Monitoring report form for CDM project activity
(Version 08.0)

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

MONITORING REPORT			
Title of the project activity	Inner Mongolia Shangdu Changshengliang Wind Farm Project		
UNFCCC reference number of the project activity	5311		
Version number of the PDD applicable to this monitoring report	05		
Version number of this monitoring report	01		
Completion date of this monitoring report	30/08/2021		
Monitoring period number	1st monitoring period of the 2nd crediting period		
Duration of this monitoring period	08/11/2018-20/12/2020 (first and last days included)		
Monitoring report number for this monitoring period	NA		
Project participants	Beijing Beineng Chuangye Wind Power Technology Co., Ltd. Statkraft Markets GmbH		
Host Party	P.R. China		
Applied methodologies and standardized baselines	Applied methodology: ACM0002 (Version 19.0) – "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".		
Sectoral scopes	Sectoral scope 1: Energy Industries (renewable-/non-renewable source)		
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 until 31 December 2020	Amount achieved from 1 January 2021
	NA	182,820	NA
Amount of GHG emission reductions or net anthropogenic GHG removals estimated ex ante for this monitoring period in the PDD	182,854		

SECTION A. Description of project activity

A.1. General description of project activity

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The objective of Inner Mongolia Shangdu Changshengliang Wind Farm Project (hereafter refers to "the Project") is to utilize wind resources for electricity generation. The Project involves the installation of 33 wind turbines with unit capacity of 1500 kW, and totals up an installation capacity of 49.5MW. The electricity supplied by the Project is sold to North China Power Grid. The project helps reduce GHG emissions generated from the high-growth, coal-dominated power generation.

The Project started constructed on 08/2010. It started operation on 25/11/2011. The expected lifetime of the Project is 20 years as stated in the registered PDD. The Project Activity was registered on 08/11/2011 (Ref.5311) and the first crediting period is 08/11/2011 – 07/11/2018. Following the methodology, the emission reductions of the second crediting period (08/11/2018-07/11/2025) are estimated to be on average 86,230 tonnes of CO_2 equivalent (tCO_2e) per year, and 603,610 tCO_2e over the chosen crediting period. The monitoring period is from 08/11/2018 to 20/12/2020. During the monitoring period, the total emission reduction achieved is 182,820 tCO_2e.

A.2. Location of project activity

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The Project is located within Shangdu County in Inner Mongolia Autonomous Region, P.R. China. The project has geographical coordinates with east longitude from 113.5395° to 113.6219° and north latitude from 41.4459° to 41.4831°.

A.3. Parties and project participants

Parties involved	Project participants	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
People's Republic of China (host)	Beijing Beineng Chuangye Wind Power Technology Co., Ltd.	No
Germany	Statkraft Markets GmbH	No

A.4. References to applied methodologies and standardized baselines

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The approved methodology applied in the Project is ACM0002 (Version 19.0) – "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".

The tool "Tool for the demonstration and assessment of additionality (Version 07.0)" and "Tool to calculate the emission factor for an electricity system (version 07.0)" are also applied in the Project.

For more information regarding the methodologies please refer to:
http://cdm.unfccc.int/methodologies/DB/VJI9AX539D9MLOPXN2AY9UR1N4IYGD

A.5. Crediting period type and duration

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The crediting period of the Project is from 08/11/2018 to 07/11/2025 (Renewable).

SECTION B. Implementation of project activity

B.1. Description of implemented project activity

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The project activity was started construction on 08/2010 and put into operation on 25/11/2011, and well operated during this monitoring period.
During this monitoring period, the wind farm has a good running, smooth data transfer and grid connection, and no special events happened.
No events or situations occurred during the monitoring period, which may impact the applicability of the methodology.

B.2. Post-registration changes

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

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No any temporary deviations have been applied during this monitoring period.

B.2.2. Corrections

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No any corrections to project information or parameters fixed at validation have been approved during this monitoring period.

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

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No changes of crediting period occurred to the Project.

B.2.4. Inclusion of monitoring plan

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NA

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

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There is no permanent change from registered monitoring plan or applied methodology request proposed for the current monitoring period.

B.2.6. Changes to project design

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There is no change to project design of registered project activity.

