



**Verified Carbon
Standard**

YUXIAN BAIYANTUO 49.3 MW WIND POWER PROJECT

Document Prepared by Beijing Ruifang Technology Co., Ltd.

Project Title	Yuxian Baiyantuo 49.3 MW Wind Power Project
Version	02
Report ID	/
Date of Issue	11/03/2020
Project ID	808
Monitoring Period	25/06/2012 to 31/05/2018
Prepared By	Teng Haipeng Beijing Ruifang Technology Co., Ltd.
Contact	Address: Haidian District, Beijing, 100083, China Email: Teng_hp@126.com

CONTENTS

1	PROJECT DETAILS.....	4
1.1	Summary Description of the Implementation Status of the Project	4
1.2	Sectoral Scope and Project Type	4
1.3	Project Proponent	4
1.4	Other Entities Involved in the Project	5
1.5	Project Start Date	5
1.6	Project Crediting Period	5
1.7	Project Location	6
1.8	Title and Reference of Methodology	6
1.9	Participation under other GHG Programs.....	7
1.10	Other Forms of Credit.....	7
1.11	Sustainable Development.....	7
2	SAFEGUARDS.....	8
2.1	No Net Harm	8
2.2	Local Stakeholder Consultation	9
2.3	AFOLU-Specific Safeguards	10
3	IMPLEMENTATION STATUS	10
3.1	Implementation Status of the Project Activity	11
3.2	Deviations.....	11
3.3	Grouped Projects	12
4	DATA AND PARAMETERS.....	12
4.1	Data and Parameters Available at Validation	12
4.2	Data and Parameters Monitored.....	15
4.3	Monitoring Plan.....	16
5	QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS	17
5.1	Baseline Emissions	17
5.2	Project Emissions	19
5.3	Leakage.....	19
5.4	Net GHG Emission Reductions and Removals.....	19

APPENDIX: < MONTHLY BASELINE EMISSIONS>	21
---	----

1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

Yuxian Baiyantuo 49.3 MW Wind Power Project (hereinafter referred to as the project) is developed by Hebei Construction Investment Yuzhou Wind Energy Co., Ltd. It is located at the southwest of Yuxian County, Hebei Province, P. R. China.

The project install 58 sets of wind turbine, each of which has a rated installed capacity of 850 kW, providing a total installed capacity of 49.3 MW. The electricity generated by the project is supplied to North China Grid (NCPG) and the annual output of the project is estimated to be 104,713.2 MWh.

North China Grid is dominated by thermal power plants. In the absence of the Project, equivalent amount of annual power output to the Project will be generated and supplied by NCPG. This is the same with the baseline scenario of the Project. It is expected that the Project as a renewable energy source will generate emission reductions of about 99,501 tCO_{2e} per year by avoiding CO₂ emissions from the same amount of electricity generation from North China Grid, which is mainly composed of traditional thermal power plants.

The project started operation on 16/12/2010. This monitoring period is from 25/06/2012-31/05/2018 (2167days). The total net electricity supplied to the grid by the project in this monitoring period are 676769.620MWh and the emission reductions in this monitoring period are 643046tCO₂.

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	Hebei Construction Investment Yuzhou Wind Energy Co., Ltd
Contact person	Du Guang
Title	Manager

Address	Room No. 801, Tower A, Yuyuan Plaza, No.9 Yuhua West Road, Shijiazhuang City, Hebei Province
Telephone	+86-311-85518612
Email	cdmhecic@gmail.com

1.4 Other Entities Involved in the Project

Organization name	Beijing Ruifang Technology Co., Ltd.
Role in the Project	Project participant
Contact person	Teng Haipeng
Title	Manager
Address	Haidian District, Beijing, 100083, China
Telephone	+86-10-86291231
Email	Teng_hp@126.com

1.5 Project Start Date

16/12/2010 (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 16/12/2010 to 15/12/2020 (10years, renewable). Therefore, the total crediting period under VCS would have been from 16/12/2010 to 15/12/2040 (30 years). However, the project was registered under CDM on 01/06/2011. And the total crediting period under CDM is from 01/06/2011 to 31/05/2031 (21years).

