GUOHUA WULATE ZHONGQI PHASE I 49.5 MW WIND FARM PROJECT

Document Prepared By Guohua CWP（Bayannaoer） Wind Power Co., Ltd.

Project Title	Guohua Wulate Zhongqi Phase I 49.5 MW Wind farm Project
Version	04
Date of Issue	23/12/2012
Prepared By	Li Jia
Contact	Address: Chuanjing Windfarm, Wulate Zhongqi, Bayannaoer, Inner Mongolia, China Telephone: +86-10-58151713 Email: lijia@guohua.com.cn

Table of Contents

1 PROJECT DETAILS

1.1 Summary Description of the project

Guohua Wulate Zhongqi Phase I 49.5 MW Wind farm Project (hereafter referred to as the project) is located in Urad Zhongqi, Bayan Nur League, Inner Mongolia Autonomous Region, P. R. China. The project will be constructed and operated by Guohua CWP（Bayannaoer）Wind Power Co., Ltd. The objective of the project is to utilize the wind power for generating electricity, which will be sold into the North China Power Grid (NCPG). The total installed capacity of the project is 49.5MW with 33 sets of turbines and a unit capacity of 1500kW. The estimated electricity output to NCPG is 124,300MWh per year.

The project activity will generate greenhouse gas (GHG) emission reductions by avoiding CO_2 emissions from electricity generation by fossil fuel power plants and will contribute to sustainable development of the local community and the host country by reducing GHG emissions of 133,685tCO_2e per year.

1.2 Sectoral Scope and Project Type

The purpose of the project belongs to Sectoral Scope 1: Energy industries (Renewable Energy). It is to generate zero-emission wind power and not a grouped project.

1.3 Project Proponent

Guohua CWP（Bayannaoer）Wind Power Co., Ltd.

People's Republic of China(Host)

Li Jia, Project Manager

Tel: +86-10-58151713, Fax: +86-10-58151705, Email: lijia@guohua.com.cn

1.4 Other Entities Involved in the project

N/A

1.5 Project Start Date

30/07/2009

1.6 Project Crediting Period

A CDM crediting period of 7 (seven) years (renewable twice) was selected for the Project activity. The first CDM crediting period is from 01/03/2010 to 28/02/2017.

The VCS crediting period of the Project is from 01/08/2009 to 28/02/2010. Obviously, no overlapping periods exists between the VCS crediting period and the CDM crediting period.

1.7 Project Scale and Estimated GHG Emission Reductions or Removals

Project	YES
Mega-project	NO

Years	Estimated GHG emission reductions (tCO_2e)
Year 2009	56,038
Year 2010	21,609
Total estimated ERs	77,647
Total number of crediting years	2
Average annual ERs	133,685

1.8 Description of the project Activity

The project generates renewable power electricity by using the wind power resource, and supplies electricity to NCPG replacing fossil fuel consumption and thus reducing GHG (CO_2) emissions. It involves installation and operation of 33 wind turbines with the unit capacity of 1,500 kW and total capacity of 49.5 MW. The expected annual electricity delivered to the grid is 124,300 MWh.

The electricity currently generated by the Grid is relatively fossil fuel intensive, with a combined margin emission factor of 1.0755tCO_2/MWh. The project is therefore expected to reduce emissions of GHG of 133,685tCO_2e per year during the first CDM crediting period as well as the VCS crediting period by displacing electricity from NCPG.

The expected operational lifetime of the project activity is 20 years.

1.9 Project Location

The Project is located in Urad Zhongqi, the north of Bayan Nur League and the west of Inner Mongolia Autonomous Region, P. R. China. The geographical coordinates of the Project is east longitude 108°19'15"-108°23'40" and north latitude 41°54'48"-41°56'35".

1.10 Conditions Prior to Project Initiation

The Project is a newly built project, there is no power plant existing prior to the Project. The objective of the Project is to utilize the wind power for generating electricity, which will be sold into the North China Power Grid (NCPG) which is dominated by fossil-fuel fired power plant.

The Project was not implemented to generate GHG emissions for the purpose of their subsequent reduction, removal or destruction.