B.2.7. Changes specific to afforestation or reforestation project activity

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NA

SECTION C. Description of monitoring system

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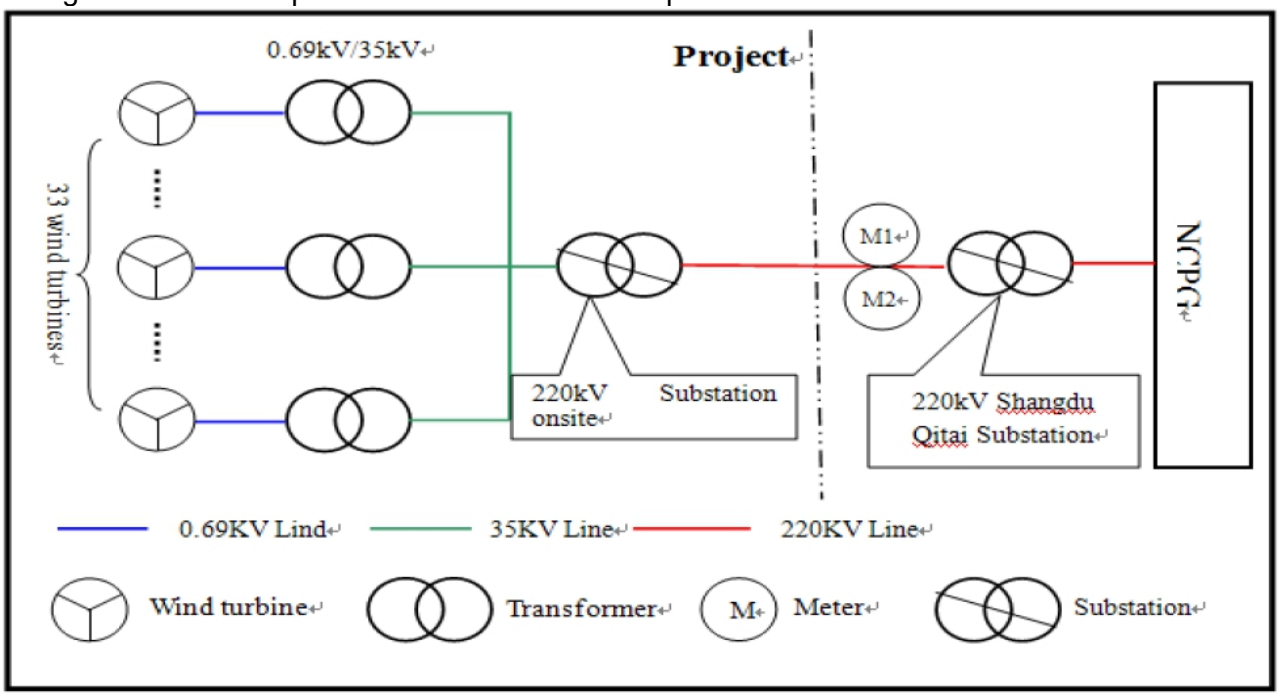
The monitoring system is specified as below:

1. Monitoring system and data collection procedures

Electricity supplied by the proposed project is monitored through the bi-directional electricity meter. Both electricity supplied to the grid by the project activity and the electricity imported from the grid to the project site is monitored by the meters. The billing meters (hereafter referred as the main meter M1 and the backup meter M2) are installed at the Shangdu Qitai 220 kV substation. The to-grid and from-grid electricity is cross-checked with the electricity receipts. The precision of the meters is 0.2s.

According to the notification issued by the local Grid Company, since Apr 2012, the monthly cut-off time of electricity supplied to and imported from the grid via the main line is changed at 24:00 on the 20th of every month. The receipts of the electricity supplied to the grid by this proposed project and the electricity imported from the grid are be issued based on the power purchase agreement (PPA) signed between the project entity and the power grid company and the readings from the billing meter (M1). The net generation is calculated as exports minus imports.

