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Standard**

GUYUAN WUHUAPING 49.5 MW WIND POWER PROJECT

Document Prepared by Beijing Shutu Technology Co.,Ltd.

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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

Guyuan Wuhuaping 49.5 MW Wind Power Project (hereinafter referred to as the Project) is located within Pingdingbu Town, Guyuan County, Zhangjiakou City, Hebei Province, P.R. China. It is invested, constructed and operated by Construction Investment Yanshan (Guyuan) Wind Energy Co., Ltd.

The total installed capacity of the Project is 49.5 MW equipped with 33 sets of wind turbines with a unit installed capacity of 1,500 kW. Electricity generated by the Project is delivered to North China Power Grid. The Project as a renewable energy source generates emission reductions by avoiding CO₂ emissions from the same amount of electricity generation from NCPG, which is mainly composed of traditional fossil fuel power plants.

The estimated electricity delivered to North China Power Grid by the Project is 117,322.7152MWh per year and the estimated emission reductions are about 123,757 tCO₂e per year.

The project started operation on 30/10/2009. This monitoring period is from 01/10/2015-29/09/2019 (1460 days). The total net electricity supplied to the grid by the project in this monitoring period are 502936.760MWh and the emission reductions in this monitoring period are 530,521tCO₂.

1.2 Sectoral Scope and Project Type

This category would fall within sectoral scope 1: energy industries (Renewable sources).

Project type: wind power project.

This project is not grouped project.

1.3 Project Proponent

Organization name	Construction Investment Yanshan (Guyuan) Wind Energy Co., Ltd.
Contact person	Zhang Bo
Title	Manager

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1.4 Other Entities Involved in the Project

Organization name	Beijing Shutu Technology Co.,Ltd.
Role in the Project	Project participant
Contact person	Zhu Shufeng
Title	Manager
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1.5 Project Start Date

30/10/2009 (operation date, which means the date that started to generate GHG emission reductions)

1.6 Project Crediting Period

The first crediting period under VCS is from 30/10/2009 to 29/10/2019 (10years, renewable). Therefore, *the total crediting period under VCS would have been from 30/10/2009 to 29/10/2039 (30 years)*. However, the project was registered under CDM on 03/07/2010 with *registration number of 3356*. And the *total crediting period under CDM is from 03/07/2010 to 02/07/2031 (21years)*.

According to VCS standard, the total crediting period under VCS is from 30/10/2009 to 02/07/2031.

1.7 Project Location

The Project is located within Pingdingbu Town, Guyuan County, Zhangjiakou City, Hebei Province, P.R.China. The center of the Project has geographical coordinates with east longitude of $115^{\circ}45'08''$ and north latitude of $41^{\circ}36'36''$. The area of the wind farm is about 55 km².

Figure 1 shows the location of Hebei Province. Figure 2 shows the location of Zhangjiakou City. Figure 3 shows the location of the Project.

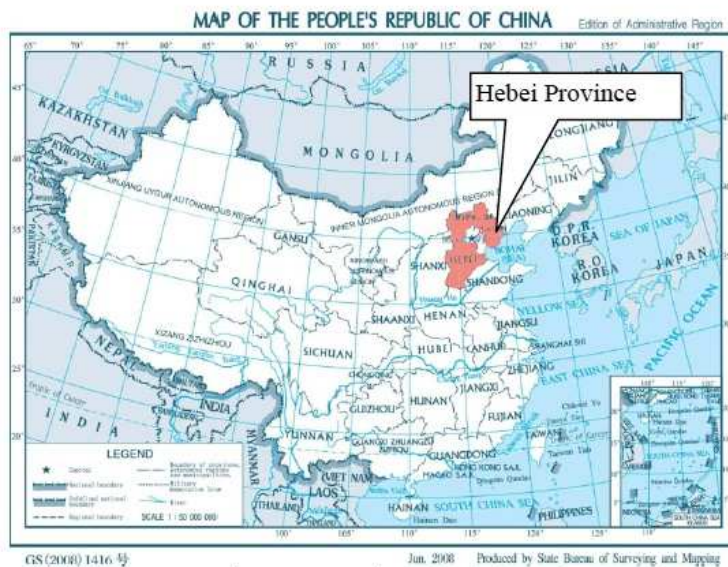


Figure 1. Location of Hebei Province

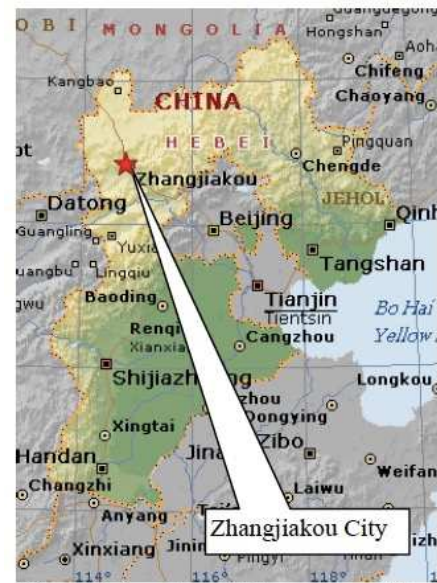


Figure 2. Location of Zhangjiakou City



Figure 3. Location of the Project

1.8 Title and Reference of Methodology

The project applies the approved consolidated baseline and monitoring methodology ACM0002

“Consolidated baseline methodology for grid-connected electricity generation from renewable sources and monitoring methodology.” (Version 10).

