



**Monitoring report form for CDM project activity
(Version 06.0)**

Complete this form in accordance with the instructions attached at the end of this form.

MONITORING REPORT

Title of the project activity	CECIC HKC Danjinghe Wind Farm Power project	
UNFCCC reference number of the project activity	2170	
Version number of the PDD applicable to this monitoring report	2.0	
Version number of this monitoring report	1.0	
Completion date of this monitoring report	17 November 2018	
Monitoring period number	10 th Monitoring Period	
Duration of this monitoring period	1 October 2016- 30 September 2018	
Monitoring report number for this monitoring report	01.0	
Project participants	CECIC HKC Wind Power Co., Ltd. P.R. China (host); Vitol SA Switzerland (Buyer)	
Host Party	P.R. of China	
Sectoral scopes	Sectoral scope1, Energy Industries (renewable - /non-renewable sources)	
Applied methodologies and standardized baselines	The approved large-scale consolidated methodology ACM0002: "Grid-connected electricity generation from renewable sources" (Version 16.0.0), in effect as of EB 81"	
Amount of GHG emission reductions or net anthropogenic GHG removals achieved by the project activity in this monitoring period	Amount achieved before 1 January 2013	Amount achieved from 1 January 2013
	0	893,457
Amount of GHG emission reductions or net anthropogenic GHG removals estimated ex ante for this monitoring period in the PDD	893,457	

SECTION A. Description of project activity

A.1. General description of project activity

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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 CO₂ 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 407,303 tCO₂e.

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 01/10/2016 to 30/09/2018. The total emission reduction of the 9th monitoring period is: 893,457tCO₂e.

A.2. Location of project activity

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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.

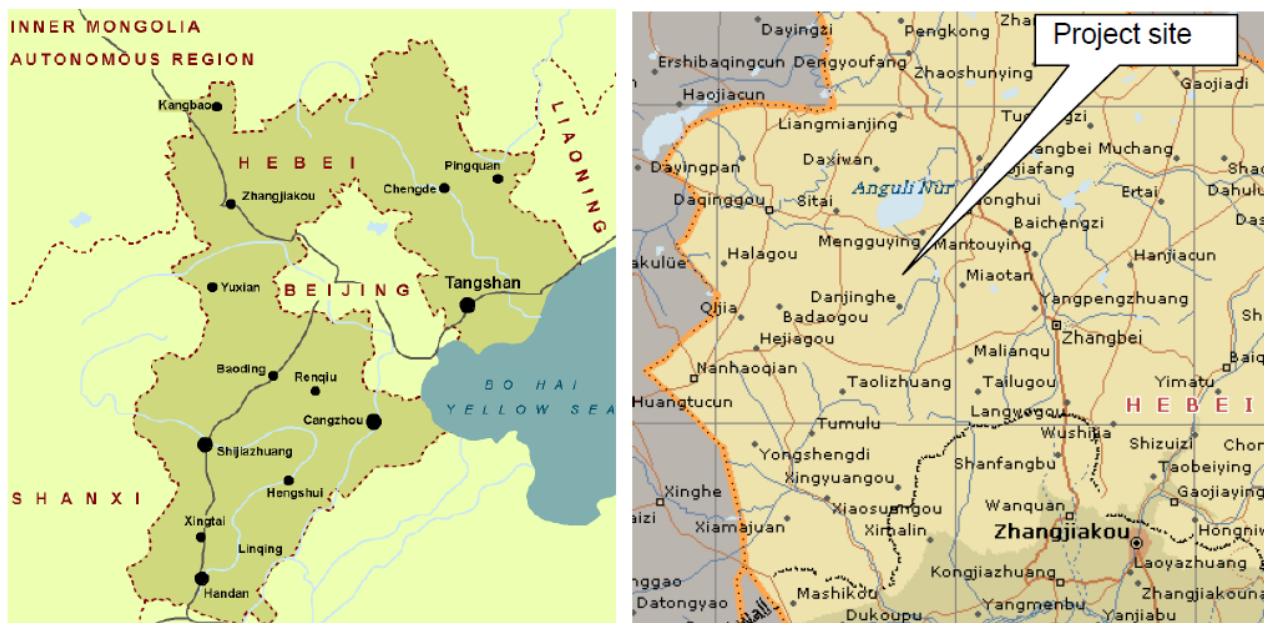


Figure 1 The location of the project activity

A.3. Parties and project participants

Parties involved	Project participants	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
The People's Republic of China (Host Country)	CECIC HKC Wind Power Co., Ltd.	Yes