1.11 Compliance with Laws, Statutes and Other Regulatory Frameworks

The project owner has obtained all relevant permits to the project including Business License, FSR Approval and Power Purchase Agreement. The project is compliance with regional and national laws and regulatory frameworks.

1.12 Ownership and Other Programs

1.12.1 Right of Use

Letter of Approval with approval number DRC of Inner-Mongolia Energy No [2007]1902 was issued on 17/09/2007 by Inner Mongolia DRC. The project owner has also obtained all relevant permits to the Project including Business License and Power Purchase Agreement. Moreover, the ownership of the project owner was described in the registered CDM-PDD validated by Bureau Veritas Certification.

1.12.2 Emissions Trading Programs and Other Binding Limits

N/A

1.12.3 Participation under Other GHG Programs

The Project was registered as a CDM project on 01/03/2010 with reference No.2597. The Project applied approved consolidated baseline and monitoring methodology ACM 0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” (Version 09).

It has been put into operation since 30/07/2009. Bureau Veritas Certification was commissioned as DOE to perform validation under the CDM and issued Validation Report on 26/02/2010 which could be considered as validation date in accordance with relevant requirements on it. Obviously, the validation date is earlier than the Project start date.

1.12.4 Other Forms of Environmental Credit

The Project neither has nor intends to generate any other form of GHG-related environmental credit for GHG emission reductions or removals claimed under the VCS Program, or that any such credit has been or will be cancelled from the relevant program.

1.12.5 Projects Rejected by Other GHG Programs

N/A

1.13 Additional Information Relevant to the project

Eligibility Criteria

N/A

Leakage Management

According to ACM0002(Version 09), leakage of wind power project can be neglect.

Commercially Sensitive Information

No commercially sensitive information has been excluded from the public version of the project description.

Further Information

It is described in the FSR that the transmission system will be finally determined by the transmission system design report and co-responding approval. According to the transmission system design report and co-responding approval, the Project is connected into Delingshan substation which is a part of NCPG. The Wengeng substation, which described in diagram of the registered PDD, is a mistake. Actually, the project is connected into delingshan substation.

There is no additional relevant legislative, technical, economic, sectoral, social, environmental, geographic, site-specific and/or temporal information that may have a bearing on the eligibility of the Project, the net GHG emission reductions or removals, or the quantification of the Project's net GHG emission reductions or removals.

2 APPLICATION OF METHODOLOGY

2.1 Title and Reference of Methodology

The approved consolidated baseline and monitoring methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", Version 09.

2.2 Applicability of Methodology

The project is a grid-connected renewable power generation project activity that installs a new wind power plant at a site where no wind power plant was operated prior to the implementation of the project activity and does not represent a capacity addition to an existing plant. The project activity does not involve switching from fossil fuels to renewable energy at the site of the project activity. Therefore, the project activity meets the applicability conditions of the methodology applied to the project.

2.3 Project Boundary

The greenhouse gases and emission sources included in or excluded from the project boundary are shown in Table

Source		Gas	Included?	Justification/Explanation
Base line	CO2 emission from electricity generation in NCPG power plants that is	CO_2	Yes	Main emission source
		CH_4	No	Minor emission source

Source		Gas	Included?	Justification/Explanation
	displaced due to the project activity	N_2O	No	Minor emission source
Project	Project Emission	CO_2	No	The project is a wind power project that the project emissions should not be considered as per ACM0002 (Version 09).

2.4 Baseline Scenario

According to the registered PDD, the baseline scenario for the project is as follows: Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of power plants connected to NCPG and by the addition of new generation sources of NCPG.

2.5 Additionality

The additionality of the project is validated in the registered CDM PDD.

2.6 Methodology Deviations

N/A

3 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

3.1 Baseline Emissions

According to ACM0002(version 09), the baseline emissions (BE_y) are calculated as:

$$BE_y = EG_y \times EF_{grid,\,CM,\,y} = (EG_{export,\,y} - EG_{import,\,y}) \times EF_{grid,\,CM,\,y}$$

Where:

BE_y, Baseline emissions in period y (tCO_2e/yr),

EG_y, Electricity supplied by the project activity to the grid in period y (MWh);

$EF_{grid,CM,y}$, Combined margin CO2 emission factor for grid connected power generation in year y,calculated using the latest version of the "Tool to calculate the emission factor for an electricity system, Version 01.1". (tCO_2e/MWh),

$EG_{export,\,y}$, The electricity exported to the NCPG by the project in period y (MWh),

$EG_{import,\,y}$, The electricity imported by the project to NCPG in period y (MWh).