According to VCS standard, the total crediting period under VCS is from 16/12/2010 to 31/05/2031.

1.7 Project Location

The Project is located in Yu County, Zhangjiakou City, Hebei Province, P.R.China. The center of the Project has geographical coordinates with east longitude of 114°33'06" and north latitude of 39°40'32". Figure 1 shows the location of Hebei Province. Figure 2 shows the location of Zhangjiakou City. Figure 3 shows the location of the Project.

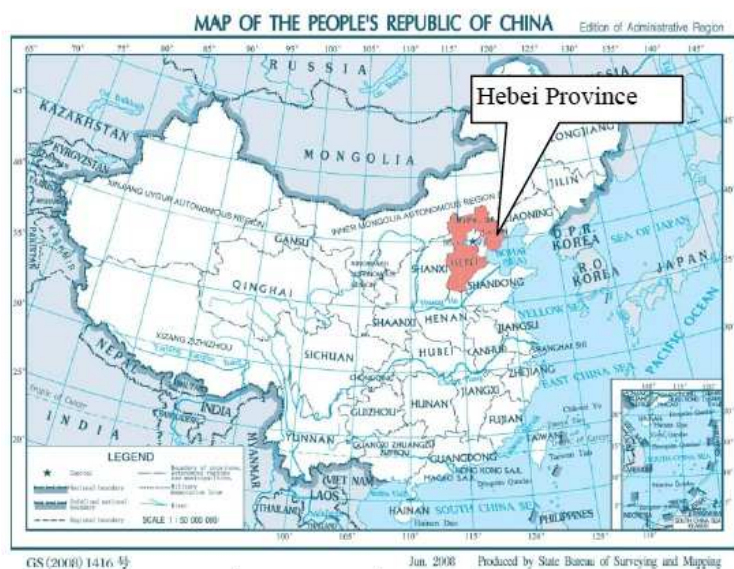


Figure 1. Location of Hebei Province



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” (Version 12.1.0).

The methodology also refers to the following tools:

Tool to calculate the emission factor for an electricity system (Version 02.1.0);

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 01/06/2011 with registration number of 4817. It has been issued one time under CDM mechanism, with monitoring period from 01/06/2011 to 24/06/2012.

1.10 Other Forms of Credit

The project has been registered as a CDM project on 01/06/2011, the first crediting period is from 01/06/2011 to 31/05/2018(7years, renewable). It has been issued one time under CDM mechanism, with monitoring period from 01/06/2011 to 24/06/2012.

The emission reductions from 25/06/2012 to 31/05/2018 has not been and will not be counted or claimed under other GHG programs.

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, the host country and the world by means of:

- reducing greenhouse gas emissions compared to a business-as-usual scenario;
- 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 EIA Form was approved by Environmental Protection Bureau of Hebei Province on 31/03/2009 (Document No. JHB [2009]47). According to the EIA 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 the construction period and the operation period of the Project is mainly domestic waste water of workers. A small quantity 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 the operation period will be collected and treated in waste water treatment facilities. Then, all the water satisfying safety standards will be reused for the greening and ecological restoration of the wind farm area, without being discharged outside. Thus, the domestic waste water will not have any 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 will meet the requirement of Noise Limits for Construction Site (GB12523-90). The noises 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 will meet the requirement of Category I of Emission Standard for Industrial Enterprises Noise at Boundary (GB12348-2008).

Solid waste

The solid waste produced during the construction period is mainly spoil, construction waste, domestic waste etc. The spoil will be immediately transported to dump sites. The construction waste and the domestic waste will be transported to the waste disposal site of Yu County by the environmental sanitation administrative department for sanitary landfill. During the operation period of the Project, the domestic waste will be collected and periodically transported to the waste disposal site of Yu 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 any impact on the surroundings.

Ecological impact

Damage to the vegetation caused by permanent land occupation of the Project will be compensated correspondingly. And the damage to vegetation will be recovered in another place with the same area and quality. By taking measures of vegetation recovery and compensation, the Project will have no impact on local ecological environment. Moreover, the main 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.

