



Voluntary Carbon Standard Version 2007.1

VERIFICATION REPORT OF

INNER MONGOLIA SUNJIAYING 50.25MW WIND POWER PROJECT

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Verification Report of Inner Mongolia Sunjiaying 50.25MW Wind Power Project	Robin Wang Jing
Client:	Project Title:
United Carbon Assets Limited	Inner Mongolia Sunjiaying 50.25MW Wind Power Project

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Summary:

Bureau Veritas Certification has made the verification of Inner Mongolia Sunjiaying 50.25MW Wind Power Project (hereafter referred to as "the Project") of Chifeng Xinsheng Wind Power Co. Ltd. (the PP) located in Inner Mongolia Autonomous Region, P.R. China, UNFCCC CDM Registration no.1488 on the basis of Voluntary Carbon Standard (VCS) 2007.1 Program and 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, as well as the host country criteria.

The verification scope is defined as a periodic independent review and ex-post determination by the Designated Operational Entity of the monitored reductions in GHG emissions during defined verification period, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) site visit and 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.

The first output of the verification process is a list of Clarification Requests, Corrective Actions Requests, Forward Actions Requests (CL, CAR and FAR).

In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in VCS PD and validated and registered CDM project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is ready to generate GHG emission reductions. The GHG emission reduction is calculated without material misstatements.

Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions viz. Voluntary Carbon Units (VCUs) reported and related to the valid and registered project baseline and monitoring, and its associated documents. Based on the information we have seen and evaluated we confirm the actual amount of VCUs associated with the project specific monitoring report that has been verified as following statement:

Reporting Period	Emission reductions
01/01/2007 to 31/12/2007	159,765 t CO ₂ equivalents (VCUs)
01/01/2008 to 23/04/2008	56,872 t CO ₂ equivalents (VCUs)

Work carried out by:	Number of pages:
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1 Introduction

United Carbon Assets Limited (The entity serves as a consultant and broker) has commissioned Bureau Veritas Certification to verify the emission reductions of its voluntary emission reduction (VER) project of Inner Mongolia Sunjiaying 50.25MW Wind Power Project (hereafter called "the Project"), located in Banner County, Baotou City, Inner Mongolia Autonomous Region, P.R. China for the period from 01/01/2007 to 23/04/2008 prior to its CDM first crediting period.

Bureau Veritas Certification as the verification body of the Project has been accredited as a DOE by UNFCCC and also meets the competence requirements as set out in ISO 14065:2007.

1.1 Objective

Verification is the periodic independent review and ex post determination by the verification body of the monitored reductions in GHG emissions during defined verification period.

The objective of verification is one-off Periodic Verification for the VCU's generated by the Project before its CDM first crediting period as from 24/04/2008 and after the time limit of project start date 28/03/2006 as prescribed in Clause 5.2.1 of VCS 2007.1 Program.

VCS 2007 Program and 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.

1.2 Scope and Criteria

The verification scope is defined as an independent and objective review of the CDM Project Design Document (PDD), the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against VCS 2007.1 requirements, UNFCCC rules and associated interpretations.

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

1.3 VCS Project Description

The Project is sited in Wengniute County, Inner Mongolia Autonomous, P.R.China. All 67 sets of Goldwind (S48/750Kw) wind turbines with total installed capacity of 52.5 MW as described in the registered PDD were implemented and commissioned /1/. Each turbine equipped with a 690V to 35kV transformer, from which a 35kV line link into the on-site 220kV substation of the project. The electricity generated from the Project was then transmitted to grid substation and then exported to Northeast China Power Grid (NEPG) through a 220KV transmission line.

The Project has been registered as a CDM project on 24/04/2008 (UNFCCC Reg. No. 1488) under approved CDM methodology ACM0002. version06.

(<http://cdm.unfccc.int/Projects/DB/DNV-CUK1198676316.92/view>)

The first generator was put into operation on 27/12/2006 and the last generator was put into operation on 31/12/2007/13/. The electricity generated has been delivered properly to the grid as per the PPA signed with the grid company/11/. All facilities and equipments as described in the registered PDD of the Project are in place and the PP has operated the Project as per registered PDD.

1.4 Level of Assurance

The verification report is based on VCS PD, VCS Monitoring Report, supporting evidences made available to the verifier and information collected through performing interviews and during the on-site assessment. The verification conclusion is assured the credibility of all above.

2 Methodology

The verification is as a desk review and field visit including discussions and interviews with selected experts and stakeholders.