Parties involved	Project participants	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
Switzerland (Buyer)	Vitol SA	Yes

A.4. Reference to applied methodologies and standardized baselines

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1. The approved large-scale consolidated methodology ACM0002: "Grid-connected electricity generation from renewable sources"(Version 16.0.0), in effect as of EB 81;
2. The approved "Tool for demonstration and assessment of additionality"(Version 02), in effect as of EB 16 and revised by EB 22
3. The project includes a newly built wind power plant, the baseline scenario was prescribed in the ACM0002 (Version 16.0.0) and the "Combined tool to identify the baseline and demonstrate additionality" (Version 05.0.0) does not need to be applied in the case of Greenfield projects as per ACM0002.
4. The approved "Tool to calculate the emission factor for an electricity system"(Version 04.0), in effect as of EB 75, and
5. The approved Methodological Tool "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period"(Version 03.0.1), in effect as of EB 66.

Further information pertaining to the methodology can be obtained at:
<http://cdm.unfccc.int/methodologies/PAmethodologies/approved.html>

A.5. Crediting period type and duration

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The crediting period is 3*7 renewable crediting periods. The start and end dates of the crediting period corresponding to this monitoring period are respectively 29 December 2015 and 28 December 2022.

SECTION B. Implementation of project activity

B.1. Description of implemented project activity

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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:

Table1 Technology parameter of WTGs for the Project

Key Technology Parameter	WD49/750KW	WD49/750KW	WD49/750KW
Rotor diameter (m)	49	54	77
Swept area(m ²)	1886	2290	4656
Number of paddles	3	3	3
Rated Rotate 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 turbine	54	100	53
Rated Voltage	690	690	690
Manufacturer	Zhejiang Windy Wind Generating Engineering Co.,Ltd.		

The total installed capacity of the Project is 200 MW. The electricity generated from the project was transmitted to Zhangbei substation of NCPG via 35kV/220kV transformer at the onsite substation. The following diagram shows the technical process:

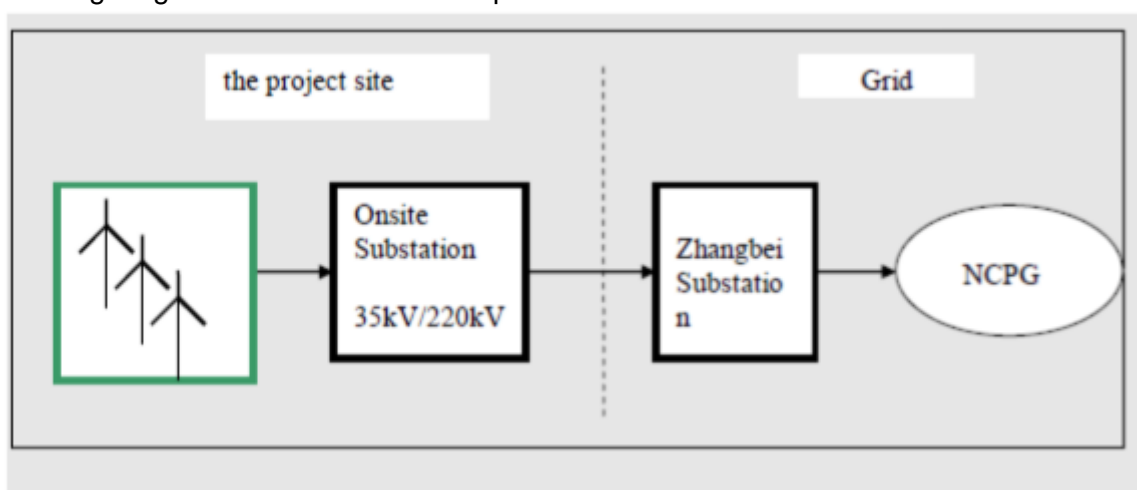


Figure 2: Grid connection of the project

B.2. Post-registration changes

B.2.1. Temporary deviations from the registered monitoring plan, applied methodologies or standardized baselines

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

B.2.2. Corrections

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There is no correction during this monitoring period.

B.2.3. Changes to the start date of the crediting period

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

B.2.4. Inclusion of monitoring plan

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There is no Inclusion of a monitoring plan to the registered PDD that was not included at registration during this monitoring period.