The methodology also refers to the following tools:

Tool to calculate the emission factor for an electricity system (Version 02);

Tool for the demonstration and assessment of additionality (Version 05.2).

1.9 Participation under other GHG Programs

The Project has been registered as a CDM project on 03/07/2010 with registration number of 3356. It has been issued four times under CDM mechanism, covering monitoring period from 03/07/2010 to 30/09/2015.

The credits in this monitoring period (01/10/2015- 29/09/2019) has not been counted and will not be counted under other kind of GHG programs.

1.10 Other Forms of Credit

The project has been registered as a CDM project on 03/07/2010, and the first crediting period is from 03/07/2010 to 02/07/2017(7years, renewable). It has been issued four times under CDM mechanism, covering monitoring period from 03/07/2010 to 30/09/2015.

The Project has not created another form of environmental credit, and the Project will not create other environmental credit in the future.

1.11 Sustainable Development

The Project will not only supply renewable electricity to the grid, but also contribute to sustainable development of the local community and the host country by means of:

- Reducing GHG emissions by replacing electricity generated from fossil fuel power plants;
- Diversifying power sources and mitigating the demand and supply contradiction;
- Helping to stimulate the growth of the wind power industry and encourage and promote the technology progress and commercial popularization of grid-connected renewable power generation projects in China;
- Reducing the emission of other pollutants resulting from the power generation industry in China, compared to a business-as-usual scenario;

- Creating 10 employment opportunities for local community during the operation period of the Project and creating several employment opportunities for local community during the construction period of the Project.

2 SAFEGUARDS

2.1 No Net Harm

The Environmental Impact Statement Form was completed by Hebei Provincial Institute of Geographic Sciences and approved by Environmental Protection Bureau of Hebei Province on May 15, 2008. According to the Environmental Impact Statement Form, environmental impacts possibly caused by the Project and treatment measures adopted by the Project Owner are analyzed as follows:

Waste water

Waste water produced during construction period and operation period of the Project is mainly domestic waste water of workers. A little of the waste water produced during the construction period will be absorbed by the earth or evaporated, without contaminating the surface ground. The domestic waste water produced during operation period will be treated in waste water treatment facilities. Then, the overflow water in the upper layer of the facilities will be introduced into reservoir for the greening of the wind farm area, without being discharged outside. Thus, the domestic waste water has little impact on the surroundings.

Dust and exhaust gas

There is no discharge of exhaust gas during the operation period of the Project. During the construction period of the Project, the generation of dust is mainly due to excavation, piling, backfilling and transportation of earth, land flattening, road expansion and transportation, loading and unloading and piling of construction materials. Exhaust gas could also be generated from the operation of oil fueled machines and vehicle running. However, by means of watering and covering the material piling areas and limiting the speed of vehicles, the air pollutant emission of the Project will meet the requirement of Integrated Emission Standard of Air Pollutants (GB16297-1996), so the Project will not have any impact on the surroundings.

Noise

Noises generated during the construction period of the Project stem from activities such as excavation and backfilling of earth for the foundation of wind turbines, piling, casting of the foundation platform, installation of the power generation equipments and construction of the multipurpose building and the substation. After attenuation, the noises meet the requirement of Noise Limits for Construction Site (GB12523-90). The noises under abnormal working conditions during the operation period will be reduced through regular maintenance and timely conservation on equipments such as turbines and transformers. As a result, the noises in the plant area and the noises at sensitive sites meet the requirement of Category I of Standard of Noise at Boundary of Industrial Enterprises (GB12348-90) and Category I of Standard of Environmental Noise of Urban Area (GB3096-93).

Solid waste

The solid waste produced during the construction period is mainly the discarded earth, the construction waste, the domestic waste and etc. The discarded earth will be immediately transported to dump sites. The construction waste and the domestic waste will be transported to the waste disposal site of Guyuan County by the environmental sanitation administrative department for sanitary landfill. During the operation period of the Project, domestic waste (about 3.65 t/a) will be collected and periodically transported to the waste disposal site of Guyuan County by the environmental sanitation administrative department for sanitary landfill. By taking the measures above, the solid waste produced in the Project will not have negative impacts on the surroundings.

Ecological impact

Damage to the vegetation caused by permanent land occupation of the Project will be compensated accordingly, in other words, vegetation with equal area and quality to the damaged will be recovered in another place. By taking measures of vegetation recovery and compensation, the Project will have no impact on local ecological environment. The migration route of birds does not go through the region of the Project, so the wind power generation facilities will not impact the migrating birds.