According to the Feasibility Study Report, the annual power generation is estimated to be 124,300MWh.The baseline emission factor is $1.0755tCO_2e$/ MWh. Therefore, the annual baseline emission of the project (BE_y) is $133,685tCO_2e$.

3.2 Project Emissions

According to ACM0002 (version 09), the project emissions are taken as zero, i.e. PE_y=0tCO_2e.

3.3 Leakage

According to ACM0002(version 09) and the registered CDM-PDD, the leakage of wind power project need not be considered, i.e. L_y = 0 tCO_2e.

3.4 Summary of GHG Emission Reductions and Removals

The project activity will generate GHG emission reductions by avoiding CO_2 emissions from electricity generation by fossil fuel power plants. The emission reduction (ER_y) is calculated as follows:

$ER_y=BE_y-PE_y-L_y$=133,685-0-0=133,685tCO_2e

During the VCS crediting period, the Estimated GHG emission reductions are listed as below:

Years	Estimated baseline emissions or removals (tCO_2e)	Estimated project emissions or removals (tCO_2e)	Estimated leakage emissions (tCO_2e)	Estimated net GHG emission reductions or removals (tCO_2e)
Year 2009	56,038	0	0	56,038
Year 2010	21,609	0	0	21,609
Total	77,647	0	0	77,647

4 MONITORING

4.1 Data and Parameters Available at Validation

Data Unit / Parameter:	$EF_{grid, CM, y}$
Data unit:	tCO_2/MWh
Description:	Baseline Emission Factor
Source of data:	The registered PDD
Value applied:	1.0755
Justification of choice of data or description of measurement methods and procedures applied::	It's calculated during the validation of CDM and used to calculate the Baseline emission.
Any comment:	Ex-ante calculation fixed in the 1st crediting period

4.2 Data and Parameters Monitored

Data Unit / Parameter:	EG_y

Data unit:	MWh
Description:	Net electricity supplied to the NCPG by the project in period y
Source of data:	Calculated by $EG_{export, y} – EG_{import, y}$
Description of measurement methods and procedures to be applied:	This item is calculated based on hereinafter described parameters $EG_{export, y}$ and $EG_{import, y}$.
Frequency of monitoring/recording:	Continuously measurement and monthly recording
Value applied:	124,300
Monitoring equipment:	N/A
QA/QC procedures to be applied:	The meters in relation to $EG_{export,y}$ and $EG_{import,y}$ are well maintained and annually calibrated according to the relevant national electric industry standards and regulations.
Calculation method:	$EG_y = EG_{export, y} – EG_{import, y}$
Any comment:	Uncertainty level of data is low.

Data Unit / Parameter:	$EG_{export,y}$
Data unit:	MWh
Description:	The electricity exported to the NCPG by the project in period y
Source of data:	Electricity Meter
Description of measurement methods and procedures to be applied:	The electricity exported to the grid is monitored and measured by two electricity meters installed at the on-site substation.
Frequency of monitoring/recording:	Continuously measurement and monthly recording
Value applied:	124,300
Monitoring equipment:	Three electricity meters installed in parallel connection on project activity site.
QA/QC procedures to be applied:	The electricity meter will be calibrated annually. The data measured by the electricity meter will be double checked by receipt of sales.
Calculation method:	N/A
Any comment:	Uncertainty level of data is low.

Data Unit / Parameter:	$EG_{import,y}$

Data unit:	MWh
Description:	The electricity imported by the project from NCPG in year y.
Source of data:	Electricity Meter
Description of measurement methods and procedures to be applied:	The electricity imported from the grid will be monitored and measured by the electricity meter installed at the on-site substation.
Frequency of monitoring/recording:	Continuously measurement and monthly recording
Value applied:	0
Monitoring equipment:	Three electricity meters installed in parallel connection on project activity site
QA/QC procedures to be applied:	The electricity meter will be calibrated annually. The data measured by the electricity meter will be double checked by receipt of sales.
Calculation method:	N/A
Any comment:	Uncertainty level of data is low.

