



Monitoring report form for CDM project activity
(Version 06.0)

MONITORING REPORT

Title of the project activity	Guangdong Taishan Shangchuandao Island Phase I Wind Farm Project	
UNFCCC reference number of the project activity	2953	
Version number of the PDD applicable to this monitoring report	3.1	
Version number of this monitoring report	01	
Completion date of this monitoring report	06/08/2018	
Monitoring period number	03	
Duration of this monitoring period	01/01/2013-13/08/2017	
Monitoring report number for this monitoring report	N/A	
Project participants	CGN Taishanchuandao Wind Power Co., Ltd. Carbon Resource Management Ltd. Carbon Resource Management S.A.	
Host Party	People's Republic of China	
Sectoral scopes	01 Energy industries (renewable-/non-renewable sources)	
Applied methodologies and standardized baselines	ACM0002 (version 09)	
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	410,896
Amount of GHG emission reductions or net anthropogenic GHG removals estimated ex ante for this monitoring period in the PDD	398,187	

SECTION A. Description of project activity

A.1. General description of project activity

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Guangdong Taishan Shangchuandao Island Phase I Wind Farm Project (hereinafter referred to as the Project) is located in Shangchuandao Island, Chuandao Town, Taishan County, Jiangmen City, Guangdong Province, P.R.China. It is invested, constructed and operated by CGN Taishanchuandao Wind Power Co., Ltd..

The total installed capacity of the Project is 48.45 MW equipped with 57 sets of wind turbines with a unit installed capacity of 850 kW. Electricity generated by the Project is delivered to South China Power Grid. The Project as a renewable energy source generates emission reductions by avoiding CO₂ emissions from the same amount of electricity generation from South China Power Grid, which is mainly composed of traditional thermal power plants.

Construction of the Project was started on 01/02/2009. The Project was commissioned on 14/08/2010. This monitoring report focuses on the emission reductions generated by the Project from 01/01/2013 to 13/08/2017. Actual emission reductions of the Project are 410,896 tCO₂e in this monitoring period.

A.2. Location of project activity

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The Project is located in Shangchuandao Island, Chuandao Town, Taishan County, Jiangmen City, Guangdong Province, P.R.China.

Geographical coordinates:

East longitude, from 112°46'11" to 112°47'08"

North latitude, from 21°34'50" to 21°39'03"

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 Party)	CGN Taishanchuandao Wind Power Co., Ltd.	No
United Kingdom of Great Britain and Northern Ireland	Carbon Resource Management Ltd.	No
Switzerland	Carbon Resource Management S.A.	No

A.4. Reference to applied methodologies and standardized baselines

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Approved consolidated baseline and monitoring methodology ACM0002: "Consolidated methodology for grid-connected electricity generation from renewable sources" (Version 09).

The approved "Tool for demonstration and assessment of additionality", Version 05.2.

The approved "Tool to calculate the emission factor for an electricity system", Version 01.1.

Reference:

<http://cdm.unfccc.int/methodologies/PAmethodologies/approve>

A.5. Crediting period type and duration

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The crediting period type is Renewable (7 years×3).

The crediting period duration is 14/08/2010-13/08/2017, which is changed from 07/02/2010-06/02/2010.

SECTION B. Implementation of project activity

B.1. Description of implemented project activity

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The Project is a greenfield grid-connected wind power project. The total installed capacity of the Project is 48.45 MW equipped with 57 sets of wind turbines with a unit installed capacity of 850 kW. Electricity generated by the Project is delivered to South China Power Grid. Please refer to Table 1 for key technical parameters of turbines in the Project.

Construction of the Project was started on 01/02/2009. The Project was commissioned on 14/08/2010.

From then, key equipments of the Project have been operating in line with the registered CDM-PDD approved by CDM EB. During this monitoring period, no overhaul was undertaken for the Project and there was no downtime or exchange of equipment.

No special event or situation, which may impact the applicability of the methodology, occurred in this monitoring period.