B.2.5. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other applied standards or tools

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There is no permanent change from the registered monitoring plan , applied methodologies or applied standardized baseline during this monitoring period.

B.2.6. Changes to project design

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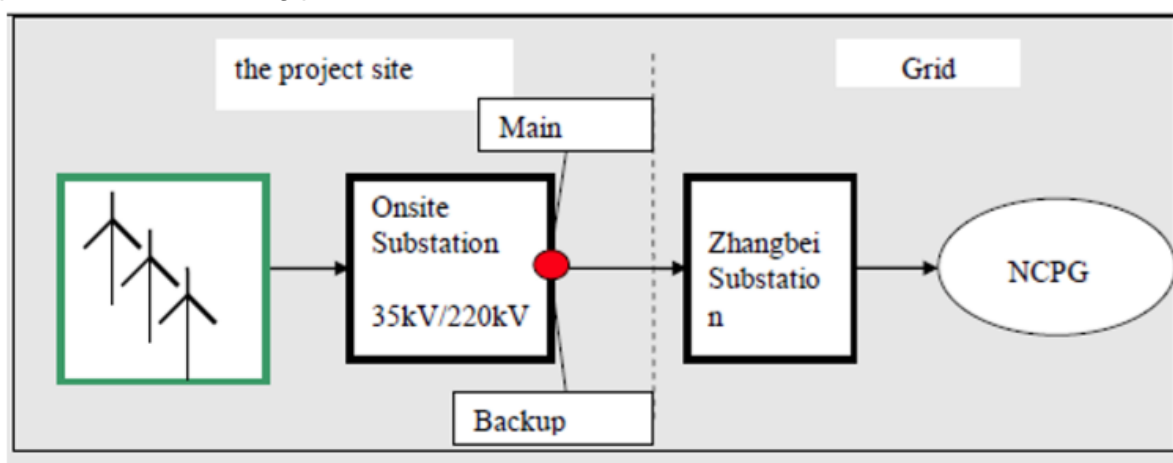
There is no any change to the project design of the project activity.

SECTION C. Description of monitoring system

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1. Data collection and management

- (1) 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:



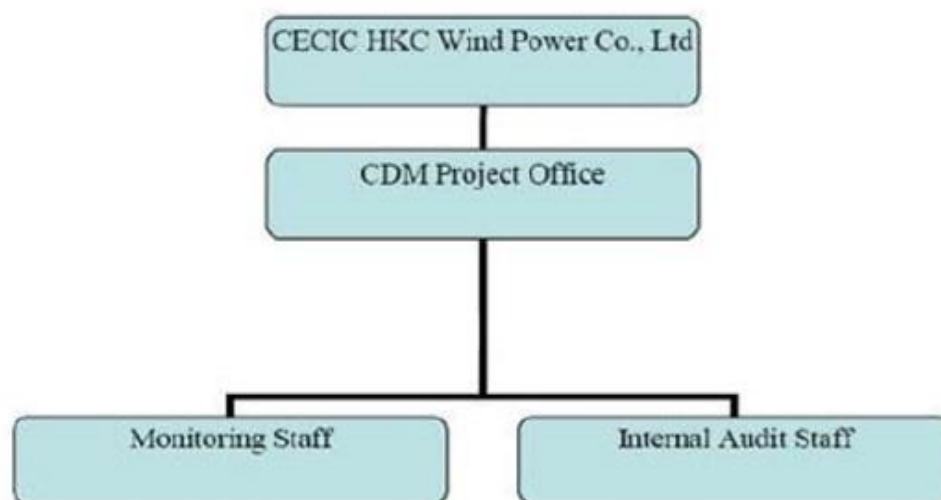
- (2) Data calculation:
 As described in the monitoring plan, the net electricity supplied to the grid by the project (EGy) can be calculated as:

$$EG_y = EG_{\text{export}} - EG_{\text{import}}$$
 Where: EGy is the net electricity supplied to the grid by the project;
 EGexport is the electricity exported to the grid by the project;
 EGimport is the electricity imported from the grid by the project.

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

(Copy this table for each data or parameter.)

Data/Parameter	$EF_{grid,CM,y}$
Unit	tCO ₂ e/MWh
Description	Emission factor which is determined ex-ante according to the applied methodology.
Source of data	The renewable crediting period registered PDD
Value(s) applied	0.92875
Choice of data or measurement methods and procedures	Fixed before project registration
Purpose of data/parameter	Baseline emissions calculations
Additional comments	N/A

D.2. Data and parameters monitored

(Copy this table for each data or parameter.)