In summary, by means of measures of pollution avoidance and control as well as ecological recovery, the Project will not impact the environment. And the project indeed does no harm to local environment during these years.

Therefore, the project does not bring negative environmental and socio-economic impacts.

2.2 Local Stakeholder Consultation

Stakeholders of the Project are identified as local residents possibly affected by the Project. In December 2008, a survey was conducted on the stakeholders of the Project, through distributing and collecting responses to a questionnaire.

The questionnaire is distributed to the local residents near the Project Site. They are of different ages and occupations, coming from different towns and villages. For the total 60 questionnaires distributed to the stakeholders, 60 returned with a response rate of 100%.

The questionnaires mainly focus on the following issues:

- What's the extent of the stakeholders' knowledge about the Project?
- What's the attitude of the stakeholders on the construction of the Project?
- What positive impacts will be introduced by the implementation of the Project from the view of stakeholders?
- What negative impacts will be introduced by the implementation of the Project from the view of stakeholders?

According to the 60 questionnaires received:

- 58 respondents (97%) have a certain or very good understanding of the Project and 2 respondents (3%) haven't heard of the Project.

- 58 respondents (97%) support the implementation of the Project and 2 respondents (3%) keep a neutral attitude.
- 40 respondents (67%) think that the implementation of the Project could possibly enhance the electricity consumption of local residents. 18 respondents (30%) think that the implementation of the Project could possibly improve the income of local residents. 33 respondents (55%) think that the implementation of the Project could possibly increase employment opportunities for local residents. None of the respondents put forward any other positive impact possibly caused by the implementation of the Project.
- 22 respondents (37%) think that the implementation of the Project could possibly result in noise. 16 respondents (27%) think that the implementation of the Project could possibly cause land occupation.

None of the respondents put forward any other negative impact possibly caused by the implementation of the Project.

From the results of questionnaire statistics, we know that all the stakeholders understand and support the construction of the Project.

The issue of noise considered by the respondents and corresponding prevention and control measures have been analyzed in the PDD. The Project Owner will take measures to ensure that there will be no noise pollution to the local environment. For the issue of land occupation considered by the respondents, the Project has no relation to the issue of land occupation since the land required by the Project is mainly grassland and the Project Owner has paid for compensation on land occupation, as described in the FSR.

Thus, there is no necessity to modify the Project in the aspect of design, construction and operation. The Project Owner will think much of the public comments and strictly implement the pollution prevention measures stated in the Environmental Impact Statement Form.

For on-going communications with local stakeholders, the project owner public its office telephone to local people by bulletins and put a grievance book in the company's office. Anyone who have comments on the project could write on the book or leave message by phone. Besides, since the project has been operated for years, local people is familiar with the project and remember the phone number of the company. No negative comments were received from local people during this monitoring period.

2.3 AFOLU-Specific Safeguards

This project is not an AFOLU project. Therefore, this section is not applicable.

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The project installed 33 sets of wind turbines with a unit capacity of 1,500 kW and total capacity of 49.5MW. Electricity generated by the Project is delivered to NCPG via a 110 kV transmission line.

The wind power generation process of the project is showed in Figure 4

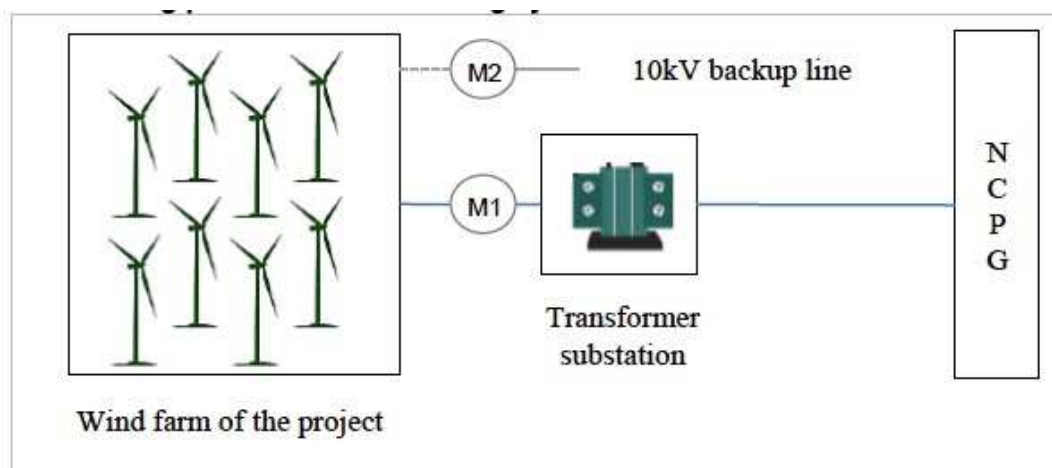


Figure 4. Flow chart of the project

The technical parameters of the installed wind turbines are shown in the table below

Table 1. Main technical parameters of key equipment in the Project

	Equipment	Quantity	Type	Technical parameters
Main mechanical and electrical equipments	Turbine	33 sets	GE1.5 sle	Rated power: 1,500kW Quantity of blades:3 Height of the hub: 80m Power factor of generator: ± 0.95 Lifetime: 20 years Estimated operating hours: 2368h
Step-up substation	Main transformer	1 set	SZ11-50000/10	Capacity: 50 MVA Rated voltage: 110/35 kV

The Project started construction on 10/05/2009 and commissioning on 30/10/2009. During this monitoring period, the monitoring system of the Project was implemented in line with the monitoring plan.