In order to ensure transparency, a verification protocol was customized for the Project, according to the Validation and Verification Manual Version 01.1 (EB 51st Annex 3), a verification protocol is used as part of the verification. 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 organises, details and clarifies the requirements the Project is expected to meet; and
- It ensures a transparent verification process where the verifier will documents how a particular requirement has been verified and the result of the verification;

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

3 Verification Findings

In the following sections, the findings of the verification are stated. The verification findings for each verification subject are presented as follows:

- 1) The findings from the desk review of the initial VCS PD and the findings (CARs, CLs and FARs) from interviews during the follow up visit are summarized.
- 2) The conclusions for verification subject are presented.

3.1 Project Implementation

The Project has been implemented and commissioned before the date of CDM registration. All facilities and equipments as described in VCS PD and the registered CDM PDD have been installed. All 67 sets wind turbine generators have been put into operation.

[Power system] /6/

The electricity generated by 67 sets wind turbines is delivered from 35kV/220kV onsite substation to grid substation and then exported to Northeast China Power Grid.

[Metering system]

The Project and Inner Mongolia Wudaogou 50.25MW Wind Power Project (CDM registration number.1487) are owned by the same project entity. The two wind farms are sharing the 220 kV power line exporting electricity to the grid. Total net electricity delivered to the grid by the two wind farms can be measured by one shared meter (the revenue meter) installed at the grid substation. This shared meter has bidirectional metering, recording both export to the grid (E_{export}) and import from the grid (E_{import}).

Separate meters are installed at each of the project sites, which can also record bidirectional metering, and can be used as check meters for the revenue meter. The

on-site check meters are owned, operated and maintained by Chifeng Xinsheng Wind Power Co. Ltd.

The net electricity delivered to the grid from each of wind farm can be calculated by the readings of the revenue meter and the on-site check meters. The measurement of electricity from the check meters of the two wind farms are used to calculate the share of each wind farm in the net electricity supply to the grid. With a view of conservativeness, the total electricity imported from the grid by the two wind farm has been deducted from the total electricity exported to the grid by the Project.

The grid company provides the result to the project owner monthly and the project owner checks the results against the readings from the meters directly measuring the two projects.

The data reporting procedure between the PP and the grid company has been identified and verified during the on-site visit /8/. The readings of the meters are cross-checked with sales receipts and confirmed by the two parties and clearly reflect the electricity supplied to the grid by the Project. In order to ensure the accuracy and completeness of the records, the PP had taken the effective actions including the installation, calibration and continual monitoring for the meters.

[Calibration]

As per the registered Monitoring Plan and the signed PPA, all above meters have been installed and calibrated appropriately. The calibration procedures comply with the relevant standard.

The calibration records of the meters are showed in table 2:

Table 2 Calibration Records of the Meters /9//10/

The valid period of the calibrations can cover the monitoring period.

Meters involved for monitoring

Data measured	Manufacturer	Type	Serial number	Accuracy	Calibration date
E_{Export} E_{import}	Landisgyr	ZD402	86693424	0.2S	2007.10.25 2006.11.09
E_{wudaogou}	Changsha Weisheng	DTSD341	200504230U0190 200504230U0242	0.5S	2008.05.19 2007.05.19 2006.11.16
$E_{\text{sunjiaying}}$	Changsha Weisheng	DTSD341	200504230U0186 200504230U0245	0.5S	2008.05.19 2007.05.19 2006.11.16
E_{10kv}	Zhejiang Zhengtai	DTS634	2006-04-46355251	1.0S	2008.05.19 2007.05.28 2006.05.28

All meters have been calibrated once a year according to the registered CDM PDD.

3.2 Internal and External Data

According to the method determining the electricity imported and exported by the two projects between the project owner and the grid company, readings of the shared meter and the project-wise meters are used to calculate the share of net electricity delivered to the grid by each project. The calculation formula shows as follows:

$$EG_y = E_{_Export} / (E_{_Sunjiaying} + E_{_Wudaogou}) * E_{_Sunjiaying} - E_{_import} - E_{_10kv}$$

Where:

E_{gy} is the calculated net electricity supplied from the Project;

$E_{_Export}$ is the total electricity supplied to the grid, this data is provided by the grid company and used in the Electricity Transaction Note, and it is checked by the meter reading from the onsite substation (which is for the two wind farms combined);

$E_{_Sunjiaying}$ is the electricity generation metered by the on-site check meters of the Project;

$E_{_Wudaogou}$ is the electricity generation metered by the on-site check meters of 1487 Inner Mongolia Wudaogou 50.25MW Wind Power Project;

$E_{_import}$ is the total electricity imported from the grid by the two wind farms; this data is measured by the grid company and confirmed by electricity purchase invoice

$E_{_10kv}$ is the electricity consumption through the 10kV back-up power line by the Project, which is also confirmed by the grid company.