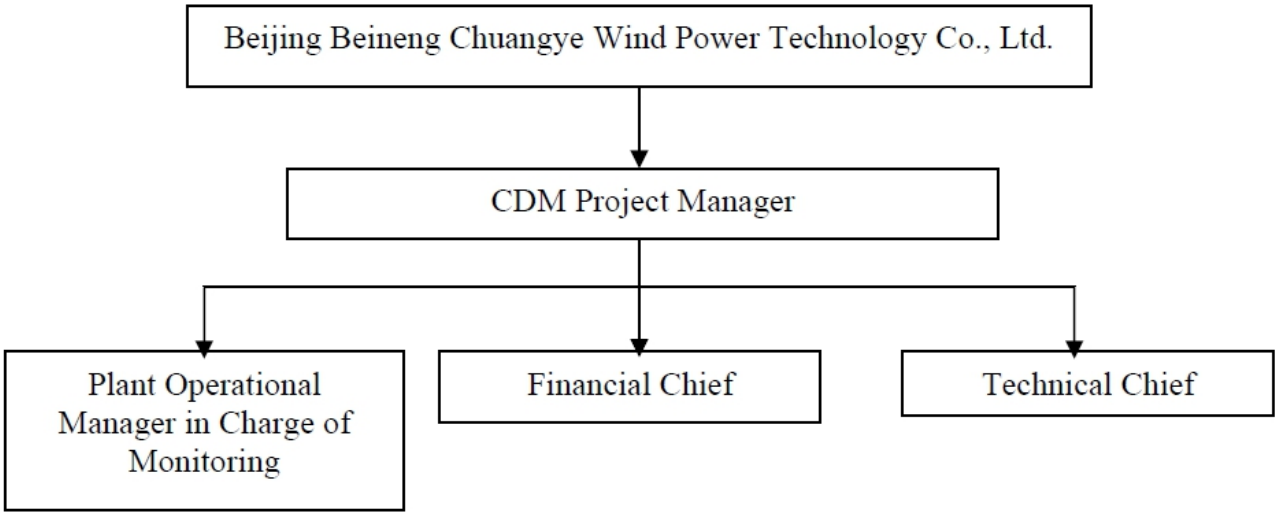
A diagram shows how parameters are monitored is presented as follows:



2. Organizational structure and responsibilities of personnel, data management

Beijing Beineng Chuangye Wind Power Technology Co., Ltd. appoints a CDM project manager. The operational and monitoring manager of the plant, the Financial Chief, and the Technical Chief are responsible for the collection of the data and information required in the monitoring plan. The collected information is documented and sent to the CDM manager monthly. The CDM manager is in charge of the implementation of the Monitoring Plan and report to the General Manager of the company. The General Manager of the company is responsible for the overall management of the wind farm project.

The monitoring structure is illustrated in the table below:



To keep safely the record of the data collected during monitoring, the project owner sets up a complete data management system. The project owner perfects the whole monitoring procedure by developing the CDM manual, tracking information from the primary source to the end-data calculations in paper document format. Physical documentation such as paper-based maps, diagrams and environmental assessment are collated in a central place, together with the monitoring plan. All paper-based information is stored by the owner and kept at least one copy.

At the end of each month, the monitoring data is filed in a spreadsheet and stored on a hard disk and CD-ROM, and the paper-based printout is also archived. Furthermore, the project owner collects related sales receipts for double check, and compiled the monitoring report including the monitoring data and relevant evidence at the end of each crediting year.

3. Emergency procedures

The meters are properly calibrated and checked for accuracy. The project owner prepares backup procedures to deal with any errors occurred to the meters. The calibration records carried out by the grid company should be provided to the proposed project owner, and these records are maintained by the project owner and the third party designated.

Meters should be tested by a qualified metric organization co-authorized by the project owner and the grid company after:

i. The detection of the reading difference between the main meter and the backup meter that exceeds the allowable tolerance.
ii. The equipment malfunction caused by improper operation

All the calibration test records should be maintained safely for the verification.

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/MWh
Description	The Baseline Emission Factor
Source of data	The registered PDD
Value(s) applied	0.84045
Choice of data or measurement methods and procedures	"2017 Baseline Emission Factors for Regional Power Grids in China" renewed by the Director Office of National Climate Change Coordination of NDRC (Chinese DNA)

Purpose of data/parameter	Baseline emission calculations
Additional comments	NA

D.2. Data and parameters monitored

(Copy this table for each data or parameter.)

Data/Parameter	$EG_{facility,y}$
Unit	MWh
Description	Quantity of net electricity generation supplied by the Project to the grid
Measured/calculated/ default	Calculated
Source of data	Electricity meters, monitoring supply to the grid ($EG_{export,y}$) and imports from the grid ($EG_{import,y}$). Calculation by $EG_{export,y}$ minus $EG_{import,y}$.
Value(s) of monitored parameter	217,527.34
Monitoring equipment	Details can be showed in Table 3.
Measuring/reading/recording frequency	Continuously measurement and monthly recording
Calculation method (if applicable)	$EG_{facility,y} = EG_{export,y} - EG_{import,y}$
QA/QC procedures	Electricity meters are calibrated yearly in accordance with national standards. Electricity meter data measurements will be cross-checked with electricity sales receipts. The accuracy of the meters is 0.2s.
Purpose of data/parameter	Baseline emission calculations
Additional comments	Data will be archived at least for two years after the end of the crediting period, or the last issuance of CERs, whichever is later