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 impacted by the Project. In November 2009, 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 50 questionnaires distributed to the stakeholders, 50 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?
- Where will the necessities of construction of the Project be shown from the view of stakeholders?
- 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 50 questionnaires received:

- 47 respondents (94%) have a certain or very good understanding of the Project and 3 respondents (6%) haven't heard of the Project.
- 49 respondents (98%) support the construction of the Project and 1 respondent (2%) keeps a neutral attitude.
- For the necessities of construction of the Project, 30 respondents (60%) think that the construction of the Project could possibly increase the electricity supplied to the grid, 26 respondents (52%) think that the construction of the Project could possibly improve local employments opportunities, 31 responds (62%) think that the construction of the Project could possibly increase local revenues

and 2 respondents(4%) think that the construction of the Project could possibly promote local environmental protection.

· For the positive impacts possibly caused by the implementation of the Project, 12 respondents (24%) think that the implementation of the Project could possibly enhance the available electricity supply to local residents. 10 respondents (20%) think that the implementation of the Project could possibly improve the income of local residents. 27 respondents (54%) think that the implementation of the Project could possibly increase employment opportunities for local residents. 23 respondents (46%) think that the implementation of the Project could possibly improve local living standards. None of the respondents put forward any other positive impact possibly caused by the implementation of the Project.

·For the negative impacts possibly caused by the implementation of the Project, 26 respondents (52%) think that the implementation of the Project could possibly cause land occupation. 10 respondents (20%) think that the implementation of the Project could possibly result in noise. 5 respondents (10%) think that the implementation of the Project could possibly have a negative impact on birds' survival environment. 6 respondents (12%) think that the implementation of the Project could possibly destroy local ecological environment. None of the respondents put forward other negative impact caused by the implementation of the Project.

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

For the issues of noise, birds' survival environment and local ecological environment considered by the respondents, corresponding prevention and control measures have been analyzed in Section D.1 of the PDD. For the issue of land occupation considered by the respondents, the Project will not result in 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 EIA Form.

For continuous communication with local stakeholders, the project owner public its office telephone to local people and put a grievance book in the office of the company. Anyone who have comments on the project could write on the book or leave message by phone. And after these years' operation, no negative comments were received from local people.

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 total installed capacity of the Project is 49.3 MW equipped with 58 sets of wind turbines with a unit installed capacity of 850 kW. The estimated net electricity supplied to North China Grid by the Project is 104,713.2 MWh per year and the plant load factor is 0.2424. Electricity generated by the Project is supplied to North China Grid via a 110 kV transmission line. The technical parameters of the project are shown in table 1.

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

Equipment	Quantity	Type	Technical parameters	Data sources
Turbine	35 sets	G52-850 kW (Low Temperature)	Rated power: 850 kW Quantity of blades: 3 Rotor diameter: 52 m Rotor speed: 14.6~30.8 r/min Lifetime: 20 years	Technical Specification and nameplate
	23 sets	G58-850 kW (Low Temperature)	Rated power: 850 kW Quantity of blades: 3 Rotor speed: 14.6~30.8 r/min Rotor diameter: 58 m Lifetime: 20 yrs	

The Project started construction on 10/05/2010 and commissioning on 16/12/2010. During this monitoring period, the monitoring system of the Project was implemented in line with the monitoring plan.

The wind farm had a good running, no equipment is overhauled or replaced in this monitoring period.

No events or emergency occurred during the monitoring period, which may impact the emission reductions and monitoring.

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, 2006-2008
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, 2006-2008
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, 2006-2008
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 Electric Power Yearbook, 2006-2008
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	$NCV_{i,y}$
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 2008
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 2007 (taken as efficiency level of the best technology commercially available in China)
Source of data	Announcement to Publish 2009 Baseline Emission Factors for Regional Power Grids in China
Value applied	322.5
Justification of choice of data or description of measurement methods and procedures applied	The data obtained from Announcement to Publish 2009 Baseline Emission Factors for Regional Power Grids in China made publicly available by China's DNA 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	Announcement to Publish 2009 Baseline Emission Factors for Regional Power Grids in China
Value applied	246
Justification of choice of data or description of measurement methods and procedures applied	The data obtained from Announcement to Publish 2009 Baseline Emission Factors for Regional Power Grids in China made publicly available by China's DNA are reliable.