The accumulated amount of exported and imported electricity of each month was confirmed by the grid company and PP together. After all the data was confirmed by both parties, sales receipts were issued by the grid company.

BVC has verified the monthly reading records of the meters and has cross checked the data with sales receipts covering the period from April 2007 to January 2009.

According to the methodology ACM0002 version.06, there is no other external data which is required to determine the emission reductions of the Project as the emission factor of the crediting period (01/01/2007 to 23/04/2008). of the Project has been determined ex-ante in the registered PDD. The emission factor used in the monitoring report has been verified against the PDD and found the same.

3.3 Management and Operational System

The PP has operated the Project consistent with the registered CDM PDD and VCS PD. The monitoring organization has been set up and all monitoring staffs have been trained. CDM Monitoring & Management Manual and CDM monitoring internal Training records have been provided and verified by BVC. The management and operational system for the Project is in place: the organization structures with the responsibilities have been properly identified. The data management system and CDM working group functions properly, the monitoring parameters have been properly measured as per the monitoring plan and the records have been documented by the assigned monitoring staff on monthly basis. A periodic review being a regular practice ensures the quality assurance of the procedures followed for recording the monitoring parameters. The key parameters are reviewed annually as per the procedures in registered monitoring plan.

3.4 Completeness of Monitoring

The reporting procedures reflect the description of the VCS PD. The monitoring mechanism with practicable procedures has been verified to be effective and reliable.

The documented evidences and records submitted by the PP to determine emission reductions have been verified as of sufficient quantity and appropriate quality.

3.5 Accuracy of Emission Reduction Calculations

The calculation of emission reductions has been verified be appropriate, conservative and in accordance with the CDM methodology ACM0002 version 06.

According to the registered PDD and the Monitoring Report, the emission reduction for the Project is calculated as the baseline emissions minus the project emissions. As the Project is a wind power activity, the final GHG emission reduction is calculated as follows:

Table 1 Monitored data and determination of EG_y

Period	E_{Export} (kWh)	E_{Import} (kWh)	E_{10kv} (kWh)	$E_{\text{Sunjiaying}}$ (kWh)	E_{Wudaogou} (kWh)	EG_y (kWh)
	A	B	C	D	E	$F=A/(D+E)*E-B-C$
01/01/07-31/01/07	23700000	94380	4860	11398800	12094250	11399972
01/02/07-28/02/07	28640000	26180	0	14074550	15089900	13795274
01/03/07-31/03/07	19040000	125840	0	9941750	10912300	8951098
01/04/07-30/04/07	22820000	43340	0	11558750	10221750	12067065
01/05/07-31/05/07	24346740	31900	60	10818150	9370200	13014509
01/06/07-30/06/07	6420000	91960	0	4807950	4927300	3078687
01/07/07-31/07/07	4490000	124960	600	2065700	2354450	1972783
01/08/07-31/08/07	9301600	109340	60	3761450	2727200	5282708
01/09/07-30/09/07	6040000	105380	16440	3138450	3177650	2879437
01/10/07-31/10/07	26640000	96800	14040	14788200	12820500	14158490
01/11/07-30/11/07	41250000	65340	6960	26036150	16751000	25028488
01/12/07-31/12/07	46161940	32340	9540	28031150	18452350	27795358
<i>Subtotal 2007</i>						139423870
01/01/08-31/01/08	22750000	36740	2760	14818475	9652125	13737040
01/02/08-29/02/08	24230000	22220	1920	15352925	9766575	14785126
01/03/08-31/03/08	18755000	31020	2300	14017500	8025850	11893098
01/04/08-23/04/08	14413520	33550	15770	8962800	4979450	9216436
<i>Subtotal 2008</i>						49631700

The net electricity supplied to the grid (EG_y) in 2006 (01/01/2007-31/12/2007) is 139423.8 MWh.

The net electricity supplied to the grid (EG_y) in 2008 (01/01/2008-23/04/2008) is 49631.7 MWh.