The technology process of the Project and key technical parameters of turbines are as below:

Figure 1 Technology process of the project

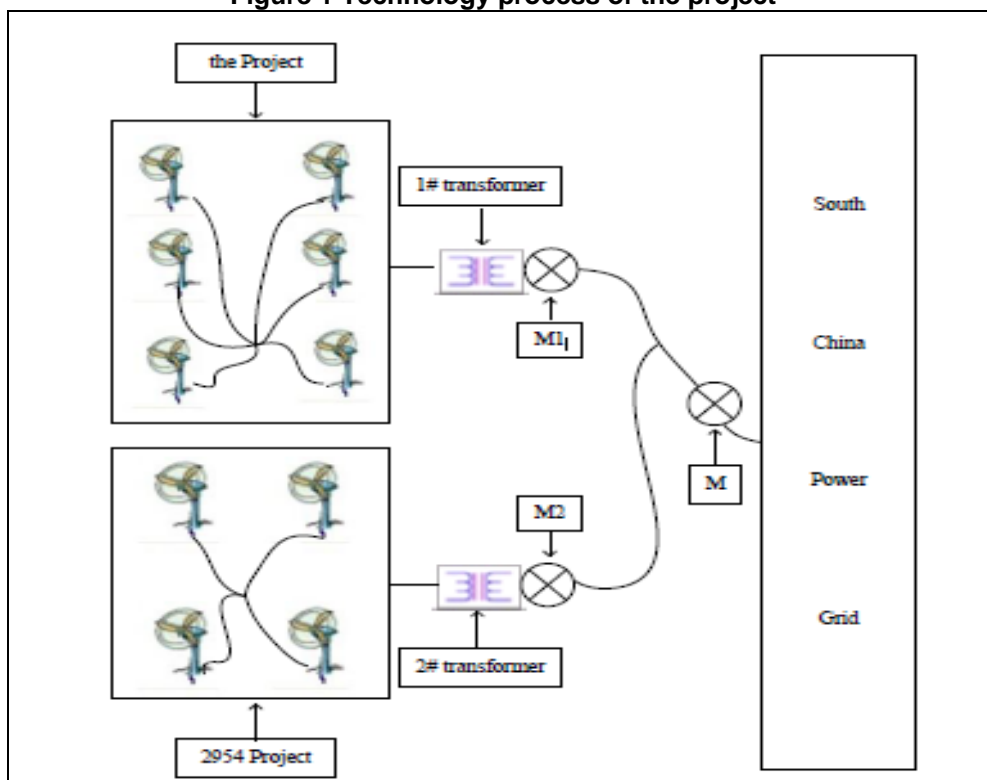


Table 1 Technical Characteristics of the generating equipment

Model	V52-850 kW
Rated capacity	850 kW
Rotor diameter	52 m
Swept area	2124 m ²
Cut-in speed	4 m/s
Rated wind speed	19 m/s

Cut-out speed	25 m/s
Rated voltage of generator	690 V

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 is no temporary deviation from registered monitoring plan, applied methodology or applied standardized baseline for the 3rd monitoring period.

B.2.2. Corrections

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There is no correction for the 3rd monitoring period.

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

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The start date of crediting period for the project is 14/08/2010, which is changed from 07/02/2010.

B.2.4. Inclusion of monitoring plan

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Not applicable.

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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For the 3rd monitoring period, there is no permanent change to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other applied standards or tools.

B.2.6. Changes to project design

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There is no change to project design of registered project activity for the 3rd monitoring period.

SECTION C. Description of monitoring system

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1. Monitoring system and data collection

As designed in the registered CDM-PDD, the actual situation is that two projects share the same 110 kV transmission line when connecting to the grid (figure 2). In order to conservatively separate the quantity of net electricity supplied by the Project, there are three electricity meters related to the monitoring system of the Project.

The electricity meter M1 installed at the 1# transformer in the substation at the Project Site measures the electricity generation of the Project and the electricity meter M2 installed at the 2# transformer in the substation at the Project Site measures the electricity generation of 2954 Project (Another CDM project whose reference number is 2954). The electricity meter M installed at the outlet end of the substation at the Project Site measures the total exported and imported electricity of the two projects. M1 and M2 are so-called “appropriate additional meters” as described in the registered CDM-PDD by which electricity generation can be separately monitored for each project so as to calculate the share of the Project. Both these two transformers and three electricity meters are installed at the substation of the Project Site which is also the substation connected to the grid as approved by the grid company.