Data/Parameter	EG_y
Unit	MWh

Description	Net electricity supplied to the grid by the project in period y						
Measured/calculated/default	Measured and calculation						
Source of data	Meter reading records of onsite main meters.						
Value(s) of monitored parameter	961,999.07						
Monitoring equipment	Meter	Type	Serial No	Accuracy	Calibration Date	Validity	Calibration Frequency
	Main	ZMQ	94291593	0.2s	2015-10-25,	Yes	Annually
	Backup	ZMQ	94291596	0.2s	2016-10-12, 2017-07-11, 2018-05-10	Yes	Annually
Measuring/reading/recording frequency	Measuring continuously/Reading monthly/Recording monthly						
Calculation method (if applicable)	$EG_y = EG_{\text{export}} - EG_{\text{import}}$ Net electricity supplied to the grid is calculated as exports minus imports						
QA/QC procedures	EG _y is calculated as EG _{export} minus EG _{import} , both of which are continuously measured by the main meter installed at the onsite Substation. Electricity Transaction Notes (ETNs) are issued by the grid to the project owner for confirmation of the electricity generation. Reading records were saved as both hard and electrical copy. The meter readings were also transferred via a remote transmission line to the grid company. The meters were calibrated according to the national standard. The calibration is carried out annually by a qualified organization with the records being supplied to the grid company and project owner.						
Purpose of data/parameter	Baseline emissions						
Additional comments	N/a						

D.3. Implementation of sampling plan

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Not applicable.

SECTION E. Calculation of emission reductions or net anthropogenic removals

E.1. Calculation of baseline emissions or baseline net removals

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The baseline emissions in year y is calculated as

$$BE_y = EG_y * EF_{\text{grid,CM}}$$

Period	EG _y (MWh)	EF _{grid,CM,y} (tCO _{2e})	BE _y (tCO _{2e})
01/10/2016-30/09/2018	961,999.07	0.92875	893,457

The detailed calculation of EG_y is calculated below: $EG_y = EG_{\text{export}} - EG_{\text{import}}$

Period	EG _{export} (MWh)			EG _{import} (MWh)			EG _y
	ETN	Invoices	Data for Calculation	ETN	Invoices	Data for Calculation	

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	A	B	C=min(A,B)	D	E	F=max(D,E)	G=C-F
01/10/2016-31/10/2016	36,274.461	36,274.460	36,274.460	78.43	78.43	78.43	36,196.03
01/11/2016-30/11/2016	54,637.408	54,637.408	54,637.408	348.45	348.45	348.45	54,288.96
01/12/2016-31/12/2016	37,018.414	37,018.414	37,018.414	122.01	122.01	122.01	36,896.41
From 01/10/2016 to 31/12/2016	127,930.283	127,930.282	127,930.282	548.89	548.89	548.89	127,381.39
01/01/2017-31/01/2017	41,371.074	41,371.074	41,371.074	102.08	102.08	102.08	41,268.99
01/02/2017-28/02/2017	37,189.492	37,189.492	37,189.492	38.72	38.72	38.72	37,150.77
01/03/2017-31/03/2017	59,958.316	59,958.316	59,958.316	84.48	84.48	84.48	59,873.84
01/04/2017-30/04/2017	42,942.546	42,942.546	42,942.546	44.00	44.00	44.00	42,898.55
01/05/2017-31/05/2017	37,951.696	37,951.696	37,951.696	68.64	68.64	68.64	37,883.06
01/06/2017-30/06/2017	19,612.875	19,612.875	19,612.875	149.60	149.60	149.60	19,463.28
01/07/2017-31/07/2017	17,835.582	17,835.582	17,835.582	119.68	119.68	119.68	17,715.90
01/08/2017-31/08/2017	31,645.809	31,645.809	31,645.809	79.20	79.20	79.20	31,566.61
01/09/2017-30/09/2017	27,611.420	27,611.420	27,611.420	86.24	86.24	86.24	27,525.18
01/10/2017-31/10/2017	24,821.333	24,821.333	24,821.333	110.88	110.88	110.88	24,710.45
01/11/2017-30/11/2017	58,089.854	58,089.854	58,089.854	47.52	47.52	47.52	58,042.33
01/12/2017-31/12/2017	56,778.839	56,778.840	56,778.839	75.68	75.68	75.68	56,703.16
Total in year 2017	455,808.836	455,808.837	455,808.836	1,006.72	1,006.72	1,006.72	454,802.12
01/01/2018-31/01/2018	44,266.170	44,266.170	44,266.170	128.48	128.48	128.48	44,137.69
01/02/2018-28/02/2018	50,295.076	50,295.076	50,295.076	35.20	35.20	35.20	50,259.88
01/03/2018-31/03/2018	42,787.141	42,787.141	42,787.141	73.92	73.92	73.92	42,713.22
01/04/2018-30/04/2018	48,607.515	48,607.515	48,607.515	73.92	73.92	73.92	48,533.60
01/05/2018-31/05/2018	37,225.364	37,225.364	37,225.364	73.92	73.92	73.92	37,151.44
01/06/2018-30/06/2018	43,953.866	43,953.866	43,953.866	35.20	35.20	35.20	43,918.67
01/07/2018-31/07/2018	46,415.790	46,415.790	46,415.790	127.60	127.60	127.60	46,288.19

