Gold standard for the global goals
Monitoring report

June 2017, version 1

Title of the project	CECIC HKC Danjinghe Wind Farm Power project
Gold Standard project id	6753
Version number of the monitoring report	2.0
Completion date of the monitoring report	10/09/2020
Date of project design certification	08/04/2019
Start date of crediting period	08/04/2017
Duration of this monitoring period	01/10/2018 – 31/07/2020
Duration of previous monitoring period	08/04/2017- 30/09/2018
Project representative(s)	CECIC HKC Wind Power Co., Ltd. P.R. China (host); A-Carbon International B.V., Netherlands (Buyer)
Host Country	China
Certification pathway (activity certification/impact certification)	Impact certification
SDG Contributions targeted (as per approved PDD)	1 – SDG 7 Affordable And Clean Energy 2 – SDG 8 Decent Work And Economic Growth 3 – SDG 13 Climate action
Gold Standard statement/product certification sought (GSVER/ADALYs/RECs etc.)	GSCER
Selected methodology(ies)	ACM0002: "Grid- connected electricity generation from renewable sources", Version 19.0
Estimated amount of annual average certified SDG impact (as per approved PDD)	SDG7 – 438,550 MWh/yr SDG8 – 100% of the employees have access to training, health care, insurances and better income SDG13 – 395,001 tCO_2/yr
Total amount of certified SDG impact (as per approved methodology) achieved in this monitoring period	SDG7 – 853,184.640 MWh SDG8 – 40 persons in 2018, 2019 and 2020 SDG13 – 768,461 tCO_2

SECTION A. Description of project

A.1. Purpose and general description of project

The purpose of the CECIC HKC Danjinghe Wind Farm Project (hereinafter referred as "the Project") is to generate renewable electricity using wind power resources and to sell the generated output to the North China Power Grid (NCPG) on the basis of a power purchase agreement (PPA). The project activity generates greenhouse gas (GHG) emission reductions by avoiding CO_2 emissions from electricity generation by fossil fuel power plants that is supplied to NCPG.

The project activity involves the installation and operation 54 wind turbines of 750kW, 100 wind turbines of 800kW and 53 wind turbines of 1500kW. Therefore, the total installed capacity of proposed wind farm is 200MW. Total of 438,550MWh clean electricity generated by the Project are expected to be delivered to the NCPG annually. Accordingly, the estimated annual GHG emission reductions of the Project are 395,001 tCO_2e.

The Project started construction on 11/05/2007. The first wind turbine of the Project started commissioning on 21/01/2009. The Project was in full operation on 13/04/2010.

This monitoring period of the Project is from 01/10/2018 to 31/07/2020. The total emission reductions of this monitoring period are 768,461tCO_2e.

A.2. Location of project

The Project site is located Zhangbei County, Zhangjiakou City, Hebei Province in the People's Republic of China. It is located at Latitude between 41°05′00″ and 42°12′47″, Longitude between 114°16′56″and 114°25′11″. More details are shown as the following Figure 1.

Figure 1 The location of the project activity

A.3. Reference of applied methodology

1. The approved large-scale consolidated methodology ACM0002: "Grid-connected electricity generation from renewable sources" (Version 19.0);

2. The approved "Tool to calculate the emission factor for an electricity system" (Version 07.0).
Further information pertaining to the methodology can be obtained at:
http://cdm.unfccc.int/methodologies/PAmethodologies/approved.html

A.4. Crediting period of project

The crediting period of CDM project is 3*7 renewable crediting periods. The start and end dates of the crediting period corresponding to this morning period are 29 /12/2015 and 28 /12/2022.

The crediting period for GS-CERs is 3*5 renewable crediting periods. The start and end dates of the crediting period corresponding to this monitoring period are respectively 08/04/2017 and 07 /04/2022.

SECTION B. Implementation of project

B.1. Description of implemented project

The Project started construction on 11/05/2007. The first wind turbine of the Project started commissioning on 21/01/2009. The Project was put into full operation on 13/04/2010. The electricity generated by the Project is delivered to NCPG.

During this monitoring period, the Project was operated and implemented in accordance with the registered PDD. Neither emergencies (including of overhaul times, downtimes of equipment, exchange of equipment, etc.) happened to the monitoring system in this monitoring period, nor events or situations occurred during the monitoring period, which may impact the applicability of the methodology.