Data/Parameter	$EG_{export,y}$
Unit	MWh
Description	Quantity of electricity exported to the grid by the Project
Measured/calculated/ default	Measured
Source of data	The Project Site
Value(s) of monitored parameter	218,307.93
Monitoring equipment	Details can be showed in Table 3.
Measuring/reading/recording frequency	Continuously measurement and monthly recording
Calculation method (if applicable)	NA
QA/QC procedures	Electricity meters are calibrated yearly in accordance with national standards. Electricity meter data measurements will be cross-checked with electricity sales receipts. The accuracy of the meters is 0.2s.
Purpose of data/parameter	Baseline emission calculations
Additional comments	Data will be archived at least for two years after the end of the crediting period, or the last issuance of CERs, whichever is later

Data/Parameter	$EG_{imported,y}$
Unit	MWh
Description	Quantity of electricity imported from the grid by the Project
Measured/calculated/ default	Measured

Source of data	The Project Site
Value(s) of monitored parameter	780.59
Monitoring equipment	Details can be showed in Table 3.
Measuring/reading/recording frequency	Continuously measurement and monthly recording
Calculation method (if applicable)	*NA*
QA/QC procedures	Electricity meters are calibrated yearly in accordance with national standards. Electricity meter data measurements will be cross-checked with electricity sales receipts. The accuracy of the meters is 0.2s.
Purpose of data/parameter	Baseline emission calculations
Additional comments	Data will be archived at least for two years after the end of the crediting period, or the last issuance of CERs, whichever is later

Table 3: Details of the metering instruments

Meters	Accuracy Class	Serial Number
M1	0.2s	97508295
M2	0.2s	97508292

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 emission BE_y (tCO_2) during the monitoring period results from:

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

Where:
BE_y = Baseline emissions (tCO_2)
$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the Project (MWh).
$EG_{facility,y}$ = Quantity of net electricity generation supplied by the Project to the grid(MWh)
$EF_{grid,CM,y}$ = Emission factor of the grid (tCO_2/MWh)

As per the registered CDM-PDD, the electricity supplied to the grid should be net of auxiliary use, so:
$EG_{facility,y} = EG_{export,y} - EG_{import,y}$

Where:
$EG_{export,y}$ = Quantity of electricity exported to the grid by the Project(MWh)
$EG_{import,y}$ = Quantity of electricity imported from the grid by the Project (MWh)

The net electricity exported by the project is calculated as below:

Table 4 The electricity exported to the grid ($EG_{export,y}$)

Monitoring Period		Electricity exported to the grid by calculation meter readings (MWh)	Electricity exported to the grid by sales receipts (MWh)	Conservative value after crosscheck (MWh)
Start	End	A	B	C=MIN(A,B)
2018/11/8	2018/11/20	1,686.30	1,686.30	1,686.30
2018/11/21	2018/12/20	10,843.98	10,843.98	10,843.98
2018/12/21	2019/1/20	7,064.88	7,064.88	7,064.88
2019/1/21	2019/2/20	5,084.65	5,084.65	5,084.65
2019/2/21	2019/3/20	9,685.87	9,685.87	9,685.87
2019/3/21	2019/4/20	11,680.54	11,680.54	11,680.54
2019/4/21	2019/5/20	12,831.24	12,831.24	12,831.24
2019/5/21	2019/6/20	9,209.01	9,209.01	9,209.01
2019/6/21	2019/7/20	5,540.87	5,540.87	5,540.87
2019/7/21	2019/8/20	8,783.10	8,783.10	8,783.10
2019/8/21	2019/9/20	4,809.75	4,809.75	4,809.75
2019/9/21	2019/10/20	8,779.24	8,779.24	8,779.24
2019/10/21	2019/11/20	9,501.23	9,501.23	9,501.23
2019/11/21	2019/12/20	10,151.98	10,151.98	10,151.98
2019/12/21	2020/1/20	5,512.34	5,512.34	5,512.34
2020/1/21	2020/2/20	8,278.80	8,278.80	8,278.80
2020/2/21	2020/3/20	10,878.15	10,878.15	10,878.15
2020/3/21	2020/4/20	11,718.23	11,718.23	11,718.23
2020/4/21	2020/5/20	9,315.19	9,315.19	9,315.19
2020/5/21	2020/6/20	7,813.14	7,813.14	7,813.14
2020/6/21	2020/7/20	4,147.97	4,147.97	4,147.97
2020/7/21	2020/8/20	5,721.57	5,721.57	5,721.57
2020/8/21	2020/9/20	8,411.81	8,411.81	8,411.81
2020/9/21	2020/10/20	9276.3	9276.3	9,276.30
2020/10/21	2020/11/20	10836.5	10836.5	10,836.50
2020/11/21	2020/12/20	10745.29	10745.29	10,745.29
Total		-	-	218,307.93