measurement methods and procedures applied	
Purpose of Data	Calculation of baseline emissions
Comments	/

4.2 Data and Parameters Monitored

Data / Parameter	EG _{facility,y}				
Data unit	MWh				
Description	Quantity of net electricity generation supplied 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	Continuously measured by one bi-directional meter installed on the 35 kV transmission line at the Project Site and monthly recorded.				
Frequency of monitoring/recording	Continuously measurement and monthly recording				
Value monitored	676769.620				
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 record is crosschecked with sales receipts. The main information is shown below:				
	Type	Serial No.	Accuracy	Calibration Date	Valid date
	311B	94316769	0.2S	28/01/2012	27/01/2013
				22/01/2013	21/01/2014
				17/01/2014	16/01/2015
				12/01/2015	11/01/2016
				05/01/2016	04/01/2017

			29/12/2016	28/12/2017
			22/12/2017	21/12/2018
Purpose of the data	Calculation of baseline emissions			
Calculation method	/			
Comments	/			

4.3 Monitoring Plan

1. Monitoring data

The ex-ante determined baseline emission factor will be adopted. The quantity of net electricity generation supplied by the Project ($EG_{\text{facility},y}$) will be monitored. It is monitored by one bi-directional meter installed at the project site. The electricity volume is monitored continuously and recorded monthly. The difference between the electricity exported to grid and the electricity imported from the grid is the net electricity supply.

2. Monitoring System Organization Chart

The monitoring system is shown in Figure 4.



Figure 4. Monitoring structure

The Project Manager is responsible for implementation and supervision of the monitoring activity and liaison in this CDM 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

The quantity of net electricity generation supplied by the Project ($EG_{\text{facility},y}$) is measured continuously by one bi-directional meter installed on the 35 kV transmission line at the Project Site and monthly recorded by the staff.

If there exists difference between the monitored data and the data on electricity sales receipt(s), the conservative values will be used to estimate 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 will be regularly copied and archived and kept at least for 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 or two years after the last issuance, whichever is later.

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 precision of the meter employed by the Project will be 0.2s.

6. Procedure of emergency handling

In case the main 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 jointly determined by the Project Owner and the power grid company. A conservative and reasonable estimate of the readings shall be determined and conservative values 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)

$EG_{\text{facility},y}$ is the net electricity supplied to the grid by the project (MWh)

$EF_{\text{grid},CM,y}$ is the CO₂ emission factor of the grid 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 exported to the grid (MWh)	Electricity imported from the grid (MWh)	Net Electricity supplied to Grid ($EG_{\text{facility},y}$) (MWh)	$EF_{\text{grid},CM,y}$ (tCO ₂ /yr)	Baseline Emissions (tCO ₂ e)
25/06/2012-31/12/2012	37957.040	95.600	37861.440	0.950225	35,974
01/01/2013-31/12/2013	115163.280	148.730	115014.550	0.950225	109,284
01/01/2014-31/12/2014	111283.020	139.670	111143.350	0.950225	105,605
01/01/2015-31/12/2015	111843.240	185.390	111657.850	0.950225	106,094
01/01/2016-31/12/2016	116164.520	197.670	115966.850	0.950225	110,188
01/01/2017-31/12/2017	119592.420	192.060	119400.360	0.950225	113,450
01/01/2018-31/12/2018	65771.320	46.100	65725.220	0.950225	62,451
Total in this monitoring period	677774.840	1005.220	676769.620	0.950225	643,046

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)
25/06/2012-31/12/2012	35,974	0	0	35,974
01/01/2013-31/12/2013	109,284	0	0	109,284
01/01/2014-31/12/2014	105,605	0	0	105,605
01/01/2015-31/12/2015	106,094	0	0	106,094
01/01/2016-31/12/2016	110,188	0	0	110,188
01/01/2017-31/12/2017	113,450	0	0	113,450
01/01/2018-31/05/2018	62,451	0	0	62,451
Total	643,046			643,046

The emission reductions in the registered PD are 99501tCO₂e/yr. This monitoring period is from 25/06/2012 to 31/05/2018 (2167days). The ex-ante estimated ER for this monitoring period are $99501/365 \times 2167 = 590736\text{tCO}_2$. And the actual ER for this monitoring period is 643046tCO₂, which is 8.9% larger than the ex-ante estimation. This will not influence the additionality. As per the registered PD, when electricity increases 27.4%, 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 larger than the estimation of project designing. The second reason is that the operation skill is improved and plant management is better than before.