The project has installed and operated 54 wind turbines of 750kW, 100 wind turbines of 800kW and 53 wind turbines of 1500kW. The selected turbines were manufactured by Zhejiang Windey Wind Generating Engineering Co. Ltd. The detailed parameters of selected turbines are provided in the following Table1:

Table 1 Key Technology to be employed at the Project Wind Farm

Key Technology Parameter	WD49/750KW	WD54/800KW	WD77/1500KW
Rotor diameter (m)	49	54	77
Swept area (m2)	1886	2290	4656
Number of Paddles	3	3	3
Rated rotor speed (rpm)	15	15	15
Cut-in wind speed (m/s)	3.5	3.5	3.5
Rated wind speed (m/s)	15	15	15
Cut-out wind speed (m/s)	23	25	20
Hub height of the wind turbines (m)	65	65	65
Total Capacity (MW)	40.5	80	79.5
Number of turbines	54	100	53
Rated Voltage	690	690	690
Manufacture	Zhejiang Windey Wind Generating Engineering Co. Ltd.		

No events or situation that occurred during the monitoring period, which may impact the GHG emission reductions or removals and monitoring.

B.2. Post-registration changes

B.2.1. Temporary deviations from Certified Key Project Information, Project Design Document, Monitoring & Reporting Plan, applied methodology or applied standardized baseline

There are no temporary deviations from the monitoring plan or applied methodology to this project.

B.2.2. Corrections

There is no correction during this monitoring period.

B.2.3. Changes to start date of crediting period

There is no change to the start date of the crediting period.

B.2.4. Permanent changes from registered monitoring plan, applied methodology or applied standardized baseline

No permanent changes from registered monitoring plan and applied methodology.

B.2.5. Changes to project design of approved project

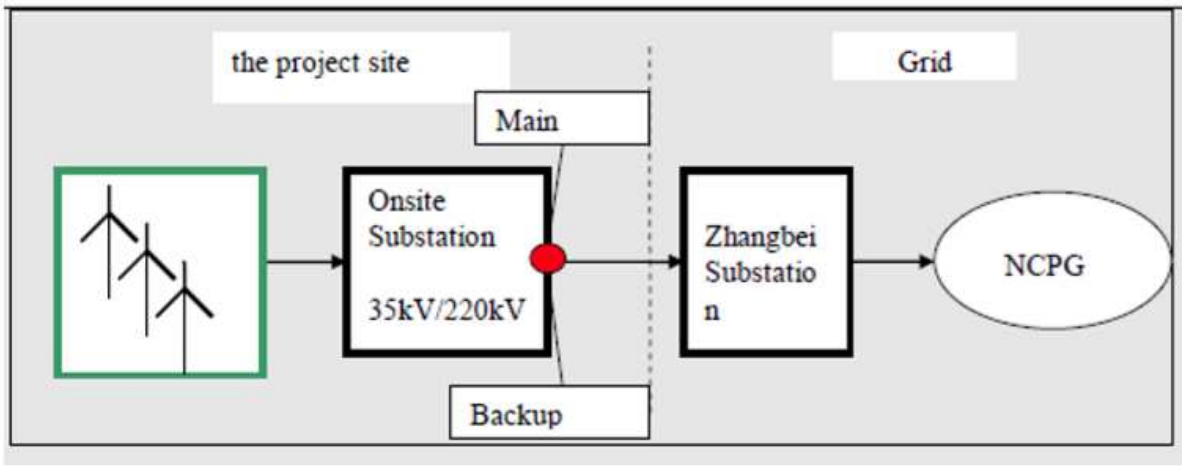
No changes to project design of approved project.

SECTION C. Description of monitoring system applied by the project

1. Data collection and management

Data generation and aggregation:

The net electricity generation of the Project was monitored through the main metering equipment installed at output side of the onsite substation, recording exports to the grid (supply) and imports from the grid (consumption). Net generation supplied is calculated as exports minus imports. The data were monitored continuously, and the results were recorded and supplied by the grid company to the developer monthly. The cut-off time is 24:00 of last day of each month during the crediting period. The monitoring points are shown as below:



Data calculation:

As described in the monitoring plan, the net electricity supplied to the grid by the project ($EG_{facility,y}$) can be calculated as:

$EG_{facility,y} = EG_{export,y} - EG_{import,y}$

Where:

