions during this monitoring period (25/12/2011 to 31/12/2012, 373 days) are 103,995 tCO₂e. The actual emission reductions are less than the estimated value in the monitoring period.



Corresponding to the paragraph 246 of VVS version 03.0, Bureau Veritas Certification can confirm that:

- Data used for the determination of the emission reductions are available and monitored in accordance with the monitoring plan contained in the submitted revised PDD.
- Information and data provided in the monitoring report have been cross-checked with other sources such as plant logbooks, inventories, purchase records, laboratory analysis.
- Appropriate methods and formulae for calculating baseline emissions, project emissions and leakage have been followed.
- Assumptions, emission factors and default values that were applied in the calculations have been justified.



4. VERIFICATION OPINION

Bureau Veritas Certification has performed the 3rd periodic verification of Shandong Huaneng Shouguang 49.5MW Wind Farm Project, CDM Registration Reference Number 3391, which is located in Shouguang county, Weifang city, Shandong Province, P.R.China, and applying the methodology ACM0002 Version 09. The verification was performed based on the requirements set by the CDM and relevant guidance provided by CMP and the CDM Executive Board.

The verification consisted of the following three phases: i) desk review of the project design, the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion.

The management of Huaneng Shouguang Wind Power Co., Ltd is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions of the project on the basis set out within the monitoring plan contained in the submitted revised PDD. The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of GHG emission reductions from the project, is the responsibility of the management of the project.

Bureau Veritas Certification has verified the project Monitoring Report version 02.1 dated 04/03/2013 for the reporting period as indicated below. Bureau Veritas Certification confirms that the project is implemented as described in the validated and submitted revised project design documents. Installed equipments being essential for generating emission reductions run reliably and are calibrated appropriately. The monitoring system is in place and the Project is generating GHG emission reductions as a CDM project.

Bureau Veritas Certification can confirm that the GHG emission reductions are calculated without material misstatements. Our opinion relates to the projects' GHG emissions and resulting GHG emission reductions reported and related to the validated and registered project baseline, submitted revised monitoring plan and its associated documents. Based on the evidence and information that are considered necessary to guarantee that GHG emission reductions are appropriately calculated, Bureau Veritas Certification confirms the following statement:

Reporting period:	25/12/2011 to 31/12/2012
Baseline emissions:	88,764 t CO ₂ equivalents
Project emissions:	0 t CO ₂ equivalents
Leakage emissions:	0 t CO ₂ equivalents
Emission Reductions:	88,764 t CO ₂ equivalents

Ms. Li Yiting
Internal Technical Reviewer
06/03/2013

Ms. Jasmine Tang Xuemei
Team Leader
06/03/2013



5. REFERENCES

Documents reviewed:

- /1/ Registered PDD version 04 dated 08/01/2010, UNFCCC ref no.3391
- /2/ Revised PDD version 05 dated 04/03/2013
- /3/ Validation Report version 1.4, dated 10/02/2010
- /4/ Validation opinion version 01 on post registration change of PDD dated 05/03/2012
- /5/ Verification Reports of the previous periodic verifications
- /6/ Monitoring Report Version 01 dated 18/01/2013
- /7/ Monitoring Report version 02.1, dated 04/03/2013
- /8/ ER Calculation Spreadsheet version 2.1, dated 04/03/2013
- /9/ ACM0002 Version 09
- /10/Validation and Verification Standard Version 03.0 dated 23/11/2012
- /11/Technical Administrative Code of Electric Energy Metering (DL/T 448-2000)
- /12/Verification Regulation of Electrical Energy Meter with Electronics (JJG 596-1999)
- /13/Diagram of power connection system of the Project
- /14/Equipments purchase agreement
- /15/Signed Power Purchase Agreement (PPA) with grid company whose validity periods cover this monitoring period
- /16/Construction contract
- /17/Implementation log of the Project
- /18/Meter Reading Records of the Project
- /19/Sales receipt issued by the Grid Company
- /20/Calibration records
- /21/Certificate of metrological authorization to Weifang Power Company Meter Measuring Centre, whose authorized certificates are No. (Lu)FaJi(2009)D008 and (Lu)FaJi(2012)D008 with the valid period 01/01/2009 to 31/12/2011 and 17/02/2012 to 16/02/2015 respectively
- /22/CDM Monitoring & Management Manual
- /23/Internal Training Records and Qualification Certificate of Operation Staff

Persons interviewed:

VERIFICATION REPORT



Huaneng Shouguang Wind Power Co., Ltd
Mr. Yang Liang
Mr. Zhao Ziyue
Mr. Zhang Wei
Beijing Changjiang River International Holding
Ms. Zhangping
Ms. Tu Li