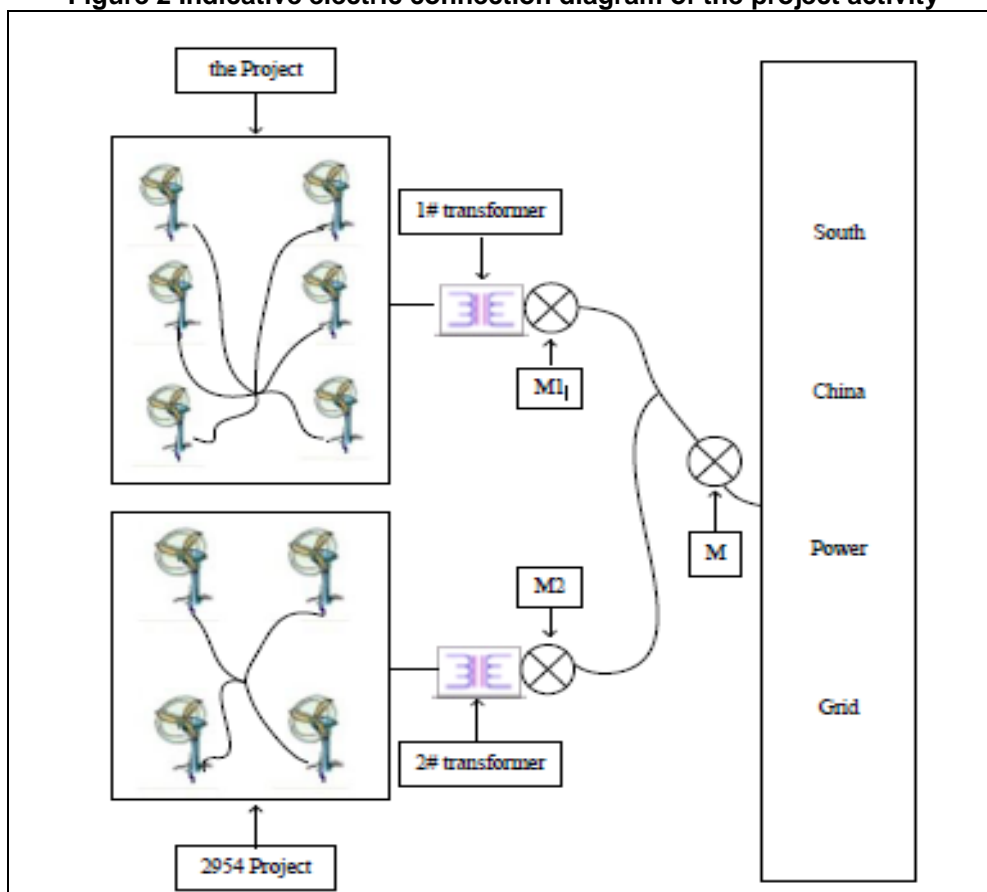
As per the registered CDM-PDD, four monitoring points are utilized in the Project as follows:

M, for total electricity exported to the grid by 2954 Project and the Project;
M, for total electricity imported from the grid by 2954 Project and the Project;
M1, for electricity generation of the Project;
M2, for electricity generation of 2954 Project;

All relevant electricity data are hourly measured. Readings of these electricity meters at 00:00:00 on the first day and 24:00:00 on the last day of every month are recorded. Then, these monthly data are aggregated for use. All these data will be directly reported to the technology department.

Indicative electric connection diagram of the project is described as follow:

Figure 2 Indicative electric connection diagram of the project activity



2. Organizational structure and responsibility

Table 2. Organizational structure and roles and responsibilities

Organizational structure		Roles and responsibilities
Monitoring director		Data crosscheck Submission of monitoring reports and data to the DOE Liaison with the DOE and the CDM consultant
Technology department		Crosscheck of electricity data Issuance of invoices to the grid company
	Monitoring staff	Recording, reporting and storing of the electricity data Calculation of the net electricity generation during the crediting period
	Auditing staff	Check of the calculation results of the net electricity generation each month

3. Quality assurance and quality control

The electricity meters are at least annually calibrated for precision by a qualified entity in accordance with industry standards (e.g. the power sector standard DL/T448 in China). Calibration records are kept by the monitoring staff for verification. The meters will be jointly inspected and sealed on behalf of the parties concerned and not be interfered with by either party except in the presence of the other party or its accredited representatives.

4. Emergency procedures

The readings of the main meter will be adopted in normal condition. If the main meter has a breakdown, the readings of the backup meter will be adopted. If both the main meter and the backup meter have breakdowns, the net electricity supplied to the grid will be calculated from the readings of other meters deducting the line losses. When the main meter or backup meter have a breakdown, the party finding the breakdown should tell the other party and inform the qualified calibration organization to check, calibrate, test and treat the meter so as to recover the normal monitoring state.