The wind farm operated normally. No equipment is overhauled or replaced in this monitoring period. No emergencies which may impact the methodology application and monitoring occurred during the monitoring period.

3.2 Deviations

2.3.1 Methodology Deviations

There is no methodology deviation in this monitoring period.

2.3.2 Project Description Deviations

There are no project description deviations in this monitoring period.

3.3 Grouped Projects

Not applicable as this is not a grouped project.

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	CAP _{j,y}
Data unit	MW
Description	The total installed capacity of province j in year y
Source of data	China Electric Power Yearbook 2005-2007
Value applied	Annex 3 of registered PD
Justification of choice of data or description of measurement methods and procedures applied	The data obtained from China Electric Power Yearbook issued by authorized entity in China are reliable
Purpose of Data	Calculation of baseline emissions
Comments	/

Data / Parameter	GEN _{j,y}
Data unit	MWh
Description	Total power generation of province j of North China Grid in year y

Source of data	China Electric Power Yearbook, 2005-2007
Value applied	Annex 3 of registered PD
Justification of choice of data or description of measurement methods and procedures applied	The data obtained from China Electric Power Yearbook issued by authorized entity in China are reliable
Purpose of Data	Calculation of baseline emissions
Comments	/

Data / Parameter	$r_{j,y}$
Data unit	/
Description	Auxiliary electricity consumption rate of province j of North China Grid in year y
Source of data	China Electric Power Yearbook, 2005-2007
Value applied	Annex 3 of registered PD
Justification of choice of data or description of measurement methods and procedures applied	The data obtained from China Electric Power Yearbook issued by authorized entity in China are reliable
Purpose of Data	Calculation of baseline emissions
Comments	/

Data / Parameter	$F_{i,j,y}$
Data unit	t or m ³
Description	Consumption of fuel i of province j of North China Grid in year y
Source of data	China Energy Statistical Yearbook, 2005-2007
Value applied	Annex 3 of registered PD
Justification of choice of data or description of measurement methods and procedures applied	The data obtained from China Energy Statistical Yearbook issued by authorized entity in China are reliable
Purpose of Data	Calculation of baseline emissions
Comments	/

Data / Parameter	$NCV_{i,y}$
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Data unit	TJ per mass or volume unit of fuel i in year y
Description	Net calorific value of fuel i
Source of data	China Energy Statistical Yearbook 2007
Value applied	Annex 3 of registered PD
Justification of choice of data or description of measurement methods and procedures applied	The data obtained from China Energy Statistical Yearbook issued by authorized entity in China are reliable
Purpose of Data	Calculation of baseline emissions
Comments	/

Data / Parameter	EF _{CO2,i,y}
Data unit	tC/TJ
Description	CO2 emission factor per unit of energy of the fuel i in year y
Source of data	2006 IPCC Guideline for National Greenhouse Gas Inventories
Value applied	Annex 3 of registered PD
Justification of choice of data or description of measurement methods and procedures applied	IPCC default value
Purpose of Data	Calculation of baseline emissions
Comments	/

Data / Parameter	FC _{adv,coal}
Data unit	gCe/kWh
Description	Weighted average of the fuel consumption for power generation of top 30 sets of 600 MW coal fired power generation units built in 2006 (taken as efficiency level of the best technology commercially available in China)
Source of data	China's Regional Grid Baseline Emission Factors (Published on 30 December 2008)
Value applied	329.94
Justification of choice of data or description of measurement methods and procedures applied	The data obtained from China's Regional Grid Baseline Emission Factors are reliable.
Purpose of Data	Calculation of baseline emissions

Comments	/
Data / Parameter	FC _{adv,oil/gas}
Data unit	gCe/kWh
Description	Weighted average of the fuel consumption for power generation of 200 MW oil/gas fired combined cycle power generation units (taken as efficiency level of the best technology commercially available in China)
Source of data	China's Regional Grid Baseline Emission Factors (Published on 30 December 2008)
Value applied	252
Justification of choice of data or description of measurement methods and procedures applied	The data obtained from China's Regional Grid Baseline Emission Factors are reliable.
Purpose of Data	Calculation of baseline emissions
Comments	/

4.2 Data and Parameters Monitored

Data / Parameter	EG _{PJ,y}
Data unit	MWh
Description	The quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the Project in year y
Source of data	Measured by electricity meter
Description of measurement methods and procedures to be applied	Continuously measured by one bi-directional meter installed on the at the Project Site. It is calculated with electricity delivered by the Project to the grid (EG _{PJtoGRID,y}), electricity imported by the Project from the grid via the main transmission line (EG _{GRIDtoPJ,y}), and electricity imported by the Project from the grid via the 10 kV backup line (EG _{10KVtoPJ,y}) $EG_{PJ,y} = EG_{PJtoGRID,y} - EG_{GRIDtoPJ,y} - EG_{10KVtoPJ,y}$
Frequency of monitoring/recording	Continuously measured and monthly recording
Value monitored	502,936.760
Monitoring equipment	The information of the electricity meter is in the following table.