4.3 Description of the Monitoring Plan

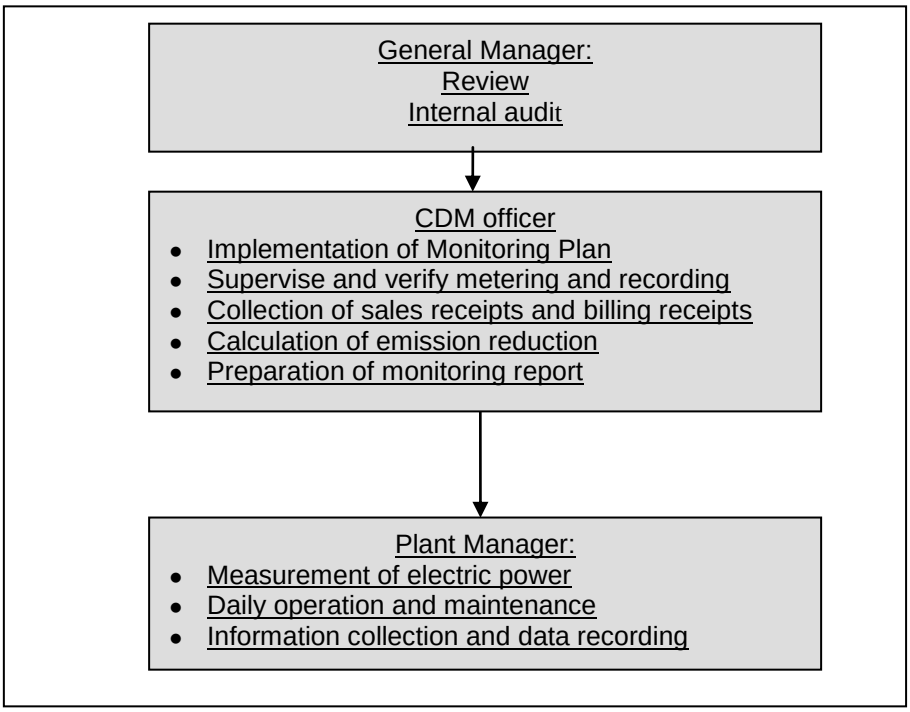
The project adopts the approved consolidated monitoring methodology ACM0002 (Version09)" Consolidated baseline methodology for grid-connected electricity generation from renewable sources" to determine the emission reductions due to the net electricity supply to NCPG by the project.

1. The users --- who use the monitoring plan

The project owner will use this document as guideline in monitoring of the project emission reduction performance and will adhere to the guidelines set out in this monitoring plan. This plan should be modified according to actual conditions and requirements of DOE in order to ensure that the monitoring is credible, transparent and conservative.

2. Operational and management structure for monitoring

The monitoring of the emission reductions will be carried out according to figure below.



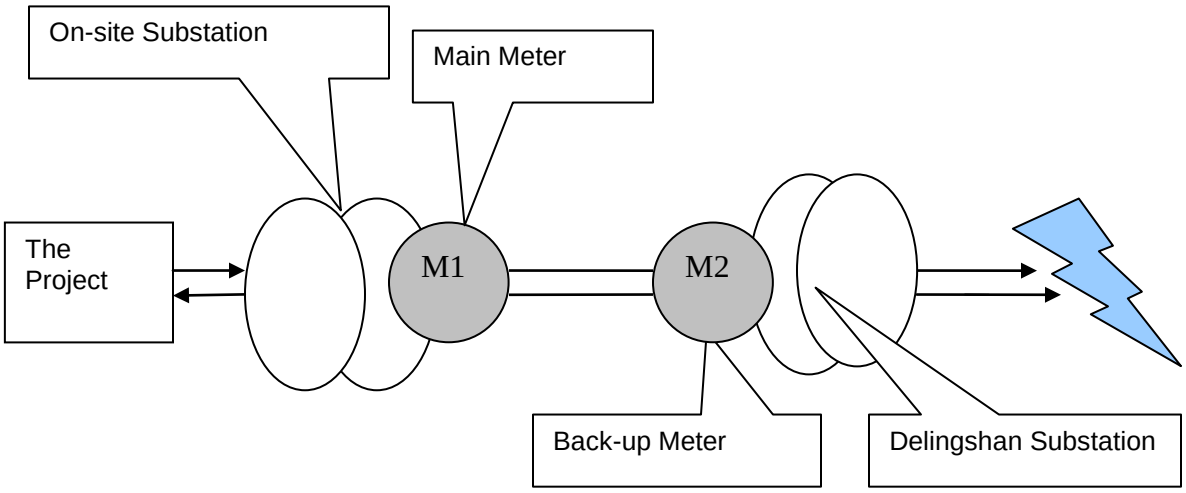
Plant manager of wind farm is responsible for recording and collecting the information and data required by the Monitoring Plan. The required information and data will be documented and sent to the CDM officer monthly. The CDM officer works out the monitoring plan, charges of its implementation and reports to the General Manager of the company. The General Manager of the company will make the confirmations on monitoring calculation data and reports.