5. Training

A CDM Monitoring Manual has been compiled and training on personnel from the CDM Project Office has been completed within three months from registration of the Project. Training on new personnel to the CDM Project Office will be completed within three months from starting work.

SECTION D. Data and parameters

D.1. Data and parameters fixed ex ante

Data/Parameter	$EF_{grid,CM,y}$
Unit	tCO ₂ e/MWh
Description	Combined margin CO ₂ emission factor for grid connected power generation
Source of data	Registered PDD
Value(s) applied	0.8933
Choice of data or measurement methods and procedures	Not applicable
Purpose of data/parameter	Baseline emission calculations
Additional comments	The baseline emission factor was determined ex ante and will be used throughout the first crediting period

D.2. Data and parameters monitored

Data/Parameter	EG_y
Unit	MWh
Description	Electricity supplied to the grid by the Project
Measured/calculated/default	Calculated
Source of data	Refer to Section E.1
Value(s) of monitored parameter	459,975.855
Monitoring equipment	Electricity Meter (M) Accuracy class: 0.5S Serial No.: 96274250 Calibration frequency: annually Date of calibrations: 27/11/2012, 26/11/2013, 25/11/2014, 24/11/2015, 23/11/2016 Validity of the last calibration: 22/11/2017 Electricity Meter (M1) Accuracy class: 0.2S

	Serial No.: 10040284960050 Calibration frequency: annually Date of calibrations: 27/11/2012, 26/11/2013, 25/11/2014, 24/11/2015, 23/11/2016 Validity of the last calibration: 22/11/2017 Electricity Meter (M2) Accuracy class: 0.2S Serial No.: 20080761040066 Calibration frequency: annually Date of calibrations: 27/11/2012, 26/11/2013, 25/11/2014, 24/11/2015, 23/11/2016 Validity of the last calibration: 22/11/2017
Measuring/reading/recording frequency	Continuously measurement and monthly recording
Calculation method (if applicable)	$EG_y = EG_{export,y} - EG_{import,y}$
QA/QC procedures	Records for sold electricity are used for crosscheck.
Purpose of data/parameter	Baseline emission calculations
Additional comments	-

Data/Parameter	EG_{export,y}
Unit	MWh
Description	Electricity exported to the grid by the Project
Measured/calculated/default	Calculated
Source of data	Refer to Section E.1
Value(s) of monitored parameter	461,249.743
Monitoring equipment	Electricity Meter (M) Accuracy class: 0.5S Serial No.: 96274250 Calibration frequency: annually Date of calibrations: 27/11/2012, 26/11/2013, 25/11/2014, 24/11/2015, 23/11/2016 Validity of the last calibration: 22/11/2017 Electricity Meter (M1) Accuracy class: 0.2S Serial No.: 10040284960050 Calibration frequency: annually Date of calibrations: 27/11/2012, 26/11/2013, 25/11/2014, 24/11/2015, 23/11/2016 Validity of the last calibration: 22/11/2017 Electricity Meter (M2) Accuracy class: 0.2S Serial No.: 20080761040066 Calibration frequency: annually Date of calibrations: 27/11/2012, 26/11/2013, 25/11/2014, 24/11/2015, 23/11/2016 Validity of the last calibration: 22/11/2017
Measuring/reading/recording frequency	Continuously measurement and monthly recording
Calculation method (if applicable)	$EG_{export,y} = EG_{export,total} \times EG_{project} / (EG_{project} + EG_{others})$
QA/QC procedures	Data will be kept at least for two years after the end of the last crediting period. Relevant meters will be calibrated at least once a year by a qualified calibration organization in accordance with industry standards.
Purpose of data/parameter	Baseline emission calculations
Additional comments	-

Data/Parameter	$EG_{import,y}$
Unit	MWh
Description	Electricity imported from the grid by the Project
Measured/calculated/default	Measured
Source of data	Monthly reading record
Value(s) of monitored parameter	1,273.888
Monitoring equipment	Electricity Meter (M) Accuracy class: 0.5S Serial No.: 96274250 Calibration frequency: annually Date of calibrations: 27/11/2012, 26/11/2013, 25/11/2014, 24/11/2015, 23/11/2016 Validity of the last calibration: 22/11/2017
Measuring/reading/recording frequency	Continuously measurement and monthly recording
Calculation method (if applicable)	$EG_{import,y} = EG_{import,total}$
QA/QC procedures	Data will be kept at least for two years after the end of the last crediting period. Relevant meters will be calibrated at least once a year by a qualified calibration organization in accordance with industry standards.
Purpose of data/parameter	Baseline emission calculations
Additional comments	-