APPENDIX: < MONTHLY BASELINE EMISSIONS>

From	To	Electricity exported to the grid			Electricity imported from the grid			BE		
		Meter readings	Sales receipt	min(meter readings, sales receipt)	Meter readings	Sales receipt	max(meter readings, sales receipt)	Net Electricity supplied to Grid (EGfacility,y) (MWh)	EFgrid, CM,y (tCO ₂ /yr)	Baseline Emissions (tCO ₂ e)
		D(MWh)	E(MWh)	F=Min(D,E)	J(MWh)	K(MWh)	L=Max(J,K)	M=F-L	N	O=M*N
25/06/2012	24/07/2012	3,664.500	3,643.500	3643.500	8.820	8.900	8.900	3634.600	0.950225	3453
25/07/2012	24/08/2012	2,835.420	2,765.420	2765.420	17.640	17.730	17.730	2747.690	0.950225	2610
25/08/2012	24/09/2012	3,412.920	3,382.920	3382.920	19.320	19.360	19.360	3363.560	0.950225	3196
25/09/2012	24/10/2012	6,780.060	6,718.060	6718.060	19.320	19.330	19.330	6698.730	0.950225	6365
25/10/2012	24/11/2012	8,616.720	8,598.720	8598.720	10.080	10.090	10.090	8588.630	0.950225	8161
25/11/2012	24/12/2012	10,466.820	10,434.820	10434.820	15.960	15.970	15.970	10418.850	0.950225	9900
25/12/2012	31/12/2012	2,448.600	2413.600	4.200	4.220	4.220	2409.380	2409.380	0.950225	2289
Total in 2012		38225.040	37957.040	37957.040	95.340	95.600	95.600	37861.440		35974
01/01/2013	31/01/2013	13,146.000	13,093.000	13093.000	12.600	12.620	12.620	13080.380	0.950225	12429
01/02/2013	28/02/2013	13,436.640	13,388.640	13388.640	7.980	9.990	9.990	13378.650	0.950225	12712
01/03/2013	31/03/2013	13,400.940	13,371.940	13371.940	6.300	6.400	6.400	13365.540	0.950225	12700
01/04/2013	30/04/2013	11,802.840	11,741.840	11741.840	3.780	3.800	3.800	11738.040	0.950225	11153
01/05/2013	31/05/2013	10,229.100	10,185.100	10185.100	7.140	7.170	7.170	10177.930	0.950225	9671
01/06/2013	30/06/2013	8,258.460	8,195.460	8195.460	8.820	8.830	8.830	8186.630	0.950225	7779
01/07/2013	31/07/2013	3,992.520	3,959.520	3959.520	11.760	11.800	11.800	3947.720	0.950225	3751
01/08/2013	31/08/2013	4,881.660	4,823.660	4823.660	13.860	13.870	13.870	4809.790	0.950225	4570
01/09/2013	30/09/2013	6,916.980	6,869.980	6869.980	12.600	12.690	12.690	6857.290	0.950225	6515
01/10/2013	31/10/2013	8,790.600	8,729.600	8729.600	5.040	5.130	5.130	8724.470	0.950225	8290
01/11/2013	30/11/2013	10,678.500	10,661.500	10661.500	18.900	18.980	18.980	10642.520	0.950225	10112
01/12/2013	31/12/2013	10,211.040	10,143.040	10143.040	37.380	37.450	37.450	10105.590	0.950225	9602
Total in 2013		115745.280	115163.280	115163.280	146.160	148.730	148.730	115014.550	0.950225	109284