6. CURRICULA VITAE OF THE DOE'S VERIFICATION TEAM MEMBERS

Ms. Jasmine Tang Xuemei	Bureau Veritas Certification, China	<p>Team Leader, Climate Change Lead Verifier</p> <p>She holds a Master Degree in Environmental Engineering. Before joining BV in 2008, she gained two years of CDM technical working experience in P.R China. She obtained the certificate of CDM Verifier, Lead Auditor for ISO 14001. She has completed the course assessment for the ISO 14064:2006.</p>
Ms. Li Yiting	Bureau Veritas Certification, China	<p>Technical Reviewer, Climate Change Lead Verifier.</p> <p>She holds a Master Degree in Environmental Science. Before joining BV in 2009, she gained two and a half years of CDM technical working experience in P.R China. She obtained the certificate of CDM Lead Verifier, Lead Auditor for ISO 14001 and ISO 14064.</p>



APPENDIX A: CDM PROJECT VERIFICATION PROTOCOL

Table 1 Verification requirements based on VVS version 03.0 (EB 70 Annex 3), PS version 02.1 (EB 70 Annex 2), PCP version 03.1 (EB 70 Annex 4), and Guidelines for completing the Monitoring Report Form version 03.1 (EB 70 Annex 11)

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Part I Cover Page					
(a) Is the title of the project activity provided?	MR	-	Yes. Project title: Shandong Huaneng Shouguang 49.5MW Wind Farm Project	OK	OK
(b) Is the reference number of the project activity provided?	MR	-	Yes. Reference number: 3391	OK	OK
(c) Is the version number of the monitoring report indicated?	MR	-	Yes. Version number of the monitoring report: 02.1	OK	OK
(d) Is the completion date of the monitoring report provided in DD/MM/YYYY format?	MR	-	Yes. Completion date of the monitoring report: 04/03/2013	OK	OK
(e) Is the registration date of the project activity provided in DD/MM/YYYY format?	MR	-	Yes. Registration date of the project activity: 19/07/2010	OK	OK
(f) Are the monitoring period number and duration of this monitoring period (first and last days included in DD/MM/YYYY format) provided?	MR	-	Yes. Monitoring period number: 3rd Duration of this monitoring period: 25/12/2011 to	OK	OK



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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			31/12/2012		
(g) Are project participants indicated?	MR	-	Yes. Huaneng Shouguang Wind Power Co., Ltd The Kansai Electric Power Co., Inc.	OK	OK
(h) Is the host party(ies) indicated?	MR	-	Yes. Host party: China	OK	OK
(i) Are the sectoral scope(s) and applied methodology(ies) indicated?	MR	-	Yes. Sectoral scope number 1: Energy industry – Renewable resources and approved methodology ACM0002	OK	OK
(j) Is the estimated amount of GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period in the registered PDD indicated?	MR	-	Yes. Estimated amount: 103,995 tCO ₂ e	OK	OK
(k) Are the actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period indicated?	MR	-	Yes. Actual ERs: 88,764 tCO ₂ e	OK	OK
(l) Are the actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period up to 31 December 2012 indicated (if applicable)?	MR	-	N/A	OK	OK
(m) Are the actual GHG emission reductions or net anthropogenic GHG removals by sinks	MR	-	N/A	OK	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
achieved during the period from 1 January 2013 onwards indicated (if applicable)?					
Part II Monitoring Report					
A. Description of project activity					
A.1 Purpose and general description of project activity					
A.1.1 Is the description of the project activity to be presented in this section a brief summary of the detailed description given in the section B.1 Implementation status of the project activity?	MR	-	Yes. The description of the project activity is presented in this section a brief summary of the detailed description given in the section B.1	OK	OK
A.1.2 Does this description include:					
A.1.2.1 Purpose of the project activity and the measures taken for GHG emission reductions or net anthropogenic GHG removals by sinks?	MR	-	Yes. Purpose of the project activity: to generate renewable electricity using wind power resources	OK	OK
A.1.2.2 Brief description of the installed technology and equipments?	MR	-	Technology: Wind power generation Equipments: 33 sets of WTGs with rated capacity of 1.5 MW CL-1 Please indicate the manufacturer and type of wind turbines. The manufacturer of Sinovent Wind Group Co., Ltd and type of wind turbines (SL1500/77) have been added in	CL-1	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			the updated MR as required. CL-1 was hence closed.		
A.1.2.3 Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.)?	MR	-	<p>The Project started construction on 15/04/2008. The Project put full operation on 16/12/2008.</p> <p>CL-2 The started construction date indicated in the registered PDD is 15/04/2007, please clarify.</p> <p>15/04/2007 was a typo error in the table 2 of the registered PDD. Bureau Veritas Certification has checked the Construction Contract and confirmed that the construction activities began on 15/04/2008 rather than 15/04/2007. A correction of registered PDD has been submitted with this request for issuance to show the correct date of construction started, as per appendix 1 of PS, no prior approval is required. CL-2 was hence closed.</p>	CL-2	OK
A.1.2.4 Total GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period?	MR	-	<p>Yes.</p> <p>88,764 tCO₂e</p>	OK	OK
A.2 Location of project activity					
A.2.1 Is the information on the location of the project activity provided, including Host Party(ies), Region/State/Province, City/Town/Community, Physical/Geographical location etc.?	MR	-	<p>Yes.</p> <p>The Project is located in Shouguang county, Weifang city, Shandong Province, P.R.China.</p> <p>Longitude: 118°56'59.636''~119°02'53.821''E</p> <p>Latitude: 37°13'44.198''~37°16'02.668''N</p>	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			The geographical coordinate of substation at east longitude of 118°56'59.636''~118°57'11.300'' and north latitude of 37°14'14.110''~37°14'20.603''.		
A.3 Parties and project participant(s)					
A.3.1 Is the Party(ies) and project participant(s) involved in the project activity listed in the provided table?	MR	-	Yes.	OK	OK
A.4 Reference of applied methodology					
A.4.1 Is the exact reference (number, title, version) of the methodology(ies) indicated?	MR	-	Yes.	OK	OK
A.4.2 Is the exact reference (number, title, version) of any tools and other methodologies to which the applied methodology(ies) refers indicated?	MR	-	Yes.	OK	OK
A.5 Crediting period of project activity					
A.5.1 Are the type, start date and length of the crediting period corresponding to this monitoring period provided?	MR	-	Yes. 19/07/2010 to 18/07/2017 (renewable)	OK	OK
B. Implementation of project activity					
B.1 Description of implemented registered project activity					