Data/Parameter	$EG_{project,y}$
Unit	MWh
Description	Electricity generation of the Project
Measured/calculated/default	Measured
Source of data	Monthly reading record
Value(s) of monitored parameter	461,485.200
Monitoring equipment	Electricity Meter (M1) Accuracy class: 0.2S Serial No.: 10040284960050 Calibration frequency: annually Date of calibrations: 27/11/2012, 26/11/2013, 25/11/2014, 24/11/2015, 23/11/2016 Validity of the last calibration: 22/11/2017
Measuring/reading/recording frequency	Continuously measurement and monthly recording
Calculation method (if applicable)	Not applicable
QA/QC procedures	Data will be kept at least for two years after the end of the last crediting period. Relevant meters will be calibrated at least once a year by a qualified calibration organization in accordance with industry standards. Records for sold electricity are used for crosscheck.
Purpose of data/parameter	Baseline emission calculations
Additional comments	-

Data/Parameter	$EG_{other,y}$
Unit	MWh
Description	Electricity generation of 2954 Project

Measured/calculated/default	Measured
Source of data	Monthly reading record
Value(s) of monitored parameter	335,659.280
Monitoring equipment	Electricity Meter (M2) Accuracy class: 0.2S Serial No.: 20080761040066 Calibration frequency: annually Date of calibrations: 27/11/2012, 26/11/2013, 25/11/2014, 24/11/2015, 23/11/2016 Validity of the last calibration: 22/11/2017
Measuring/reading/recording frequency	Continuously measurement and monthly recording
Calculation method (if applicable)	Not applicable
QA/QC procedures	Data will be kept at least for two years after the end of the last crediting period. Relevant meters will be calibrated at least once a year by a qualified calibration organization in accordance with industry standards. Records for sold electricity are used for crosscheck.
Purpose of data/parameter	Baseline emission calculations
Additional comments	-

Data/Parameter	EG_{export,total}
Unit	MWh
Description	Total electricity exported to the grid by 2954 Project and the Project
Measured/calculated/default	Measured
Source of data	Monthly reading record
Value(s) of monitored parameter	796,736.160
Monitoring equipment	Electricity Meter (M) Accuracy class: 0.5S Serial No.: 96274250 Calibration frequency: annually Date of calibrations: 27/11/2012, 26/11/2013, 25/11/2014, 24/11/2015, 23/11/2016 Validity of the last calibration: 22/11/2017
Measuring/reading/recording frequency	Continuously measurement and monthly recording
Calculation method (if applicable)	Not applicable
QA/QC procedures	Data will be kept at least for two years after the end of the last crediting period. Relevant meters will be calibrated at least once a year by a qualified calibration organization in accordance with industry standards. Records for sold electricity are used for crosscheck.
Purpose of data/parameter	Baseline emission calculations
Additional comments	-

Data/Parameter	EG_{import,total}
Unit	MWh
Description	Total electricity imported from the grid by 2954 Project and the Project
Measured/calculated/default	Measured
Source of data	Monthly reading record

Value(s) of monitored parameter	1,273.888
Monitoring equipment	Electricity Meter (M) Accuracy class: 0.5S Serial No.: 96274250 Calibration frequency: annually Date of calibrations: 27/11/2012, 26/11/2013, 25/11/2014, 24/11/2015, 23/11/2016 Validity of the last calibration: 22/11/2017
Measuring/reading/recording frequency	Continuously measurement and monthly recording
Calculation method (if applicable)	Not applicable
QA/QC procedures	Data will be kept at least for two years after the end of the last crediting period. Relevant meters will be calibrated at least once a year by a qualified calibration organization in accordance with industry standards. Records for sold electricity are used for crosscheck.
Purpose of data/parameter	Baseline emission calculations
Additional comments	-

D.3. Implementation of sampling plan

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No data or parameters are determined by using sampling method, so this section is not relevant to the Project.

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 (tCO₂) during the monitoring period results from:

$$BE_y = EG_y \times EF_{grid,CM,y}$$

Where:

BE_y = Baseline emissions (tCO₂)

EG_y = Net electricity supplied to the grid by the Project (MWh).