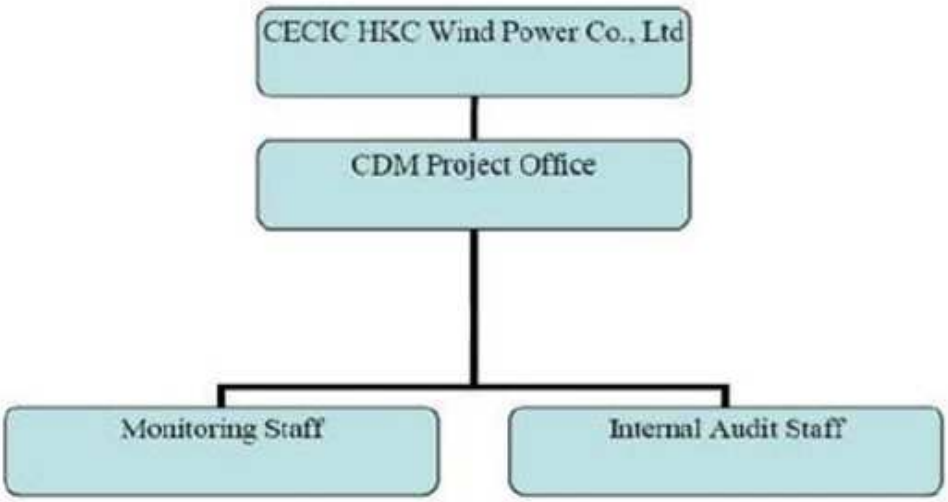
$EG_{facility,y}$ is the net electricity supplied to the grid by the project in year y;

$EG_{export,y}$ is the electricity exported to the grid by the project in year y;

$EG_{import,y}$ is the electricity imported from the grid by the project in year y.

2. Organizational structure and responsibilities

Overall responsibility for monitoring and carrying out the monitoring following this monitoring plan lies with CECIC HKC Wind Power Co., Ltd. The CDM Manager of CECIC HKC Wind Power Co., Ltd is responsible for the monitoring and reporting of the wind farm. The net generated electricity from this project is monitored and recorded using one main meter and one backup meter. They are both installed at the output side of the onsite substation. The meter readings are used for both CDM purposes and sales of the electricity generated to the grid company. The CDM operating and management structure is illustrated as follows:



3. Emergency Procedures

Should any previous month's reading of the main meter be inaccurate by more than the allowable error, or otherwise functioned improperly, the net generation output shall be determined by: (a) first, by reading backup meter, unless a test by either party reveals it is inaccurate; (b) if the backup system is not with acceptable limits of accuracy or operation is performed improperly the CECIC HKC Wind Power Co., Ltd and the NCPG shall jointly prepare a reasonable and conservative estimate of the correct reading, and provide sufficient evidence that this estimation is reasonable and conservative when DOE undertakes verification; and (c) if the NCPG and CECIC HKC Wind Power Co., Ltd fail to agree then the matter would be referred for arbitration according to agreed procedures.

SECTION D. Data and parameters

D.1. Data and parameters fixed ex ante or at renewal of crediting period

Relevant SDG Indicator	SDG 7- Affordable And Clean Energy. Indicator 7.2.1 Renewable energy share in the total final energy consumption 7.3.1 Energy intensity measured in terms of primary energy and GDP
Data/parameter:	$FC_{i,y}$
Unit	Mass or volume unit
Description	Amount of fossil fuel type i consumed in the NCPG in year y.
Source of data	China energy statistical yearbooks, 2012-2014
Value(s) applied)	See Appendix 4
Choice of data or measurement methods and procedures	The data obtained from the official publication China energy statistical yearbook, satisfying the requirement of latest version of Tool to calculate the emission factor for an electricity system version 07.0
Purpose of data	Calculation of baseline emissions
Additional comments	-

Relevant SDG Indicator	SDG 7- Affordable And Clean Energy. Indicator 7.2.1 Renewable energy share in the total final energy consumption 7.3.1Energy intensity measured in terms of primary energy and GDP
Data/parameter:	$NCV_{i,y}$
Unit	GJ/mass or volume unit
Description	Net calorific value (energy content) of fuel type i in year y.
Source of data	China energy statistical yearbooks, 2012-2014
Value(s) applied)	See Appendix 4
Choice of data or measurement methods and procedures	The data obtained from the official publication China energy statistical yearbook, satisfying the requirement of latest version of Tool to calculate the emission factor for an electricity system version 07.0.
Purpose of data	Calculation of baseline emissions
Additional comments	-

Relevant SDG Indicator	SDG 7- Affordable and Clean Energy. Indicator 7.2.1 Renewable energy share in the total final energy consumption 7.3.1Energy intensity measured in terms of primary energy and GDP
Data/parameter:	$EF_{CO2,i,y}$
Unit	tCO_2/GJ
Description	CO_2 emission factor of fuel type i in year y.
Source of data	2006 IPCC guidelines on national GHG inventories, Volume 2 Energy, Chapter 1, table1.3-table 1.4
Value(s) applied)	See Appendix 4