01/08/2018-31/08/2018	30,044.741	30,044.741	30,044.741	348.48	348.48	348.48	29,696.26
01/09/2018-30/09/2018	37,251.256	37,251.256	37,251.256	134.64	134.64	134.64	37,116.62
From 01/01/2018 to 30/09/2018	380,846.919	380,846.919	380,846.919	1,031.36	1,031.36	1,031.36	379,815.56
Total in this monitoring period	964,586.038	964,586.038	964,586.037	2,586.97	2,586.97	2,586.97	961,999.07

E.2. Calculation of project emissions or actual net removals

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According to the applied methodology and the registered PDD, as a newly built wind project, the project emissions of this project are zero.

E.3. Calculation of leakage emissions

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According to the applied methodology and the registered PDD, as a renewable energy project, the leakage of this project is not considered.

E.4. Calculation of emission reductions or net anthropogenic removals

	Baseline GHG emissions or baseline net GHG removals (t CO ₂ e)	Project GHG emissions or actual net GHG removals (t CO ₂ e)	Leakage GHG emissions (t CO ₂ e)	GHG emission reductions or net anthropogenic GHG removals (t CO ₂ e)		
				Before 01/01/2013	From 01/01/2013	Total amount
Total	893,457	0	0	0	893,457	893,457

E.5. Comparison of emission reductions or net anthropogenic removals achieved with estimates in the registered PDD

Amount achieved during this monitoring period (t CO ₂ e)	Amount estimated ex ante (t CO ₂ e)
893,457	814,606

E.6. Remarks on increase in achieved emission reductions

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The actual GHG emission reductions achieved is 9.68% greater than the amount based on the ex ante estimation in the registered PDD.

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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
06.0	7 June 2017	Revision to: <ul style="list-style-type: none"> • Ensure consistency with version 01.0 of the “CDM project standard for project activities” (CDM-EB93-A04-STAN); • Make editorial improvements.
05.1	4 May 2015	Editorial revision to correct version numbering.
05.0	1 April 2015	Revisions to: <ul style="list-style-type: none"> • Include provisions related to delayed submission of a monitoring plan; • Provisions related to the Host Party; • Remove reference to programme of activities; • Overall editorial improvement.
04.0	25 June 2014	Revisions to: <ul style="list-style-type: none"> • Include the Attachment: Instructions for filling out the monitoring report form (these instructions supersede the "Guideline: Completing the monitoring report form" (Version 04.0)); • Include provisions related to standardized baselines; • Add contact information on a responsible person(s)/ entity(ies) for completing the CDM-MR-FORM in A.6 and Appendix 1; • Change the reference number from <i>F-CDM-MR</i> to <i>CDM-MR-FORM</i>; • Editorial improvement.
03.2	5 November 2013	Editorial revision to correct table in page 1.
03.1	2 January 2013	Editorial revision to correct table in section E.5.
03.0	3 December 2012	Revision required to introduce a provision on reporting actual emission reductions or net GHG removals by sinks for the period up to 31 December 2012 and the period from 1 January 2013 onwards (EB 70, Annex 11).
02.0	13 March 2012	Revision required to ensure consistency with the "Guidelines for completing the monitoring report form" (EB 66, Annex 20).
01.0	28 May 2010	EB 54, Annex 34. Initial adoption.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: monitoring report		