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.1.1 Is the description of the installed technology, technical processes and equipments provided, include diagrams where appropriate?	MR PS	191(a)	<p>The description of installed technology, technical processes and equipments is provided.</p> <p>CL-3 It was mentioned in the MR that no overhaul happened during this monitoring period. However, it was found that an overhaul was happened in July 2012 during on site visit, please clarify the inconsistency.</p> <p>There were 3 days of equipment shutdown for overhaul from 11/07/2012 to 13/07/2012 due to the daily maintenance. Relevant information has been added in the section B1.1 of the updated MR. CL-3 was hence closed.</p> <p>CL-4 A diagram to show the technical process and equipments is required.</p> <p>The description of the technical process and equipment including diagram have been added in the updated MR. CL-4 was hence closed.</p>	CL-3 CL-4	OK
B.1.2 Is the information on the implementation and actual operation of the project activity, including relevant dates (e.g. construction, commissioning, continued operation periods, etc.) provided?	PS	191(b)	<p>Pending on CL-2</p> <p>Yes.</p> <p>The Project consists of one site.</p> <p>The Project started construction on 15/04/2008.</p> <p>The Project put full operation on 16/12/2008.</p>	Pending	OK
B.1.3 Is the description of: (i) the events or	PS	191(c)	Yes.	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
situations that occurred during the monitoring period that may impact the applicability of the methodology (ii) how the issues resulting from these events or situations have been addressed provided?			During the monitoring period, there were no events or situations which may impact the applicability of the methodology.		
B.1.4 Have the project participants addressed the FARs identified during validation or previous verification(s)?	VVS	213	No FARs were identified during validation or previous verifications.	OK	OK
B.1.5 Have the implementation and operation of the project activity been conducted in accordance with the description contained in the registered PDD?	VVS	226	Yes. The implementation and operation of the project activity "Shandong Huaneng Shouguang 49.5MW Wind Farm Project" have been conducted in accordance with the description contained in the registered PDD.	OK	OK
B.1.6 Are all physical features of the project activity in the registered PDD in place?	VVS	227	Yes. Bureau Veritas Certification has checked on-site and through documents review and confirm that all the physical features of the proposed CDM project activity proposed in the registered PDD are in place, including the 33 sets of WTGs of the IEC3 type three-blade rotor of SL1500/77 with a unit capacity of 1,500kW, the grid connection, location, etc.	OK	OK
B.1.7 Have the project participants operated the project activity as per the registered PDD or any approved revised PDD?	VVS	227	Yes. The project participant Huaneng Shouguang Wind Power Co., Ltd operated the project activity as per the registered PDD.	OK	OK
B.1.8 Was an on-site visit conducted?	VVS	227	Yes.	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<p>The on-site visit of this verification has been conducted on 26/02/2013 by Jasmine Tang Xuemei, climate change lead verifier of Bureau Veritas Certification (China). The audit purpose and methodology were briefed in the opening meeting participated by the following persons.</p> <p>Huaneng Shouguang Wind Power Co., Ltd Mr. Yang Liang Mr. Zhao Ziyue Mr. Zhang Wei</p> <p>Beijing Changjiang River International Holding Ms. Zhangping Ms. Tu Li</p>		
B.1.9 If an on-site visit is not conducted, is the rationale of the decision justified?	VVS	227	N/A	OK	OK
B.2 Post registration changes					
B.2.1 Temporary deviations from registered monitoring plan or applied methodology					
B.2.1.1 Is it indicated whether any temporary deviations have been applied during this monitoring period?	MR	-	<p>Yes.</p> <p>No temporary deviations.</p>	OK	OK
B.2.1.2 Is a description of the deviation(s) in accordance with applicable provisions in the Project standard provided?	MR	-	N/A	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.2.1.3 Are the reasons for the deviation(s), how it deviates from the monitoring plan and/or applied methodology(ies), the duration for which the deviation(s) is(are) applicable and justification on the conservativeness of the approach included in the description?	MR	-	N/A	OK	OK
B.2.1.4 For deviation(s) that require prior approval by the Board, are the date of approval and reference number included in the description?	MR	-	N/A	OK	OK
B.2.2 Corrections					
B.2.2.1 Is it indicated whether any corrections to project information or parameters fixed at validation have been approved during this monitoring period or submitted with this monitoring report?	MR	-	Pending on CL-2 There was a typo error of construction started date in the registered PDD, and the actual construction started date is 15/04/2008 instead of 15/04/2007. A revised PDD is submitted with this request for issuance, which is not required prior approval as per appendix 1 of PS.	Pending	OK
B.2.2.2 In cases where the correction(s) and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, are the approval date and reference number provided? Otherwise, are the version number and the completion date of the	MR	-	N/A	OK	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
revised PDD provided?					
B.2.3 Permanent changes from registered monitoring plan or applied methodology					
B.2.3.1 Is it indicated whether any permanent changes from the registered monitoring plan or applied methodologies have been approved during this monitoring period or submitted with this monitoring report?	MR	-	<p>CAR-1 : As per registered monitoring plan, In Section B.7.1, it is indicated that "Source of data to be used" is "measured by a bidirectional meter M1" for both parameters of EGout,y and EGin,y, while "description of measurement methods and procedures to be applied" is "the readings of meter M2 will be monitored continuously and recorded monthly, and then crosschecked with the readings of meter M1 installed and owned by the grid company" and similar sentence can be found in Page 29 of Section B.7.2. It is not clear which meter is the main meter. A revised monitoring plan to reflect the actual monitoring practice is required to be submitted with this monitoring report.</p> <p>According to the actual monitoring practice, the M2 is just a backup meter, which is in function only when the main meter M1 is out of order. Therefore, a more accurate monitoring plan has been revised.</p> <p>A revised monitoring plan is submitted with this request for issuance, which is not required prior approval as per appendix 1 of PS. CAR-1 was hence closed.</p>	CAR-1	OK
B.2.3.2 In cases where the change(s) and the revised PDD are approved prior to the	MR	-	Pending on CAR-1	Pendi	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
submission of this monitoring report for request for issuance, are the approval date and reference number provided? Otherwise, are the version number and the completion date of the revised PDD provided?			N/A.	ng	
B.2.4 Changes to project design of registered project activity					
B.2.4.1 Is it indicated whether any changes to the project design of the project activity have been approved during this monitoring period or submitted with this monitoring report?	MR	-	Yes. No changes to project design of registered project activity	OK	OK
B.2.4.2 In cases where the change(s) and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, are the approval date and reference number provided? Otherwise, are the version number and the completion date of the revised PDD provided?	MR	-	N/A	OK	OK
B.2.5 Changes to start date of crediting period					
B.2.5.1 Is it indicated whether any changes to the start date of the crediting period have been approved during this monitoring period?	MR	-	Yes. No Changes to start date of crediting period	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.2.5.2 In cases where the changes and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, are the approval date and reference number provided?	MR	-	N/A	OK	OK
B.2.6 Types of changes specific to afforestation or reforestation project activity					
B.2.6.1 Is it indicated whether any changes specific to afforestation or reforestation project activities have been applied during this monitoring period based on applicable provisions in the Project standard that do not require prior approval by the Board?	MR	-	N/A. The Project is not an afforestation or reforestation project activity.	OK	OK
B.2.6.2 If changes were applied, are the version number and the completion date of the revised PDD provided?	MR	-	N/A	OK	OK
C. Description of monitoring system					
C.1 General requirements					
C.1.1 Have project participants described the monitoring system and provided line diagrams (graphical schemes) showing all relevant monitoring points?	MR PS	- 193	Yes.	OK	OK
C.1.2 Does this description where appropriate include data collection procedures	MR	-	Yes.	CL-5	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