$EF_{grid,CM,y}$ = Emission factor of the grid (tCO₂/MWh)

As designed in the registered CDM-PDD, if the actual situation is that two projects share the same 110 kV transmission line when connecting to the grid, in order to conservatively separate the quantity of net electricity supplied by the Project, it is calculated as:

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

$$EG_{export,y} = EG_{export,total} \times EG_{project} / (EG_{project} + EG_{others})$$

$$EG_{import,y} = EG_{import,total}$$

Where:

$EG_{export,total}$ = Total electricity exported to the grid by 2954 Project and the Project (MWh)

$EG_{import,total}$ = Total electricity imported from the grid by 2954 Project and the Project (MWh)

$EG_{project}$ = Electricity generation of the Project (MWh)

EG_{others} = Electricity generation of the 2954 Project (MWh)

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

Table 3 The electricity generation of the Project ($EG_{project}$)

Monitoring Period	Meter readings (MWh)	Sales receipts (MWh)	Conservative value after crosscheck (MWh)
	A	B	C=Min(A,B)
01/01/2013-31/01/2013	8,084.560	8,084.560	8,084.560
01/02/2013-28/02/2013	9,153.760	9,153.760	9,153.760
01/03/2013-31/03/2013	6,263.840	6,263.840	6,263.840
01/04/2013-30/04/2013	10,599.600	10,599.600	10,599.600
01/05/2013-31/05/2013	7,595.280	7,595.280	7,595.280
01/06/2013-30/06/2013	7,376.160	7,376.160	7,376.160
01/07/2013-31/07/2013	6,593.840	6,593.840	6,593.840
01/08/2013-31/08/2013	5,704.160	5,704.160	5,704.160
01/09/2013-30/09/2013	9,658.880	9,658.880	9,658.880
01/10/2013-31/10/2013	9,459.120	9,459.120	9,459.120
01/11/2013-30/11/2013	14,250.720	14,250.720	14,250.720
01/12/2013-31/12/2013	13,752.640	13,752.640	13,752.640
Sub-total for 2013	108,492.560	108,492.560	108,492.560
01/01/2014-31/01/2014	7,062.000	7,062.000	7,062.000
01/02/2014-28/02/2014	11,001.760	11,001.760	11,001.760
01/03/2014-31/03/2014	11,007.920	11,007.920	11,007.920
01/04/2014-30/04/2014	7,842.560	7,842.560	7,842.560
01/05/2014-31/05/2014	8,221.840	8,221.840	8,221.840
01/06/2014-30/06/2014	4,365.680	4,365.680	4,365.680
01/07/2014-31/07/2014	4,382.400	4,382.400	4,382.400
01/08/2014-31/08/2014	4,092.880	4,092.880	4,092.880
01/09/2014-30/09/2014	3,934.480	3,934.480	3,934.480
01/10/2014-31/10/2014	8,028.240	8,028.240	8,028.240
01/11/2014-30/11/2014	8,051.120	8,051.120	8,051.120
01/12/2014-31/12/2014	17,353.600	17,353.600	17,353.600
Sub-total for 2014	95,344.480	95,344.480	95,344.480
01/01/2015-31/01/2015	9,220.640	9,220.640	9,220.640
01/02/2015-28/02/2015	7,496.720	7,496.720	7,496.720
01/03/2015-31/03/2015	9,306.000	9,306.000	9,306.000
01/04/2015-30/04/2015	6,649.280	6,649.280	6,649.280
01/05/2015-31/05/2015	6,112.480	6,112.480	6,112.480
01/06/2015-30/06/2015	5,851.120	5,851.120	5,851.120
01/07/2015-31/07/2015	6,042.080	6,042.080	6,042.080
01/08/2015-31/08/2015	2,472.800	2,472.800	2,472.800
01/09/2015-30/09/2015	5,772.800	5,772.800	5,772.800
01/10/2015-31/10/2015	5,918.880	5,918.880	5,918.880
01/11/2015-30/11/2015	12,137.840	12,137.840	12,137.840
01/12/2015-31/12/2015	20,868.320	20,868.320	20,868.320
Sub-total for 2015	97,848.960	97,848.960	97,848.960
01/01/2016-31/01/2016	4,978.160	4,978.160	4,978.160
01/02/2016-29/02/2016	12,695.760	12,695.760	12,695.760
01/03/2016-31/03/2016	9,944.880	9,944.880	9,944.880
01/04/2016-30/04/2016	4,228.400	4,228.400	4,228.400
01/05/2016-31/05/2016	9,229.440	9,229.440	9,229.440
01/06/2016-30/06/2016	3,993.440	3,993.440	3,993.440
01/07/2016-31/07/2016	6,295.520	6,295.520	6,295.520
01/08/2016-31/08/2016	4,514.400	4,514.400	4,514.400
01/09/2016-30/09/2016	5,575.680	5,575.680	5,575.680
01/10/2016-31/10/2016	7,401.680	7,401.680	7,401.680
01/11/2016-30/11/2016	12,903.440	12,903.440	12,903.440