Choice of data or measurement methods and procedures	Regional or national average default values are unavailable, so IPCC default values at the lower limit of the uncertainty at a 95% confidence interval are used, satisfying the requirement of latest version of Tool to calculate the emission factor for an electricity system version 07.0.
Purpose of data	Calculation of baseline emissions
Additional comments	-

Relevant SDG Indicator	SDG 7- Affordable and Clean Energy. Indicator 7.2.1 Renewable energy share in the total final energy consumption 7.3.1Energy intensity measured in terms of primary energy and GDP
Data/parameter:	GEN_y
Unit	MWh
Description	Electricity generated by all power sources serving North China Power Grid in year y.
Source of data	China electric power yearbooks
Value(s) applied)	See Appendix 4
Choice of data or measurement methods and procedures	Regional or national average default values are unavailable, so IPCC default values at the lower limit of the uncertainty at a 95% confidence interval are used, satisfying the requirement of latest version of Tool to calculate the emission factor for an electricity system version 07.0.
Purpose of data	Calculation of baseline emissions
Additional comments	-

Relevant SDG Indicator	SDG 7- Affordable and Clean Energy. Indicator 7.2.1 Renewable energy share in the total final energy consumption 7.3.1Energy intensity measured in terms of primary energy and GDP
Data/parameter:	AER_y
Unit	%
Description	Auxiliary electricity consumption rate of all power sources serving North China Power Grid.
Source of data	China electric power yearbooks, 2012-2014
Value(s) applied)	See Appendix 4
Choice of data or measurement methods and procedures	Regional or national average default values are unavailable, so IPCC default values at the lower limit of the uncertainty at a 95% confidence interval are used, satisfying the requirement of latest version of Tool to calculate the emission factor for an electricity system version 07.0.
Purpose of data	Calculation of baseline emissions
Additional comments	-

Relevant SDG Indicator	SDG 7- Affordable and Clean Energy. Indicator 7.2.1 Renewable energy share in the total final energy consumption 7.3.1Energy intensity measured in terms of primary energy and GDP
Data/parameter:	$F_{i,j,y}$
Unit	mass or volume unit
Description	Consumption of fuel i in province j in year y.
Source of data	China electric power yearbooks, 2012-2014
Value(s) applied)	See Appendix 4
Choice of data or measurement methods and procedures	The data obtained from the official publication China energy statistical yearbook, satisfying the requirement of latest version of Tool to calculate the emission factor for an electricity system version 07.0.
Purpose of data	Calculation of baseline emissions
Additional comments	-

Relevant SDG Indicator	SDG 7- Affordable and Clean Energy. Indicator 7.2.1 Renewable energy share in the total final energy consumption 7.3.1Energy intensity measured in terms of primary energy and GDP
Data/parameter:	$EF_{Coal,Adv,y}$
Unit	tCO2/MWh
Description	Emission factor of the best efficiency, commercially available coal-fired generation technology.
Source of data	2015 baseline emission factors for regional power grids in China published by China DNA
Value(s) applied)	0.7483
Choice of data or measurement methods and procedures	The data obtained from the China DNA, satisfying the requirement of latest version of Tool to calculate the emission factor for an electricity system version 07.0.
Purpose of data	Calculation of baseline emissions
Additional comments	-

Relevant SDG Indicator	SDG 7- Affordable and Clean Energy. Indicator 7.2.1 Renewable energy share in the total final energy consumption 7.3.1Energy intensity measured in terms of primary energy and GDP
Data/parameter:	$EF_{Oil,Adv,y}$
Unit	tCO_2/MWh
Description	Emission factor of the best efficiency, commercially available oil-fired generation technology.
Source of data	2015 baseline emission factors for regional power grids in China published by China DNA

Value(s) applied)	0.5138
Choice of data or measurement methods and procedures	The data obtained from the China DNA, satisfying the requirement of latest version of Tool to calculate the emission factor for an electricity system version 07.0.
Purpose of data	Calculation of baseline emissions
Additional comments	-

Relevant SDG Indicator	SDG 7- Affordable and Clean Energy. Indicator 7.2.1 Renewable energy share in the total final energy consumption 7.3.1Energy intensity measured in terms of primary energy and GDP
Data/parameter:	$EF_{Gas,Adv,y}$
Unit	tCO_2/MWh
Description	Emission factor of the best efficiency, commercially available gas-fired generation technology.
Source of data	2015 baseline emission factors for regional power grids in China published by China DNA
Value(s) applied)	0.3695
Choice of data or measurement methods and procedures	The data obtained from the China DNA, satisfying the requirement of latest version of Tool to calculate the emission factor for an electricity system version 07.0
Purpose of data	Calculation of baseline emissions
Additional comments	-