(information flow including data generation, aggregation, recording, calculations and reporting), organizational structure, roles and responsibilities of personnel, and emergency procedures for the monitoring system?	PS	193	<p>The monitoring organization has been set up and in functions. All monitoring staffs have been trained and the training records have been provided and verified. The monitoring procedures are in place and function. All parameters indicated in the MP have been measured and recorded in the respective documents. The QA/QC procedures are in place and function.</p> <p>CL-5 The sales receipt of electricity purchased from the grid during this monitoring period was issued every three months but not each month, please revise relevant description.</p> <p>Relevant description regarding to quarterly sales receipts on the electricity purchased from the grid has been updated in the MR, which is consistent with the monitoring plan. CL-5 was hence closed.</p>		
C.1.3 Is the monitoring plan of the project activity in accordance with the applied methodology including applicable tool(s)?	VVS	229	<p>Pending on CAR-1</p> <p>The monitoring plan in accordance with the methodology ACM0002 Version 09 including applicable tools has been applied by the CDM project activity.</p>	Pending	OK
C.1.4 For monitoring aspects that are not specified in the methodology, particularly in the case of small-scale methodologies (e.g. additional monitoring parameters, monitoring frequency and calibration frequency), are there any issues which may enhance the level of accuracy and	VVS	231	No.	OK	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
completeness of the monitoring plan and should bring to the attention of the Board?					
C.1.5 Has the monitoring plan been properly implemented and followed by the project participants?	VVS	234(a)	Pending on CAR-1. Yes. The monitoring plan has been properly implemented and followed by the project participant	Pending	OK
C.1.6 Have all parameters stated in the monitoring plan and relevant Board decisions been monitored and updated as applicable, including:	VVS	234(b)			
C.1.6.1 Project emission parameters?	VVS	234(b)	The project emissions of the project do not need to be considered according to the ACM0002 Version 09.	OK	OK
C.1.6.2 Baseline emission parameters?	VVS	234(b)	<p>The monitoring of the following parameter related to the GHG emissions reductions in the project activity have been implemented in accordance with the monitoring plan contained in the submitted revised PDD:</p> <p>The Net electricity supplied to the grid by the Project (EG_y) is used for baseline emission calculation.</p> <p>EG_y will be calculated as follows:</p> $EG_y = EG_{out,y} - EG_{in,y}$ <p>Where:</p> <p>$EG_{out,y}$ Electricity supplied to SGPG within NCPG by the project.</p> <p>$EG_{in,y}$ Electricity purchased from SGPG within NCPG by the project.</p>	OK	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<p>The meters M1 and M2, and have been properly installed, maintained, calibrated and recorded according to relevant standard.</p> <p>The $EG_{out,y}$ and $EG_{in,y}$ are used for baseline emission calculation. The EG_y is calculated with the above parameters.</p>		
C.1.6.3 Leakage parameters?	VVS	234(b)	Leakage L_y is not considered according to ACM0002 Version 09.	OK	OK
C.1.6.4 Management and operational system: the responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan?	VVS	234(b)	<p>Yes.</p> <p>The management and operational system including the responsibilities and authorities for monitoring and reporting, specified in the Section C of the monitoring report, are in accordance with the responsibilities and authorities stated in the monitoring plan.</p>	OK	OK
D. Data and parameters					
D.1 Data and parameters fixed ex ante or at renewal of crediting period					
D.1.1 For "Purpose of data", is one of the following options chose: (a) Calculation of baseline emissions or baseline net GHG removals by sinks; (b) Calculation of project emissions or actual net GHG removals by sinks; (c) Calculation of leakage?	MR	-	Yes.	OK	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
D.1.2 For "Value(s) applied", if applicable, is one table used to report multiple values referring to the same data and parameter? If necessary, are reference(s) to electronic spreadsheets used?	MR	-	N/A. The fixed parameter does not refer to multiple values.	OK	OK
D.1.3 Is the source of data provide and/or identified?	PS	195(d)	Yes.	OK	OK
D.1.4 Is information about appropriate emission factors, IPCC default values and any other reference values that have been used in the calculation of GHG emission reductions or net GHG removals provided?	PS	195(g)	Yes.	OK	OK
D.2 Data and parameters monitored					
D.2.1 For "Purpose of data", is one of the following options chose: (a) Calculation of baseline emissions or baseline net GHG removals by sinks; (b) Calculation of project emissions or actual net GHG removals by sinks; (c) Calculation of leakage?	MR	-	Yes.	OK	OK
D.2.2 For "Value(s) of monitored parameter", if applicable, is one table used to report multiple values referring to the same data and parameter? If necessary, are reference(s) to electronic spreadsheets used?	MR	-	Monitored values are listed in Section E.1.	OK	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
D.2.3 Are the values of the monitored parameter for the purpose of calculating GHG emission reductions or net GHG removals provided? Where data are measured continuously, are they presented using an appropriate time interval? For default values (such as an IPCC value), where it is ex post confirmed, is the most recent value applied?	PS	195(a)	Yes. Electricity data are continuously measured and monthly recorded.	OK	OK
D.2.4 Is the equipment used to monitor each parameter described, including details on accuracy class, and calibration information (frequency, date of calibration and validity), if applicable as per monitoring plan?	PS	195(b)	Yes. Equipment used to monitor each parameter are described, including details on accuracy class, and calibration information (frequency, date of calibration and validity).	OK	OK
D.2.5 Is the equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan, the applied methodology, the Board guidance, local/national standards, or as per the manufacturer's specification?	VVS	234(c)	The equipments, including the main meter and the backup meter, used for monitoring are in compliance with the calibration frequency required by the monitoring plan, and is controlled and calibrated in accordance with the monitoring plan, the applied methodology, the Board guidance, local/national standards, or as per the manufacturer's specification.	OK	OK
D.2.6 Is the calibration of those measuring equipments that have an impact on the claimed emission reductions conducted by the project participants at a frequency specified in the applied monitoring methodology and/or the monitoring plan?	VVS	237	Yes.	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
D.2.7 If, during verification of a certain monitoring period, the calibration has been delayed and the calibration has been implemented after the monitoring period in consideration (i.e. the results of delayed calibration are available), is the following conservative approach adopted in the calculation of emission reductions:	VVS	238			
D.2.7.1 Applying the maximum permissible error of the instrument to the measured values taken during the period between the scheduled date of calibration and the actual date of calibration, if the results of the delayed calibration do not show any errors in the measuring equipment, or if the error is smaller than the maximum permissible error?	VVS	238(a)	N/A	OK	OK
D.2.7.2 Applying the error identified in the delayed calibration test, if the error is beyond the maximum permissible error of the measuring equipment?	VVS	238(b)	N/A	OK	OK
D.2.8 Has the error has been applied:	VVS	239			
D.2.8.1 In a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed emission reductions?	VVS	239(a)	N/A	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
D.2.8.2 For all measured values taken during the period between the scheduled date of calibration and the actual date of calibration.	VVS	239(b)	N/A	OK	OK
D.2.9 In cases where the results of the delayed calibration are not available, or the calibration has not been conducted at the time of verification, prior to finalizing verification, were the project participants requested to conduct the required calibration have the project participants calculated the emission reductions conservatively using the approach mentioned in item "D.2.7" above?	VVS	240	N/A	OK	OK
D.2.10 In cases where it is not possible for the project participants to conduct the calibration at a frequency specified by either the applied methodology, guidance provided by the Board, and/or the registered monitoring plan due to reasons beyond the control of PPs, are the requirements for post registration changes, in section 9.5 of the VVS, followed?	VVS	241	N/A	OK	OK
D.2.11 In cases where neither the monitoring methodology nor the monitoring plan specify any requirements for calibration frequency for measuring equipments, are the equipments calibrated either in	VVS	242	N/A The monitoring plan specifies calibration frequency.	OK	OK