01/12/2016-31/12/2016	13,365.440	13,365.440	13,365.440
Sub-total for 2016	95,126.240	95,126.240	95,126.240
01/01/2017-31/01/2017	9,220.640	9,220.640	9,220.640
01/02/2017-28/02/2017	13,373.360	13,373.360	13,373.360
01/03/2017-31/03/2017	12,562.000	12,562.000	12,562.000
01/04/2017-30/04/2017	6,656.320	6,656.320	6,656.320
01/05/2017-31/05/2017	5,159.440	5,159.440	5,159.440
01/06/2017-30/06/2017	7,324.240	7,324.240	7,324.240
01/07/2017-31/07/2017	4,559.280	4,559.280	4,559.280
01/08/2017-13/08/2017	5,817.680	5,817.680	5,817.680
Sub-total for 2017	64,672.960	64,672.960	64,672.960
Total for the monitoring period	461,485.200	461,485.200	461,485.200

Table 4 The electricity generation of 2954 Project (EG_{others})

Monitoring Period	Meter readings (MWh)	Sales receipts (MWh)	Conservative value after crosscheck (MWh)
	D	E	F=Min(D,E)
01/01/2013-31/01/2013	6,983.680	6,983.680	6,983.680
01/02/2013-28/02/2013	6,382.640	6,382.640	6,382.640
01/03/2013-31/03/2013	5,258.880	5,258.880	5,258.880
01/04/2013-30/04/2013	7,978.960	7,978.960	7,978.960
01/05/2013-31/05/2013	6,146.800	6,146.800	6,146.800
01/06/2013-30/06/2013	4,866.400	4,866.400	4,866.400
01/07/2013-31/07/2013	4,743.200	4,743.200	4,743.200
01/08/2013-31/08/2013	4,389.440	4,389.440	4,389.440
01/09/2013-30/09/2013	6,838.480	6,838.480	6,838.480
01/10/2013-31/10/2013	7,367.360	7,367.360	7,367.360
01/11/2013-30/11/2013	11,864.160	11,864.160	11,864.160
01/12/2013-31/12/2013	8,426.880	8,426.880	8,426.880
Sub-total for 2013	81,246.880	81,246.880	81,246.880
01/01/2014-31/01/2014	5,101.360	5,101.360	5,101.360
01/02/2014-28/02/2014	7,888.320	7,888.320	7,888.320
01/03/2014-31/03/2014	7,562.720	7,562.720	7,562.720
01/04/2014-30/04/2014	4,759.920	4,759.920	4,759.920
01/05/2014-31/05/2014	7,123.600	7,123.600	7,123.600
01/06/2014-30/06/2014	3,391.520	3,391.520	3,391.520
01/07/2014-31/07/2014	2,647.040	2,647.040	2,647.040
01/08/2014-31/08/2014	3,287.680	3,287.680	3,287.680
01/09/2014-30/09/2014	2,683.120	2,683.120	2,683.120
01/10/2014-31/10/2014	6,908.880	6,908.880	6,908.880
01/11/2014-30/11/2014	5,865.200	5,865.200	5,865.200
01/12/2014-31/12/2014	11,905.520	11,905.520	11,905.520
Sub-total for 2014	69,124.880	69,124.880	69,124.880
01/01/2015-31/01/2015	7,223.920	7,223.920	7,223.920
01/02/2015-28/02/2015	5,426.960	5,426.960	5,426.960
01/03/2015-31/03/2015	7,571.520	7,571.520	7,571.520
01/04/2015-30/04/2015	4,209.920	4,209.920	4,209.920
01/05/2015-31/05/2015	4,144.800	4,144.800	4,144.800
01/06/2015-30/06/2015	4,847.920	4,847.920	4,847.920
01/07/2015-31/07/2015	3,677.520	3,677.520	3,677.520
01/08/2015-31/08/2015	1,899.040	1,899.040	1,899.040
01/09/2015-30/09/2015	4,562.800	4,562.800	4,562.800
01/10/2015-31/10/2015	4,323.440	4,323.440	4,323.440