3. Metering

The net electricity delivered to the power grid shall be metered through the main meter installed at onsite substation of the project. The main meter will be owned, operated and maintained by the project owner. The main meter with accuracy of no less than 0.5% is bidirectional and has two-way metering, recording both the electricity exported to the grid ($EG_{export,y}$) and imported from the grid($EG_{import,y}$); net electricity supplied to the grid (EG_y) is calculated as exports minus imports. This data will be cross checked by the receipt of sales.

A back-up meter will be installed at the Delingshan substation, which will be owned, operated and maintained by the grid company. The accuracy of the back-up meter is also no less than 0.5%.

The location of the main meter and back-up meter is as the following chart.



4. Calibration of Meters & Metering

The main meter will be owned, operated and maintained by the project owner, and the backup meter will be owned, operated and maintained by the Grid Company. The main meter are calibrated and checked for accuracy:

1) The main meter equipment shall have sufficient accuracy so that error resulting from such equipment shall not exceed +0.5% of full-scale rating.

2) All the meters installed shall be tested within 10 days after:

(a) The detection of a difference larger than the allowable error in the reading of both meters

(b) The repair of all or part of the meter caused by the failure of one or more parts to operate in accordance with the specifications.

Calibration is carried out by the qualified third party, and the calibration report should be provided to the project owner. The data is measured continuously and recorded monthly;

5. Data management system

Physical document such as paper-based maps, diagrams and environmental assessments will be collated in a central place, together with this monitoring plan. In order to facilitate auditors' reference of relevant literature relating to the project activity, the project material and monitoring results will be indexed. All paper-based information will be stored by the technology department of the project owner and all material will have a copy for backup.

And all data including calibration records is kept until 2 years after the end of the total crediting period of the CDM project.

6. Monitoring Report

The CDM officer will write the monitoring report including electricity produced and emission reduction every month and then submit it to the general manager, who will audit it internally. And all these documents can be verified by DOE.

5 ENVIRONMENTAL IMPACT

In accordance with relevant laws and regulations on environmental protection, an Environmental Impact Assessment (EIA) of the project has been implemented. The project is a renewable energy project without negative impacts on the environment but of great economic, environmental and social benefit.

6 STAKEHOLDER COMMENTS

In order to collect suggestions from the stakeholder, the project owner introduces to the project by poster and broadcast. Furthermore, the stakeholder comment meeting was held in Urad Zhongqi, Bayan Nur League, Inner Mongolia Autonomous Region, on 14/01/2008.

The forum issued a total of 30 copies of the questionnaire. According with the result of the survey, all the residents agree and support the implementation of the project.

The statistical data of the survey are shown as follows:

- 97% of the respondents know the project; 3% of the respondents know a little about the propose project
- 100% of the respondents argue that the project will promote the local economic;
- 69% agree that the project will affect their life positively; and 31% believe that the project has no effects on their life;
- 100% think that the project is located reasonably;
- 56% think that the project has good impact on the environment and 44% think that the project has no bad impact on the environment;
- 100% of the respondents support the project.

From the comments above, it can be concluded most representatives think the project will do good to local environment and economy and all support it.