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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
accordance with the specifications of the local/national standards, or as per the manufacturer's specification? If neither local/national standards nor the manufacturer's specification are available, were international standards used?					
D.2.12 Is it described how the parameters are measured/calculated and the measurement and recording frequency?	PS	195(c)	Yes.	OK	OK
D.2.13 Are monitoring results consistently recorded as per approved frequency?	VVS	234(d)	Yes. Monthly recorded.	OK	OK
D.2.14 Is the source of data (e.g. logbooks, daily records, surveys, etc.) provide and/or identified?	PS	195(d)	Yes. Source of data is described.	OK	OK
D.2.15 Where relevant is the calculation method of the parameter provided?	PS	195(e)	Yes.	OK	OK
D.2.16 Are the QA/QC procedures applied described (if applicable per monitoring plan)?	PS	195(f)	Yes. The QA/QC procedures have been documented in the Monitoring and Management Manual and have been applied in accordance with the monitoring plan.	OK	OK
D.2.17 Have quality assurance and quality control procedures been applied in accordance with the monitoring plan or the revised monitoring plan?	VVS	234(e)	Yes. The QA/QC procedures have been documented in the Monitoring and Management Manual and have been applied in accordance with the monitoring plan.	OK	OK
D.2.18 Is information about appropriate emission	PS	195(g)	Yes.	OK	OK