Relevant SDG Indicator	SDG 7- Affordable and Clean Energy. Indicator 7.2.1 Renewable energy share in the total final energy consumption 7.3.1Energy intensity measured in terms of primary energy and GDP
Data/parameter:	$CAP_{Total,y}$
Unit	MW
Description	Total installed capacity in North China Power Grid in year y
Source of data	China electric power yearbooks, 2012-2014
Value(s) applied)	See Appendix 4
Choice of data or measurement methods and procedures	The data obtained from the China DNA, satisfying the requirement of latest version of Tool to calculate the emission factor for an electricity system version 07.0
Purpose of data	Calculation of baseline emissions
Additional comments	-

Relevant SDG Indicator	SDG 7- Affordable and Clean Energy. Indicator 7.2.1 Renewable energy share in the total final energy consumption 7.3.1Energy intensity measured in terms of primary energy and GDP
Data/parameter:	$CAP_{Thermal,y}$
Unit	MW
Description	Total installed capacity of thermal power in North China Power Grid in year y
Source of data	China electric power yearbooks, 2012-2014
Value(s) applied)	See Appendix 4
Choice of data or measurement methods and procedures	The data obtained from the China DNA, satisfying the requirement of latest version of Tool to calculate the emission factor for an electricity system version 07.0
Purpose of data	Calculation of baseline emissions
Additional comments	-

D.2. Data and parameters monitored

Relevant SDG Indicator	SDG 8-Decent work and economic growth Indicator 8.3.1 Proportion of informal employment in non-agriculture employment, by sex.
Data/parameter:	$N_{employment}$
Unit	/
Description	The decent work provided by the project activity including safety protection measures and training. The annual training time for different person worked for the project, the number of youth people (15-24 years) and others.
Measured/calculated/default	Measured
Source of data	The payment of staff, Company management document, safety and ecology department annual reports, staff training certificates.
Value(s) of monitored parameter	40 employees in 2018 40 employees in 2019 40 employees in 2020

Year	$N_{employment}$	Proportion of informal employment in non agriculture by project activity	Female proportion	Proportion of trained people	The number of youth people (15-24) years
2018	40	52.50%	25%	100%	17
2019	40	47.5%	40%	100%	17
2020	40	47.50%	40%	100%	17

	Check finance data and training records.
Monitoring equipment	On site check for finance data and documents
Measuring/reading/recording frequency:	Annually
Calculation method	N/A

(if applicable):	
QA/QC procedures:	Check HR records and training records, and cross check from interview with project workers.
Purpose of data:	To monitor outcome of SDG 8
Additional comments:	/

Relevant SDG Indicator	SDG 8-Decent work and economic growth Indicator 8.7.1 Proportion and number of children aged 5-17 years engaged in child labour, by sex and age 8.8.1 Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status 8.8.2 Increase in national compliance of labour rights (freedom of association and collective bargaining) based on International Labour Organization (ILO) textual sources and national legislation, by sex and migrant status
Data/parameter:	Labour right and working environment
Unit	/
Description	Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status, the status of compliance of labour rights
Measured/calculated/default	measured
Source of data	Company management document, safety and ecology department records, staff training certificates.
Value(s) of monitored parameter	See table below
Monitoring equipment	On site check of finance data, HR documents, safety and ecology department records. Crosscheck with labour rights.
Measuring/reading/recording frequency:	Annually
Calculation method (if applicable):	N/A
QA/QC procedures:	Check the project owner's documents and cross check with different sources, and onsite interview with workers
Purpose of data:	To monitor outcome of SDG 8
Additional comments:	/

Year	2018	2019	2020
Proportion and number of children aged 5-17 years engaged in child labour, by sex and age	0	0	0
Frequency rates of fatal and nonfatal occupational injuries, by sex and migrant status	Not happened	Not happened	Not happened
Increase in national compliance of labour rights (freedom of association and collective bargaining) based on International Labour Organization (ILO) textual sources and national legislation, by sex and migrant status	Not reference	Not reference	Not reference
Labour right and working environment	Labour right and working environment provided by the project developer is one of best in local city.		