Table 5 The electricity imported from the grid ($EG_{import,y}$)

Monitoring Period		Electricity imported from the grid by calculation meter readings (MWh)	Electricity imported from the grid by sales receipts (MWh)	Conservative value after crosscheck (MWh)
Start	End	D	E	F=MAX(D,E)
2018/11/8	2018/11/20	8.19	8.19	8.19
2018/11/21	2018/12/20	28.70	28.70	28.70
2018/12/21	2019/1/20	19.60	19.60	19.60
2019/1/21	2019/2/20	74.50	74.50	74.50
2019/2/21	2019/3/20	23.90	23.90	23.90

2019/3/21	2019/4/20	12.40	12.40	12.40
2019/4/21	2019/5/20	11.60	11.60	11.60
2019/5/21	2019/6/20	20.70	20.70	20.70
2019/6/21	2019/7/20	36.40	36.40	36.40
2019/7/21	2019/8/20	43.90	43.90	43.90
2019/8/21	2019/9/20	50.00	50.00	50.00
2019/9/21	2019/10/20	33.00	33.00	33.00
2019/10/21	2019/11/20	20.20	20.20	20.20
2019/11/21	2019/12/20	21.10	21.10	21.10
2019/12/21	2020/1/20	72.40	72.40	72.40
2020/1/21	2020/2/20	33.20	33.20	33.20
2020/2/21	2020/3/20	20.30	20.30	20.30
2020/3/21	2020/4/20	18.90	18.90	18.90
2020/4/21	2020/5/20	18.40	18.40	18.40
2020/5/21	2020/6/20	27.00	27.00	27.00
2020/6/21	2020/7/20	38.00	38.00	38.00
2020/7/21	2020/8/20	44.00	44.00	44.00
2020/8/21	2020/9/20	20.80	20.80	20.80
2020/9/21	2020/10/20	26.70	26.70	26.70
2020/10/21	2020/11/20	50.2	50.2	50.20
2020/11/21	2020/12/20	6.5	6.5	6.50
Total		-	-	780.59

Net Electricity supplied to the NCPG by the project:

Period	$EG_{facility,y}$
	G=C-F
08/11/2018~20/12/2020	**217,527.34**

$BE_y = EG_{facility,y} \times EF_{grid,CM,y} =$ 217,527.34 MWh × 0.84045 tCO_2e/MWh = 182,820 tCO_2e.

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

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According to the registered PDD of the project, no project emission is to be counted by the Project.

Hence, PE_y=0

E.3. Calculation of leakage emissions

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According to the registered PDD of the project, No leakage was considered.

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

	Baseline GHG emissions or baseline net GHG removals (t CO_2e)	Project GHG emissions or actual net GHG removals (t CO_2e)	Leakage GHG emissions (t CO_2e)	GHG emission reductions or net anthropogenic GHG removals (t CO_2e)			
				Before 01/01/ 2013	From 01/01/ 2013 until 31/12/ 2020	From 01/01/ 2021	Total amount
Total	182,820	0	-	NA	182,820	NA	182,820

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_2e)	Amount estimated ex ante for this monitoring period in the PDD (t CO_2e)
182,820	182,854

E.5.1. Explanation of calculation of "amount estimated ex ante for this monitoring period in the PDD"

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According to the registered PDD, the emission reductions of the project are estimated to be 86,230 tCO2e annually. The monitoring period is from 08/11/2018 to 20/12/2020 with 774 days. The estimated emission reductions during the monitoring period are calculated as: 86,230 tCO_2e / 365 days * 774 days = 182,854 tCO_2e.

E.6. Remarks on increase in achieved emission reductions

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The actual value of emission reductions in this period is lower than that estimated in the PDD.

E.7. Remarks on scale of small-scale project activity

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Not applicable.

Document information

Version	*Date*	*Description*
08.0	6 April 2021	Revision to: • Reflect the “Clarification: Regulatory requirements under temporary measures for post-2020 cases” (CDM-EB109-A01-CLAR).
07.0	31 May 2019	Revision to: • Ensure consistency with version 02.0 of the “CDM project standard for project activities” (CDM-EB93-A04-STAN); • Add a section on remarks on the observance of the scale limit of small-scale project activity during the crediting period; • Add "changes specific to afforestation or reforestation project activity" as a possible post-registration changes; • Clarify the reporting of net anthropogenic GHG removals for A/R project activities between two commitment periods; • Make editorial improvements.
06.0	7 June 2017	Revision to: • 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: • 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: • 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 *F-CDM-MR* to *CDM-MR-FORM*; • 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).

Version	*Date*	*Description*
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.

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