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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
factors, IPCC default values and any other reference values that have been used in the calculation of GHG emission reductions or net GHG removals provided?			Information about appropriate emission factors, IPCC default values or any other reference values that have been used in the calculation of GHG emission reductions or net GHG removals is provided in the section D.2 of the monitoring report.		
D.3 Implementation of sampling plan					
D.3.1 Is a description provided on how project participants implemented the sampling efforts and surveys for those data and parameters according to the sampling plan, Include:	MR	-	N/A. Sampling is unnecessary.	OK	OK
D.3.1.1 Description of implemented sampling design?	MR	-	N/A	OK	OK
D.3.1.2 Collected data (electronic spreadsheets may be attached and referenced)?	MR	-	N/A	OK	OK
D.3.1.3 Analysis of the collected data?	MR	-	N/A	OK	OK
D.3.1.4 Demonstration on whether the required confidence/precision has been met?	MR	-	N/A	OK	OK
E. Calculation of emission reductions or GHG removals by sinks					
E.1 Calculation of baseline emissions or baseline net GHG removals by sinks					
E.1.1 Are the sample calculations for all formulae used and calculation of baseline emissions	MR	-	Yes.	OK	OK



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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
or baseline net GHG removals by sinks provided, applying actual values?	PS	197(a)			
E.1.2 Are the electronic spreadsheets to present full calculations in the monitoring report attached?	MR	-	Yes.	OK	OK
E.2 Calculation of project emissions or actual net GHG removals by sinks					
E.2.1 Are the sample calculations for all formulae used and calculation of project emissions or actual net GHG removals by sinks provided, applying actual values?	MR PS	- 197(b)	Yes.	OK	OK
E.2.2 Are the electronic spreadsheets to present full calculations in the monitoring report attached?	MR	-	Yes.	OK	OK
E.3 Calculation of leakage					
E.3.1 Are the sample calculations for all formulae used and calculation of leakage provided, applying actual values?	MR PS	- 197(c)	Yes.	OK	OK
E.3.2 Are the electronic spreadsheets to present full calculations in the monitoring report attached?	MR	-	Yes.	OK	OK
E.4 Summary of calculation of emission reductions or net anthropogenic GHG removals by sinks					