QA/QC procedures to be applied	The electricity meter is calibrated by qualified entity according to national standards. The electricity records are crosschecked with electricity transaction note (ETN). The main information is shown below:				
	Type	Serial No.	Accuracy	Calibration Date	Valid date
	DSSD685	09070111440073	0.2S	18/04/2015	17/04/2016
				12/04/2016	11/04/2017
				06/04/2017	05/04/2018
				30/03/2018	29/03/2019
				25/03/2019	24/03/2020
Purpose of the data	Calculation of baseline emissions				
Calculation method	$EG_{PJ,y}=EG_{PJtoGRID,y}-EG_{GRIDtoPJ,y}-EG_{10KVtoPJ,y}$				
Comments	/				

Data / Parameter	$EG_{PJtoGRID,y}$
Data unit	MWh
Description	The electricity delivered by the Project to the grid in year y
Source of data	Measured by electricity meter
Description of measurement methods and procedures to be applied	It is continuously measured by the bi-directional meter and monthly recorded. And it is crosschecked with the ETN. The conservative value is used for ER calculation.
Frequency of monitoring/recording	Continuously measured and monthly recorded
Value monitored	503,960.400
Monitoring equipment	The information of the electricity meter is in the following table.

QA/QC procedures to be applied	The electricity meter is calibrated by qualified entity according to national standards. The electricity records are crosschecked with electricity transaction note (ETN). The main information is shown below:				
	Type	Serial No.	Accuracy	Calibration Date	Valid date
	DSSD685	09070111440073	0.2S	18/04/2015	17/04/2016
				12/04/2016	11/04/2017
				06/04/2017	05/04/2018
				30/03/2018	29/03/2019
				25/03/2019	24/03/2020
Purpose of the data	Calculation of baseline emissions				
Calculation method	/				
Comments	/				

Data / Parameter	EG _{GRIDtoPJ,y}
Data unit	MWh
Description	The electricity imported by the Project from the grid in year y
Source of data	Measured by electricity meter
Description of measurement methods and procedures to be applied	It is continuously measured by the bi-directional meter and monthly recorded. And it is crosschecked with the ETN. The conservative value is used for ER calculation.
Frequency of monitoring/recording	Continuously measured and monthly recorded
Value monitored	1,023.640
Monitoring equipment	The information of the electricity meter is in the following table.

QA/QC procedures to be applied	The electricity meter is calibrated by qualified entity according to national standards. The electricity records are crosschecked with electricity transaction note (ETN). The main information is shown below:				
	Type	Serial No.	Accuracy	Calibration Date	Valid date
	DSSD685	09070111440073	0.2S	18/04/2015	17/04/2016
				12/04/2016	11/04/2017
				06/04/2017	05/04/2018
				30/03/2018	29/03/2019
				25/03/2019	24/03/2020
Purpose of the data	Calculation of baseline emissions				
Calculation method	/				
Comments	/				

Data / Parameter	EG _{10kVtoPJ,y}
Data unit	MWh
Description	The electricity imported by the Project from the grid via the 10kV backup line in year y
Source of data	Measured by electricity meter
Description of measurement methods and procedures to be applied	It is continuously measured by the meter installed on the 10kV backup line and monthly recorded. And it is crosschecked with the ETN. The conservative value is used for ER calculation.
Frequency of monitoring/recording	Continuously measured and monthly recorded
Value monitored	0
Monitoring equipment	The information of the electricity meter is in the following table.

QA/QC procedures to be applied	The electricity meter is calibrated by qualified entity according to national standards. The electricity records are crosschecked with electricity transaction note (ETN). The main information is shown below:				
	Type	Serial No.	Accuracy	Calibration Date	Valid date
	DSSD132	20242018	1.0	12/03/2015	11/03/2016
				07/03/2016	06/03/2017
				01/03/2017	28/02/2018
				22/02/2018	21/02/2019
				15/02/2019	14/02/2020
Purpose of the data	Calculation of baseline emissions				
Calculation method	/				
Comments	/				

4.3 Monitoring Plan

1. Monitoring data

The electricity delivered by the Project to the grid in year y ($EG_{PJtoGRID,y}$), the electricity imported from the grid to the Project via the main transmission in year y ($EG_{GRIDtoPJ,y}$), and the electricity imported from the grid to the Project via the backup line in year y ($EG_{10KVtoPJ,y}$) will be monitored.

2. Monitoring System Organization Chart

The monitoring system is shown in Figure 5.