The baseline emission (BE_y) in 2007 can be calculated by the formula below:

$$BE_y = EG_y \times EF_y = 139423.8 \text{ MWh} \times 1.1459 \text{ tCO}_2\text{e/MWh} = 159,765 \text{ tCO}_2\text{e}$$

As the project emission and leakage from the Project is zero, emission reduction is equal to baseline emission. Emission reduction during 2007 is:

$$ER_y = BE_y = 159,765 \text{ tCO}_2\text{e}.$$

The baseline emission (BE_y) in 2008 can be calculated by the formula below:

$$BE_y = EG_y \times EF_y = 49631.7 \text{ MWh} \times 1.1459 \text{ tCO}_2\text{e/MWh} = 56,872 \text{ tCO}_2\text{e}$$

As the emissions and leakage from the Project is zero, emission reduction is equal to baseline emission. Emission reduction during 2008 is:

$$ER_y = BE_y = 56,872 \text{ tCO}_2\text{e}.$$

3.6 Quality Evidence to Determine Emission Reductions

The critical parameters used for the determination of the Emission Reductions are the reading records of the main meters reflecting the electricity exchanged (export & import) with the grid in parallel with the electricity sales receipts issued by the grid company in this reporting period.

The data pertaining to the above parameters is maintained in the identified records and consistent with the values stated in the VCS Monitoring Report version 02. /5/

3.7 Management System and Quality Assurance

BVC has ensured that the quality management system for the Project has been in place. The documented instructions including the responsibilities have been properly implemented and in line with the registered CDM PDD and VCS PD. Internal review being a regular practice ensures the quality assurance of the monitoring procedures. The plant manager is responsible for data protection exclusively with access restrictions. /12/

4 Verification Conclusion

Bureau Veritas Certification has performed a verification of Inner Mongolia Sunjiaying 50.25MW Wind Power Project in Inner Mongolia Autonomous Region China (UNFCCC CDM Registration Ref. 1488-dated 24/04/2008). The verification is based on the currently valid VCS Program 2007.1 released by Voluntary Carbon Standard Association on 18 November 2008.

The management of Chifeng Xinsheng 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 procedures in the VCS PD version 01 dated 14/01/2010. The development and maintenance records and reporting procedures is in accordance with the 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 verified the VCS Monitoring Report version 02 dated 22/02/2010 for the reporting period as indicated below. Bureau Veritas Certification is able to confirm that the Project is implemented as planned and described in the VCS PD. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the Project is ready to generate GHG emission reductions (VCUs).

Bureau Veritas Certification can confirm that the GHG emission reduction is calculated without material misstatements. Our opinion relates to the Project's GHG emissions and resulting GHG emission reductions reported and related to the project baseline, monitoring activity and its associated documents. Based on the information we have seen and evaluated we confirm the actual amount of VCUs associated with the Project specific monitoring report that has been verified as following statement:

Reporting period : from 01/01/2007 to 31/12/2007
 Baseline emissions : 159,765 t CO₂ equivalents.
 Project emissions : 0 t CO₂ equivalents.
 Emission Reductions : 159,765 t CO₂ equivalents (VCUs) Reporting period :

Reporting period : from 01/01/2008 to 23/04/2008
 Baseline emissions : 56,872 t CO₂ equivalents.
 Project emissions : 0 t CO₂ equivalents.
 Emission Reductions : 56,872 t CO₂ equivalents (VCUs)



Robin Wang Jing

Internal Reviewer

Date: 01/03/2010

5 Reference

Category 1 Documents:

- /1/ Registered CDM Project Design Document (PDD) version 3.0 dated 14/11/2007
- /2/ CDM Validation Report version 05 dated 12/05/2009
- /3/ VCS PD version 01 dated 10/09/2008
- /4/ VCS Monitoring Report version 01 dated 14/01/2010
- /5/ VCS Monitoring Report version 02 dated 22/02/2010

Category 2 Documents:

- /6/ Diagram of Power System Connection of the Project
- /7/ Monthly Reading Records of the meters
- /8/ Sales receipts issued by the grid company of the Project
- /9/ Calibration Certification of the meters
- /10/ Certificate of metrological authorization authorized by Inner Mongolia Provincial Bureau of Quality and Technical Supervision.
- /11/ Signed Power Purchase Agreement (PPA)
- /12/ CDM Monitoring & Management Procedure
- /13/ Operation timesheet for wind turbines
- /14/ National standard-“Technical Administrative Code of Electric Energy Metering DL/T 448-2000”
- /15/ National standard-“Verification Regulations for Electronic Meter (JJG 596—1999)”