01/01/2014	31/01/2014	13,834.380	13,802.380	13802.380	6.720	6.730	6.730	13795.650	0.950225	13108
01/02/2014	28/02/2014	9,419.340	9,392.340	9392.340	18.900	18.990	18.990	9373.350	0.950225	8906
01/03/2014	31/03/2014	14,094.360	14,039.360	14039.360	3.360	3.380	3.380	14035.980	0.950225	13337
01/04/2014	30/04/2014	12,036.780	12,018.780	12018.780	3.780	3.860	3.860	12014.920	0.950225	11416
01/05/2014	31/05/2014	8,718.360	8,696.360	8696.360	7.140	7.230	7.230	8689.130	0.950225	8256
01/06/2014	30/06/2014	6,812.400	6,785.400	6785.400	10.920	10.970	10.970	6774.430	0.950225	6437
01/07/2014	31/07/2014	4,249.980	4,179.980	4179.980	13.020	13.100	13.100	4166.880	0.950225	3959
01/08/2014	31/08/2014	5,350.800	5,298.800	5298.800	10.500	10.510	10.510	5288.290	0.950225	5025
01/09/2014	30/09/2014	7,053.900	6,994.900	6994.900	15.120	15.160	15.160	6979.740	0.950225	6632
01/10/2014	31/10/2014	8,964.900	8,899.900	8899.900	10.080	10.120	10.120	8889.780	0.950225	8447
01/11/2014	30/11/2014	10,889.760	10,825.760	10825.760	20.580	20.640	20.640	10805.120	0.950225	10267
01/12/2014	31/12/2014	10,413.060	10,349.060	10349.060	18.900	18.980	18.980	10330.080	0.950225	9815
Total in 2014		111838.020	111283.020	111283.020	139.020	139.670	139.670	111143.350	0.950225	105605
01/01/2015	31/01/2015	14,237.580	14,194.580	14194.580	7.140	7.230	7.230	14187.350	0.950225	13481
01/02/2015	28/02/2015	9,693.600	9,631.600	9631.600	18.480	18.550	18.550	9613.050	0.950225	9134
01/03/2015	31/03/2015	14,505.120	14,467.120	14467.120	3.360	3.420	3.420	14463.700	0.950225	13743
01/04/2015	30/04/2015	12,387.060	12,369.060	12369.060	3.780	3.800	3.800	12365.260	0.950225	11749
01/05/2015	31/05/2015	8,972.040	8,932.040	8932.040	7.560	7.620	7.620	8924.420	0.950225	8480
01/06/2015	30/06/2015	4,923.660	4,886.660	4886.660	9.240	9.260	9.260	4877.400	0.950225	4634
01/07/2015	31/07/2015	3,935.820	3,868.820	3868.820	18.480	18.520	18.520	3850.300	0.950225	3658
01/08/2015	31/08/2015	5,254.200	5,227.200	5227.200	24.360	24.400	24.400	5202.800	0.950225	4943
01/09/2015	30/09/2015	7,259.280	7,202.280	7202.280	20.160	20.170	20.170	7182.110	0.950225	6824
01/10/2015	31/10/2015	9,225.720	9,211.720	9211.720	10.500	10.570	10.570	9201.150	0.950225	8743
01/11/2015	30/11/2015	11,206.860	11,180.860	11180.860	23.100	23.160	23.160	11157.700	0.950225	10602
01/12/2015	31/12/2015	10,716.300	10,671.300	10671.300	38.640	38.690	38.690	10632.610	0.950225	10103
Total in 2015		112317.240	111843.240	111843.240	184.800	185.390	185.390	111657.850	0.950225	106094
01/01/2016	31/01/2016	15,043.560	14,984.560	14984.560	7.140	7.220	7.220	14977.340	0.950225	14231
01/02/2016	29/02/2016	10,242.540	10,189.540	10189.540	28.140	28.230	28.230	10161.310	0.950225	9655
01/03/2016	31/03/2016	15,326.220	15,273.220	15273.220	3.360	3.380	3.380	15269.840	0.950225	14509
01/04/2016	30/04/2016	13,088.460	13,039.460	13039.460	4.200	4.220	4.220	13035.240	0.950225	12386