<table>
<tr><td>Relevant SDG Indicator</td><td>SDG8-Decent work and economic growth
Indicator
8.1.1 Annual growth rate real GDP per capita
8.2.1 Annual Growth rate of real GDP per employed person
8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities</td></tr>
<tr><td>Data/parameter:</td><td>Local county GDP indictor</td></tr>
<tr><td>Unit</td><td>%</td></tr>
<tr><td>Description</td><td>The revenue from the proposed project, VAT, VAT plus and income tax to show the local county economic growth, Annual growth rate of real GDP capita, Annual growth rate of real GDP per employed person and financial institutions numbers.</td></tr>
<tr><td>Measured/calculated/default</td><td>Measured</td></tr>
<tr><td>Source of data</td><td>Local county statistics, payment of workers</td></tr>
<tr><td>Value(s) of monitored parameter</td><td>
<table>
<tr><td>Year</td><td>2018[1]</td><td>2019[2]</td><td>2020[3]</td></tr>
<tr><td>Local city GDP Increase Rate</td><td>6.8%</td><td>7.6%</td><td>6.9%</td></tr>
<tr><td>People Increase Rate</td><td>0.4%</td><td>0.16%</td><td>0.12%</td></tr>
<tr><td>Income Increase Rate</td><td>11.4%</td><td>11.5%</td><td>10.7%</td></tr>
<tr><td>Hourly earnings for male employees</td><td>28-46RMB/h</td><td>28-46RMB/h</td><td>27-52 RMB/h</td></tr>
<tr><td>Hourly earnings for female employees</td><td>27-41 RMB/h</td><td>27-41 RMB/h</td><td>27-41 RMB/h</td></tr>
<tr><td>Hourly earnings for employees with age 21 years old to 30 years</td><td>27-37 RMB/h</td><td>27-37 RMB/h</td><td>27-37RMB/h</td></tr>
<tr><td>Hourly earnings for employees with age 30 years old to 36 years</td><td>30-46 RMB/h</td><td>30-46 RMB/h</td><td>29-52 RMB/h</td></tr>
<tr><td>Hourly earnings for operation employees</td><td>27-40 RMB/h</td><td>30-40 RMB/h</td><td>30-40 RMB/h</td></tr>
<tr><td>Hourly earnings for maintenance employees</td><td>30-41 RMB/h</td><td>30-41 RMB/h</td><td>30-41 RMB/h</td></tr>
<tr><td>Hourly earnings for accounting and management employees</td><td>35-46 RMB/h</td><td>35-46 RMB/h</td><td>35-46 RMB/h</td></tr>
<tr><td>Persons with disabilities</td><td colspan="3">According to Chinese regulation, company with above 5 employees should make a payment for person with disabilities every month for 2% of salary. So the project company which employs about 40 people will pay 2% of salary to help person with disability to get training or help.</td></tr>
</table>
</td></tr>
<tr><td>Monitoring equipment</td><td>Check from local government public data and company finance data</td></tr>
<tr><td>Measuring/reading/recording frequency:</td><td>Annually</td></tr>
<tr><td>Calculation method (if applicable):</td><td>N/A</td></tr>
<tr><td>QA/QC procedures:</td><td>Government pubic data</td></tr>
</table>

[1] http://tjj.zjk.gov.cn/Message.asp?AticleId=1026

[2] http://tjj.zjk.gov.cn/Message.asp?AticleId=1026

[3] http://tjj.zjk.gov.cn/Message.asp?AticleId=1026

Purpose of data:	To monitor outcome of SDG 8
Additional comments:	/

Relevant SDG Indicator	SDG 7- Affordable And Clean Energy SDG Indicator 7.2.1: Renewable energy share in the total final energy consumption 7.3.1Energy intensity measured in terms of primary energy and GDP SDG 13 –Climate change SDG Indicator 13.3.2 Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions
Data/parameter:	$EG_{facility,y}$
Unit	MWh
Description	The net electricity supplied to the grid by the project
Measured/calculated/default	Measured
Source of data	Both the electricity delivered to the grid by the proposed project ($EG_{export,y}$) and the power delivered from the grid ($EG_{import,y}$) will be monitored continuously through the two-way metering equipment at the onsite substation. Net electricity supplied to the grid ($EG_{facility,y}$) is calculated as exports minus imports. The results from the main meter will be recorded and supplied by the grid company to the developer monthly.
Value(s) of monitored parameter	853,184.640 MWh in this monitoring period. The detail value for $EG_{export,y}$ and $EG_{import,y}$ are shown in section E.1
Monitoring equipment	Monitored by electricity meters and recorded by project owner.
Measuring/reading/recording frequency:	Measured continuously and aggregated monthly
Calculation method (if applicable):	N/A
QA/QC procedures:	Monthly net generation data is approved and signed off by the project Manager before it is accepted and stored. The metering data is double checked by receipt of sales. Back-up meter is installed at the on-site substation and can be used for cross checking. The metering equipment are calibrated and checked according to the appropriate industry standards (Chinese electric industry regulation-DL/T448). The metering equipment shall have accuracy of 0.2s.
Purpose of data:	Calculation of baseline emissions
Additional comments:	/

D.3. Implementation of sampling plan

Not Applicable.