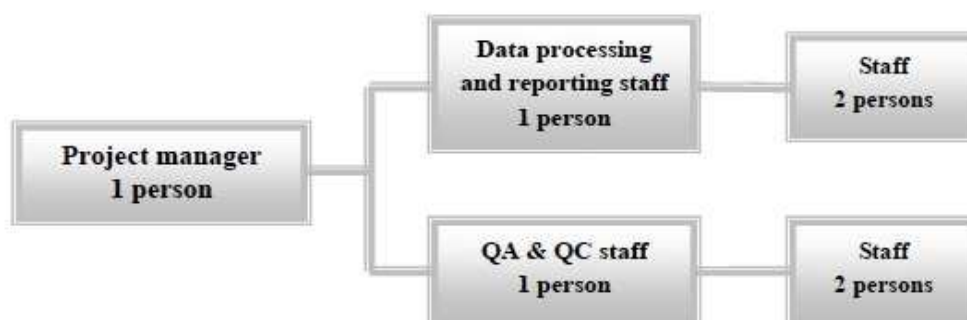


Figure 5. Monitoring structure

The Project Manager is responsible for implementation and supervision of the monitoring activity and liaison in this project. The data processing and reporting personnel are responsible for managing, processing and submitting data. The QA & QC personnel are responsible for calibration of meter and supervision of the whole process quality.

3. Installation of Meter

A bidirectional meter is installed on the main transmission line of the Project. The electricity delivered by the Project to the grid, and electricity imported from the grid to the Project will be measured continuously by bidirectional meter and recorded monthly. A backup meter is installed on the 10kV backup line to monitor the imported electricity from grid through the backup line. No electricity was imported from the backup line during this monitoring period.

Receipts (ETN) are prepared the grid company and confirmed by the project owner. ETN is used for crosscheck of the electricity records. If difference exists between the monitored data and the data on receipts, the conservative values will be used to calculate emission reductions.

4. Data Management System

Particular staff will be appointed by the Project Owner to take the overall responsibility for monitoring data recording and keeping all the data collected as part of monitoring archived electronically.

Electronic data and documents, including readings from meter(s) connected into the computer central control system, will be regularly copied and archived via optical discs and hard disk and kept for at least two years after the end of the last crediting period.

Written data and documents will be copied and archived and kept for at least two years after the end of the last crediting period.

5. Quality Assurance and Quality Control Procedure

Particular QC staff will be appointed by the Project Owner to take the overall responsibility of calibrating monitoring equipment, managing and processing the monitored data.

The meter of the Project will be calibrated by qualified entity according to national standard. The actual accuracy of the meter on main transmission line is 0.2S. The accuracy of meter on backup line is 1.0.

6. Procedure of emergency handling

If the meter is out of order, it shall be inspected, repaired, or replaced immediately by the professional staff and quantity of net electricity generation supplied by the Project to the grid shall be determined by the Project Owner and the power grid company. A conservative estimation shall be used to estimate emission reductions.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

According to ACM0002, the baseline emission during this verification period is calculated as

$$BE_y = EG_{\text{facility},y} \times EF_{\text{grid},CM,y}$$

Where:

BE_y is the baseline emissions (tCO₂e)

$EG_{PJ,y}$ is the quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the project activity in year y (MWh);

$EF_{\text{grid},CM,y}$ is the CO₂ emission factor of the NCPG, which is fixed in the first crediting period (tCO₂e/MWh)

The yearly electricity volume and baseline emissions are listed in following table 2.

Table 2. Baseline emissions

Period	Electricity delivered by the Project to the grid ($EG_{PJ\text{to}GRID,y}$) (MWh)	Electricity imported from the grid via main transmission line ($EG_{GRID\text{to}PJ,y}$) (MWh)	Electricity imported from the grid via 10 kV backup line ($EG_{10kV\text{to}PJ,y}$) (MWh)	Net electricity generation that is produced and fed into the grid ($EG_{PJ,y}$) (MWh)	$EF_{\text{grid},CM,y}$ (tCO ₂ /yr)	Baseline Emissions (tCO ₂ e)
01/10/2015-31/12/2015	36,132.160	68.400	0	36,063.760	1.05485	38,041
01/01/2016-31/12/2016	121,921.640	257.760	0	121,663.880	1.05485	128,337

01/01/2017-31/12/2017	127,296.160	252.440	0	127,043.720	1.05485	134,012
01/01/2018-31/12/2018	125,562.240	252.120	0	125,310.120	1.05485	132,183
01/01/2019-29/09/2019	93,048.200	192.920	0	92,855.280	1.05485	97,948
Total in this monitoring period	503,960.400	1023.640	0	502,936.760	1.05485	530,521

The monthly data are shown in appendix 1.

5.2 Project Emissions

According to the ACM0002, the emission of wind power project activity is zero, i.e. $PE_y=0$.

5.3 Leakage

According to ACM0002, the leakage of wind power project is not needed to be considered.