01/05/2016	31/05/2016	9,479.820	9,439.820	9439.820	7.560	7.650	7.650	9432.170	0.950225	8962
01/06/2016	30/06/2016	4,145.820	4,129.820	4129.820	9.240	9.260	9.260	4120.560	0.950225	3915
01/07/2016	31/07/2016	3,807.720	3,747.720	3747.720	18.900	18.970	18.970	3728.750	0.950225	3543
01/08/2016	31/08/2016	4,961.040	4,913.040	4913.040	24.780	24.870	24.870	4888.170	0.950225	4644
01/09/2016	30/09/2016	7,670.460	7,625.460	7625.460	20.580	20.640	20.640	7604.820	0.950225	7226
01/10/2016	31/10/2016	9,748.200	9,734.200	9734.200	10.500	10.530	10.530	9723.670	0.950225	9239
01/11/2016	30/11/2016	11,841.480	11,797.480	11797.480	23.520	23.600	23.600	11773.880	0.950225	11187
01/12/2016	31/12/2016	11,323.200	11,290.200	11290.200	39.060	39.100	39.100	11251.100	0.950225	10691
Total in 2016		116678.520	116164.520	116164.520	196.980	197.670	197.670	115966.850	0.950225	110188
01/01/2017	31/01/2017	15,446.340	15,380.340	15380.340	7.140	7.180	7.180	15373.160	0.950225	14607
01/02/2017	28/02/2017	10,516.800	10,484.800	10484.800	25.200	25.290	25.290	10459.510	0.950225	9938
01/03/2017	31/03/2017	15,736.560	15,696.560	15696.560	3.780	3.860	3.860	15692.700	0.950225	14911
01/04/2017	30/04/2017	13,439.160	13,387.160	13387.160	4.200	4.210	4.210	13382.950	0.950225	12716
01/05/2017	31/05/2017	9,733.920	9,719.920	9719.920	7.980	8.000	8.000	9711.920	0.950225	9228
01/06/2017	30/06/2017	4,256.700	4,197.700	4197.700	9.660	9.680	9.680	4188.020	0.950225	3979
01/07/2017	31/07/2017	3,293.640	3,253.640	3253.640	19.320	19.350	19.350	3234.290	0.950225	3073
01/08/2017	31/08/2017	5,964.420	5,933.420	5933.420	25.620	25.700	25.700	5907.720	0.950225	5613
01/09/2017	30/09/2017	7,875.840	7,864.840	7864.840	21.000	21.020	21.020	7843.820	0.950225	7453
01/10/2017	31/10/2017	10,009.020	9,987.020	9987.020	10.920	10.940	10.940	9976.080	0.950225	9479
01/11/2017	30/11/2017	12,158.580	12,128.580	12128.580	24.360	24.410	24.410	12104.170	0.950225	11501
01/12/2017	31/12/2017	11,626.440	11,558.440	11558.440	32.340	32.420	32.420	11526.020	0.950225	10952
Total in 2017		120057.420	119592.420	119592.420	191.520	192.060	192.060	119400.360	0.950225	113450
01/01/2018	31/01/2018	15,715.140	15,648.140	15648.140	7.560	7.640	7.640	15640.500	0.950225	14861
01/02/2018	28/02/2018	10,699.920	10,665.920	10665.920	21.420	21.500	21.500	10644.420	0.950225	10114
01/03/2018	31/03/2018	16,010.400	15,944.400	15944.400	4.620	4.630	4.630	15939.770	0.950225	15146
01/04/2018	30/04/2018	13,672.680	13,660.680	13660.680	4.200	4.280	4.280	13656.400	0.950225	12976
01/05/2018	31/05/2018	9,903.180	9,852.180	9852.180	7.980	8.050	8.050	9844.130	0.950225	9354
Total in 2018		66001.320	65771.320	65771.320	45.780	46.100	46.100	65725.220	0.950225	62451
Total in this monitoring period		680862.840	677774.840	677774.840	999.600	1005.220	1005.220	676769.620	0.950225	643046