SECTION E. Calculation of SDG outcomes

E.1. Calculation of baseline value or estimation of baseline situation of each SDG outcome

>> (*Provide details of equations and approaches used to calculate/estimate baseline values.)*

<table>
<tr><th>Item</th><th>Baseline value</th></tr>
<tr><td>SDG 7</td><td>0 MWh</td></tr>
<tr><td>SDG 8</td><td>No employment and no trainings</td></tr>
<tr><td>SDG 13</td><td>As per the registered PDD, the baseline emissions are calculated:
$BEy = EG_{facility,y} \times EF_{grid,CM,y}$
where:
$EG_{facility,y}$ The net electricity supplied to the grid by the Project in year y (MWh);
$EF_{grid,CM,y}$ Combined Margin Emission Factor in year y (tCO_2/MWh)

$EG_{facility,y} = EG_{export,y} - EG_{import,y}$
$EG_{export,y}$. Electricity exported to the grid in year y
$EG_{import,y}$ Electricity imported from the grid in year y

The result of the Baseline Emission Factor ($EF_{grid,CM,y}$) calculation was 0.9007tCO_2e/MWh. Detailed calculation of Combined Margin Emission Factor was demonstrated in the registered PDD and EF calculation sheet that were provided to the DOE during the validation.

As the emission factor is fixed for the whole crediting period, the aim of the monitoring is therefore only to monitor the net electricity generated using energy meter. Both electricity imports and exports are monitored:

$EG_{facility,y} = EG_{export,y} - EG_{imported,y}$

$EG_{export,y}$: Electricity exported by the project activity to the plant

$EG_{imported,y}$: Electricity imported by the project activity from the grid

Thus, in this monitoring period:
BE_y = 853184.640MWh * 0.9007 tCO_2e/MWh = 768,461tCO_2e

The BE vintage in 2018, 2019 and 2020 are shown in following table.
<table>
<tr><th>Parameter</th><th>Description</th><th>Value in 2018 (92days)</th><th>value in 2019 (365days)</th><th>value in 2020 (213days)</th><th>Total</th></tr>
<tr><td>$EG_{export,y}$</td><td>Electricity exported by the project activity to the plant</td><td>122,208.240</td><td>472,264.320</td><td>261,352.08</td><td>855,824.640</td></tr>
<tr><td>$EG_{imported,y}$</td><td>Electricity imported by the project activity from the grid</td><td>588.720</td><td>1,380.720</td><td>670.560</td><td>2,640.000</td></tr>
<tr><td>$EG_{facility,y}$</td><td>Net electricity supplied to the grid by the project in year y</td><td>121,619.520</td><td>470,883.600</td><td>260,681.520</td><td>853,184.640</td></tr>
<tr><td>$EF_{grid,CM,y}$</td><td>Emission factor</td><td>0.9007</td><td>0.9007</td><td>0.9007</td><td>0.9007</td></tr>
<tr><td>BE_y</td><td>Total baseline emissions</td><td>109,542</td><td>424,124</td><td>234,795</td><td>768,461</td></tr>
</table>
</td></tr>
</table>

E.2. Calculation of project value or estimation of project situation of each SDG outcome

>> (*Provide details of equations and approaches used to calculate/estimate project values.)*

Item	Project value

<table>
<tr><td>SDG 7</td><td>Net electricity production by the project activity
$EG_{facility,y} = EG_{export,y} - EG_{imported,y}$

During this monitoring period (01/10/2018 to 31/07/2020):
<table>
<tr><td>$EG_{facility,y}$</td><td>Net electricity output by the project activity</td><td>853,184.640</td><td>MWh</td></tr>
<tr><td>$EG_{export,y}$</td><td>Electricity exported by the project activity to the plant</td><td>855,824.640</td><td>MWh</td></tr>
<tr><td>$EG_{imported,y}$</td><td>Electricity imported by the project activity from the grid</td><td>2,640.000</td><td>MWh</td></tr>
</table></td></tr>
<tr><td>SDG 8</td><td>1. $N_{employment,y}$
The provides 40 job opportunities in 2018, 2019 and 2020 for local people during the operation period. The job opportunities include duties in charge of equipment operation, maintenance and repair, and managing the whole plant. The project provides employment opportunities for those female people that is competent, and offer equal salary based on the similar job duties.