5.4 Net GHG Emission Reductions and Removals

In according with the registered PD

$$ER_y = BE_y - PE_y$$

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
01/10/2015-31/12/2015	38,041	0	0	38,041
01/01/2016-31/12/2016	128,337	0	0	128,337

01/01/2017-31/12/2017	134,012	0	0	134,012
01/01/2018-31/12/2018	132,183	0	0	132,183
01/01/2019-29/09/2019	97,948	0	0	97,948
Total	530,521			530,521

The emission reductions in the registered PD are 123757tCO₂e/yr. This monitoring period is from 01/10/2015 to 29/09/2019(1460days). The ex-ante estimated ER for this monitoring period are $123757/365 \times 1460 = 495,028\text{tCO}_2$. And the actual ER for this monitoring period is 530,521tCO₂, which is 7.17% larger than the ex-ante estimation. This will not influence the additionality. As per the registered PD, when electricity increases 21.13%, the IRR would reach the benchmark of 8%.

The first reason for the increase of electricity generation is mainly because that the wind volume is greater than the estimation. The second reason is that the operation and management skills are improved.

APPENDIX: < MONTHLY ELECTRICITY >

Period	Electricity delivered by the Project to the grid (EG _{PJtoGRID,y})			Electricity imported by the Project from the grid via main transmission line (EG _{GRIDtoPJ,y})			Electricity imported by the Project from the grid via backup line (EG _{10kVtoPJ,y})	Net electricity generation that is produced and fed into the grid (EG _{PJ,y})	EF _{grid,C} M,y (tCO ₂ /MWh)	BE (tCO ₂)
	Electricity from main meter readings (MWh)	Electricity from ETN (MWh)	Conservative data for ER calculation (MWh)	Electricity from main meter readings (MWh)	Electricity from ETN (MWh)	Conservative value for ER calculation (MWh)				
	A	B	C=min(A,B)	D	E	F=max(D,E)	G	H=C-F-G	I	J=H*I
01/10/2015-31/10/2015	10,068.960	10,018.960	10,018.960	30.360	34.360	34.360	0	9984.600		
01/11/2015-30/11/2015	13,840.200	13,767.200	13,767.200	22.440	24.440	24.440	0	13742.760		
01/12/2015-31/12/2015	12,375.000	12,346.000	12,346.000	6.600	9.600	9.600	0	12336.400		
Total in 2015	36,284.160	36,132.160	36,132.160	59.400	68.400	68.400	0	36,063.760	1.05485	38041
01/01/2016-31/01/2016	12,619.200	12,539.200	12,539.200	9.240	10.240	10.240	0	12528.960		
01/02/2016-28/02/2016	6,709.560	6,692.560	6,692.560	25.080	27.080	27.080	0	6665.480		
01/03/2016-31/03/2016	12,089.880	12,053.880	12,053.880	36.960	41.960	41.960	0	12011.920		
01/04/2016-30/04/2016	11,544.720	11,513.720	11,513.720	26.400	28.400	28.400	0	11485.320		
01/05/2016-31/05/2016	15,234.120	15,191.120	15,191.120	3.960	7.960	7.960	0	15183.160		
01/06/2016-30/06/2016	6,489.120	6,476.120	6,476.120	2.640	3.640	3.640	0	6472.480		
01/07/2016-31/07/2016	7,361.640	7,322.640	7,322.640	2.640	4.640	4.640	0	7318.000		
01/08/2016-31/08/2016	6,243.600	6,228.600	6,228.600	39.600	40.600	40.600	0	6188.000		
01/09/2016-30/09/2016	6,714.840	6,703.840	6,703.840	33.000	37.000	37.000	0	6666.840		