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
E.4.1 Are the results of above sections summarized and GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period presented, using the provided table?	MR PS	- 197(d)	Yes.	OK	OK
E.4.2 Is a complete set of data for the specified monitoring period is available?	VVS	245(a)	A complete set of data, including the meter reading records for this monitoring period, have been provided to Bureau Veritas Certification.	OK	OK
E.4.3 Has information provided in the monitoring report been cross-checked with other sources such as plant log books, inventories, purchase records, laboratory analysis?	VVS	245(b)	Yes. Monitored data indicated on the meter reading records is crosschecked with the sales receipt.	OK	OK
E.4.4 Have calculations of baseline emissions, and project activity emissions and leakage, as appropriate, been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document?	VVS	245(c)	Yes. The calculations of baseline emissions have carried out in accordance with the formulae: $EG_y = EG_{out,y} - EG_{in,y}$ $BE_y = EF_y * EG_y$ The project emissions of the project do not need to be considered according to the ACM0002 Version 09. Leakage $Ly=0$ according to ACM0002 Version 09.	OK	OK
E.4.5 Have any assumptions used in emission calculations been justified?	VVS	245(d)	The project emissions of the project do not need to be considered according to the ACM0002 Version 09. Leakage $Ly=0$ according to ACM0002 Version 09.	OK	OK



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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
E.4.6 Have appropriate emission factors, IPCC default values and other reference values been correctly applied?	VVS	245(e)	Yes. The emission factor of the 1 st crediting period of the Project has been determined ex-ante in the registered PDD.	OK	OK
E.5 Comparison of actual emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD					
E.5.1 Is a comparison of actual GHG emission reductions or net anthropogenic GHG removal of the project activity achieved during this monitoring period with the estimates in the registered PDD provided?	MR PS	- 198	Yes. Actual emission reductions are less than estimation.	OK	OK
E.6 Remarks on difference from estimated value in registered PDD					
E.6.1 For any registered CDM project activity, except A/R project activities, have project participants explained the cause of any increase in the actual GHG emission reductions achieved during the current monitoring period (e.g. higher water availability, higher plant load factor, etc.), including all information (i.e. data and/or parameters) that is different from that stated in the registered PDD?	MR PS	- 199	N/A	OK	OK
E.7 Actual emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and					