The project owner supplied trainings for employees each month on safety requirements and production skills. Exercises on safety production were also did during the trainings.

2. Incomes of employee and working environment
The project owner provides satisfying salary and working environment for all the employees. There is no children labor in this project. No injuries and no inconsistence with labor rights occurred during this monitoring period.</td></tr>
<tr><td>SDG 13</td><td>According to the applied methodology and the registered PDD, as a newly built wind project, the project emissions of this project are zero.
$PE_y = 0$</td></tr>
</table>

E.3. Calculation of net benefits as difference of baseline and project values or direct calculation for each SDG outcome

<table>
<tr><th>Item</th><th>Net benefit</th></tr>
<tr><td>SDG 7</td><td>Project value – Baseline value = 853,184.640- 0 =853,184.640 MWh</td></tr>
<tr><td>SDG 8</td><td>Project value – Baseline value = 40– 0 = 40 persons</td></tr>
<tr><td>SDG 13</td><td>For the leakage, according to ACM0002, no leakage emissions are considered.

Emission reductions of the project are calculated as follows:
$ER_y = BE_y - PE_y$ =768,461-0=768,461 tCO_2e

During this monitoring period (01/10/2018 to 31/07/2020):
<table>
<tr><th></th><th>Baseline GHG emissions or baseline net GHG removals (tCO_2e)</th><th>Project GHG emissions or actual net GHG removals (tCO_2e)</th><th>Leakage GHG emissions (tCO_2e)</th><th colspan="4">GHG emission reductions or net anthropogenic GHG removals (tCO_2e)</th></tr>
<tr><th></th><th></th><th></th><th></th><th>Vintage 2018</th><th>Vintage 2019</th><th>Vintage 2020</th><th>Total amount</th></tr>
<tr><td>Total</td><td>768,461</td><td>0</td><td>0</td><td>109,542</td><td>424,124</td><td>234,795</td><td>768,461</td></tr>
</table></td></tr>
</table>

E.4. Summary of ex-post values of each SDG outcome for the current monitoring period

Item	Baseline estimate	Project estimate	Net benefit
SDG 7	0	853,184.640MWh	853,184.640MWh
SDG 8	0	40persons	40 persons
SDG 13	768,461tCO_2e	0	768,461tCO_2e

E.5. Comparison of actual value of outcomes with estimates in approved PDD

Item	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period
SDG 7	805,009.589 MWh/yr	853,184.640MWh
SDG 8	40 persons	40 persons in 2018, 2019 and 2020
SDG 13	747,652 tCO_2e	768,461 tCO_2e

E.6. Remarks on difference from estimated value in approved PDD

Item	Remarks on difference
SDG 7	The actual net electricity supplied during the current monitoring period is 5.98% larger than expected amount as per the registered PDD. The reasons the electricity generation is larger than the estimation as per PDD are that, firstly, the wind resources are rich these years, while the value in the PDD was estimated by the historical wind resource. Secondly, the project management and operation skills are improved.
SDG 8	No significant difference
SDG 13	The actual ER during the current monitoring period is 5.98 larger than expected ERs as per the registered PDD.

SECTION F. Stakeholder inputs and legal disputes

F.1. List all inputs/grievances which have been received for the project during the monitoring period together with their respective answers/actions

The PO has implemented continuous input / grievance mechanism expression process, as discussed with local stakeholders. No inputs/grievances received for the project during this monitoring period.

	Method Chosen (include all known details e.g. location of book, phone, number, identity of mediator)	Justification
Continuous Input / Grievance Expression Process Book	Grievance expression book was put in the company office and local villages	kept by the office manager and leader of the villages
Telephone access	+86 10 8833 7332 (for project owner)	Local stakeholders can call the working staff of the project owner or GS expert to

	+86 158 1052 7065 (for GS expert)	express their comments, suggestion or even complaint.
Internet/email access	Dongjuan.chen@gmail.com (for project owner) info@goldstandard.org annyta.luo@sustain-cert.com (for GS expert)	Local stakeholders can send email to the project owner or GS expert to express their comments, suggestion or even complaint.

F.2. List all inputs/grievances from previous monitoring period where follow up action is to be verified in this monitoring period

No inputs/grievances from previous monitoring period where follow up action is to be verified in this monitoring period.

F.3. Provide details of any legal contest or dispute that has arisen with the project during the monitoring period

No legal contest or dispute that has arisen with the project during this monitoring period.