01/10/2016-31/10/2016	11,28 7.320	11,24 3.320	11,24 3.320	11.880	16.8 80	16.88 0	0	11226 .440		
01/11/2016-30/11/2016	10,35 1.440	10,27 8.440	10,27 8.440	25.080	30.0 80	30.08 0	0	10248 .360		
01/12/2016-31/12/2016	15,72 1.200	15,67 8.200	15,67 8.200	5.280	9.28 0	9.280	0	15668 .920		
Total in 2016	122,3 66.64 0	121,9 21.64 0	121,9 21.64 0	221.76 0	257. 760	257.7 60	0	121,6 63.88 0	1.054 85	128 337
01/01/2017-31/01/2017	13,22 5.080	13,21 2.080	13,21 2.080	10.560	14.5 60	14.56 0	0	13197 .520		
01/02/2017-28/02/2017	9,032. 760	8,946. 760	8,946. 760	26.400	29.4 00	29.40 0	0	8917. 360		
01/03/2017-31/03/2017	15,67 1.040	15,61 8.040	15,61 8.040	36.960	40.9 60	40.96 0	0	15577 .080		
01/04/2017-30/04/2017	11,95 5.240	11,89 6.240	11,89 6.240	18.480	22.4 80	22.48 0	0	11873 .760		
01/05/2017-31/05/2017	15,96 6.720	15,88 5.720	15,88 5.720	5.280	7.28 0	7.280	0	15878 .440		
01/06/2017-30/06/2017	5,752. 560	5,681. 560	5,681. 560	2.640	3.64 0	3.640	0	5677. 920		
01/07/2017-31/07/2017	7,715. 400	7,651. 400	7,651. 400	2.640	3.64 0	3.640	0	7647. 760		
01/08/2017-31/08/2017	6,544. 560	6,456. 560	6,456. 560	42.240	44.2 40	44.24 0	0	6412. 320		
01/09/2017-30/09/2017	7,038. 240	6,969. 240	6,969. 240	34.320	36.3 20	36.32 0	0	6932. 920		
01/10/2017-31/10/2017	9,830. 040	9,744. 040	9,744. 040	11.880	15.8 80	15.88 0	0	9728. 160		
01/11/2017-30/11/2017	10,84 9.080	10,79 3.080	10,79 3.080	25.080	29.0 80	29.08 0	0	10764 .000		
01/12/2017-31/12/2017	14,47 6.440	14,44 1.440	14,44 1.440	3.960	4.96 0	4.960	0	14436 .480		
Total in 2017	128,0 57.16 0	127,2 96.16 0	127,2 96.16 0	220.44 0	252. 440	252.4 40	0	127,0 43.72 0	1.054 85	134 012
01/01/2018-31/01/2018	13,46 7.960	13,38 3.960	13,38 3.960	11.880	14.8 80	14.88 0	0	13369 .080		
01/02/2018-28/02/2018	7,161. 000	7,076. 000	7,076. 000	26.400	29.4 00	29.40 0	0	7046. 600		
01/03/2018-31/03/2018	12,90 3.000	12,83 6.000	12,83 6.000	33.000	34.0 00	34.00 0	0	12802 .000		
01/04/2018-30/04/2018	9,119. 880	9,033. 880	9,033. 880	17.160	19.1 60	19.16 0	0	9014. 720		
01/05/2018-31/05/2018	16,25 9.760	16,24 3.760	16,24 3.760	3.960	6.96 0	6.960	0	16236 .800		
01/06/2018-30/06/2018	5,858. 160	5,809. 160	5,809. 160	3.960	7.96 0	7.960	0	5801. 200		
01/07/2018-31/07/2018	7,856. 640	7,816. 640	7,816. 640	2.640	6.64 0	6.640	0	7810. 000		
01/08/2018-31/08/2018	6,664. 680	6,575. 680	6,575. 680	44.880	47.8 80	47.88 0	0	6527. 800		
01/09/2018-30/09/2018	7,167. 600	7,113. 600	7,113. 600	34.320	38.3 20	38.32 0	0	7075. 280		

01/10/2018-31/10/2018	12,04 7.640	11,96 6.640	11,96 6.640	11.880	12.8 80	12.88 0	0	11953 .760		
01/11/2018-30/11/2018	11,04 8.400	10,96 1.400	10,96 1.400	22.440	24.4 40	24.44 0	0	10936 .960		
01/12/2018-31/12/2018	16,77 8.520	16,74 5.520	16,74 5.520	6.600	9.60 0	9.600	0	16735 .920		
Total in 2018	126,3 33.24 0	125,5 62.24 0	125,5 62.24 0	219.12 0	252. 120	252.1 20	0	125,3 10.12 0	1.054 85	132 183
01/01/2019-31/01/2019	14,55 9.600	14,53 4.600	14,53 4.600	9.240	12.2 40	12.24 0	0	14522 .360		
01/02/2019-28/02/2019	7,741. 800	7,683. 800	7,683. 800	26.400	28.4 00	28.40 0	0	7655. 400		
01/03/2019-31/03/2019	13,94 9.760	13,92 6.760	13,92 6.760	30.360	31.3 60	31.36 0	0	13895 .400		
01/04/2019-30/04/2019	9,859. 080	9,808. 080	9,808. 080	15.840	17.8 40	17.84 0	0	9790. 240		
01/05/2019-31/05/2019	17,57 8.440	17,51 7.440	17,51 7.440	5.280	8.28 0	8.280	0	17509 .160		
01/06/2019-30/06/2019	6,333. 360	6,305. 360	6,305. 360	2.640	3.64 0	3.640	0	6301. 720		
01/07/2019-31/07/2019	8,494. 200	8,476. 200	8,476. 200	5.280	7.28 0	7.280	0	8468. 920		
01/08/2019-31/08/2019	7,204. 560	7,133. 560	7,133. 560	42.240	46.2 40	46.24 0	0	7087. 320		
01/09/2019-29/09/2019	7,748. 400	7,662. 400	7,662. 400	35.640	37.6 40	37.64 0	0	7624. 760		
Total in 2019	93,46 9.200	93,04 8.200	93,04 8.200	172.92 0	192. 920	192.9 20	0	92,85 5.280	1.054 85	979 48
Total in this monitoring period	506,5 10.40 0	503,9 60.40 0	503,9 60.40 0	893.64 0	1023 .640	1023. 640	0	502,9 36.76 0		530, 521