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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
the period from 1 January 2013 onwards					
E.7.1 If the monitoring period starts before 31 December 2012 and ends anytime thereafter, are actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved for the following two periods provided respectively? (a) Up to 31 December 2012 (1st commitment period); (b) From 1 January 2013 onwards.	MR	-	Yes.	OK	OK
E.7.2 Is it ensured that the achieved GHG emission reductions or net anthropogenic GHG removals by sinks are calculated proportionally for each period? In cases where annual caps were applied in the calculations, is it ensured that the annual caps are pro-rated to each period?	MR	-	N/A	OK	OK

Table 2 Resolution of Corrective Action / Forward Action / Clarification Requests.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project participant response	Verification team conclusion
<p>CAR-1: As per registered monitoring plan, In Section B.7.1, it is indicated that "Source of data to be used" is "measured by a bidirectional meter M1" for both parameters of EGout,y and EGin,y, while "description of measurement methods and procedures to be applied" is "the readings of meter M2 will be monitored continuously and recorded monthly, and then crosschecked with the readings of meter M1 installed and owned by the grid company" and similar sentence can be found in Page 29 of Section B.7.2. It is not clear which meter is the main meter. A revised monitoring plan to reflect the actual monitoring practice is required to be submitted with this monitoring report.</p>	B.2.3.1	<p>In the registered PDD, there was some contradictory information in regard to the M2 in the monitoring plan. According to the actual monitoring practice, the M2 is just a backup meter, which is in function only when the main meter M1 is out of order. Therefore, a more accurate monitoring plan has been revised.</p> <p>And as for this change from the registered monitoring plan, in line with the term 5(c) of the "Appendix 1: Changes that do not require prior approval by the board" of CLEAN DEVELOPMENT MECHANISM PROJECT STANDARD (Version 02.0). Hence, this permanent change from the registered monitoring plan does not require prior approval by the board.</p>	<p>According to the actual monitoring practice, meter M2 is just a backup meter, which is in function only when the main meter M1 is out of order. Therefore, a more accurate monitoring plan has been revised.</p> <p>A revised monitoring plan is submitted with this request for issuance, which is not required prior approval as per appendix 1 of PS. CAR-1 was hence closed.</p>

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Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project participant response	Verification team conclusion
		The revised PDD of version 05 dated as 04/03/2013 has been submitted for approving for post registration change.	
CL-1 Please indicate the manufacturer and type of wind turbines.	A.1.2.2	The manufacturer of Sinovel Wind Group Co., Ltd and type of wind turbines (SL1500/77) have been added in the updated MR as required.	The manufacturer of Sinovel Wind Group Co., Ltd and type of wind turbines (SL1500/77) have been added in the updated MR. CL-1 was hence closed.
CL-2 The started construction date indicated in the registered PDD is 15/04/2007, please clarify.	A.1.2.3	There was a typo error in the table 2 of the registered PDD: the construction activities began on 15/04/2008 rather than 15/04/2007. The proof of Construction Contract has been submitted for checking and a revised PDD with correction of this issue has been provided.	15/04/2007 was a typo error in the table 2 of the registered PDD. Bureau Veritas Certification has checked the Construction Contract and confirmed that the construction activities began on 15/04/2008 rather than 15/04/2007. A correction of registered PDD has been submitted with this request for issuance to show the correct date of construction started, as per appendix 1 of PS, no prior approval is required. CL-2 was hence closed.
CL-3 It was mentioned in the MR that no overhaul happened during this monitoring period. However, it was found that an overhaul was happened in July 2012 during on site visit,	B.1.1	There were 3 days of equipment shutdown for overhaul from 11/07/2012 to 13/07/2012 due to the daily maintenance. Relevant	There were 3 days of equipment shutdown for overhaul from 11/07/2012 to 13/07/2012 due to the daily maintenance. Relevant information has

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Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project participant response	Verification team conclusion
please clarify the inconsistency.		information has been added in the section B1.1 of the updated MR.	been added in the section B1.1 of the updated MR. CL-3 was hence closed.
CL-4 A diagram to show the technical process and equipments is required.	B.1.1	The description of the technical process and equipment including diagram have been added in the updated MR, which is in compliance with the Guidelines in the EB70, Annex 11.	The description of the technical process and equipment including diagram have been added in the updated MR. CL-4 was hence closed.
CL-5 The sales receipt of electricity purchased from the grid during this monitoring period was issued every three months but not each month, please revise relevant description.	C.1.2	Relevant description regarding to quarterly sales receipts on the electricity purchased from the grid has been updated in the MR.	Relevant description regarding to quarterly sales receipts on the electricity purchased from the grid has been updated in the MR, which is consistent with the monitoring plan. CL-5 was hence closed.