01/11/2015-30/11/2015	8,449.760	8,449.760	8,449.760
01/12/2015-31/12/2015	13,238.720	13,238.720	13,238.720
Sub-total for 2015	69,576.320	69,576.320	69,576.320
01/01/2016-31/01/2016	4,100.800	4,100.800	4,100.800
01/02/2016-29/02/2016	8,900.320	8,900.320	8,900.320
01/03/2016-31/03/2016	6,394.960	6,394.960	6,394.960
01/04/2016-30/04/2016	3,603.600	3,603.600	3,603.600
01/05/2016-31/05/2016	5,724.400	5,724.400	5,724.400
01/06/2016-30/06/2016	3,490.080	3,490.080	3,490.080
01/07/2016-31/07/2016	4,200.240	4,200.240	4,200.240
01/08/2016-31/08/2016	3,808.640	3,808.640	3,808.640
01/09/2016-30/09/2016	4,098.160	4,098.160	4,098.160
01/10/2016-31/10/2016	6,850.800	6,850.800	6,850.800
01/11/2016-30/11/2016	9,024.400	9,024.400	9,024.400
01/12/2016-31/12/2016	8,431.280	8,431.280	8,431.280
Sub-total for 2016	68,627.680	68,627.680	68,627.680
01/01/2017-31/01/2017	7,478.240	7,478.240	7,478.240
01/02/2017-28/02/2017	8,242.080	8,242.080	8,242.080
01/03/2017-31/03/2017	9,166.080	9,166.080	9,166.080
01/04/2017-30/04/2017	4,788.080	4,788.080	4,788.080
01/05/2017-31/05/2017	3,157.440	3,157.440	3,157.440
01/06/2017-30/06/2017	5,989.280	5,989.280	5,989.280
01/07/2017-31/07/2017	3,842.960	3,842.960	3,842.960
01/08/2017-13/08/2017	4,419.360	4,419.360	4,419.360
Sub-total for 2017	47,083.520	47,083.520	47,083.520
Total for the monitoring period	335,659.280	335,659.280	335,659.280

Table 5 The electricity exported to the grid by 2954 Project and the Project ($EG_{export,total}$)

Monitoring Period	Meter readings (MWh)	Sales receipts (MWh)	Conservative value after crosscheck (MWh)
	G	H	I=Min(G,H)
01/01/2013-31/01/2013	15,062.080	15,062.080	15,062.080
01/02/2013-28/02/2013	15,533.760	15,533.760	15,533.760
01/03/2013-31/03/2013	11,515.680	11,515.680	11,515.680
01/04/2013-30/04/2013	18,560.960	18,560.960	18,560.960
01/05/2013-31/05/2013	13,728.000	13,728.000	13,728.000
01/06/2013-30/06/2013	12,233.760	12,233.760	12,233.760
01/07/2013-31/07/2013	11,332.640	11,332.640	11,332.640
01/08/2013-31/08/2013	10,091.840	10,091.840	10,091.840
01/09/2013-30/09/2013	16,484.160	16,484.160	16,484.160
01/10/2013-31/10/2013	16,815.040	16,815.040	16,815.040
01/11/2013-30/11/2013	26,113.120	26,113.120	26,113.120
01/12/2013-31/12/2013	22,174.240	22,174.240	22,174.240
Sub-total for 2013	189,645.280	189,645.280	189,645.280
01/01/2014-31/01/2014	12,154.560	12,154.560	12,154.560
01/02/2014-28/02/2014	18,876.000	18,876.000	18,876.000
01/03/2014-31/03/2014	18,568.000	18,568.000	18,568.000
01/04/2014-30/04/2014	12,599.840	12,599.840	12,599.840
01/05/2014-31/05/2014	15,340.160	15,340.160	15,340.160
01/06/2014-30/06/2014	7,754.560	7,754.560	7,754.560
01/07/2014-31/07/2014	7,024.160	7,024.160	7,024.160
01/08/2014-31/08/2014	7,376.160	7,376.160	7,376.160
01/09/2014-30/09/2014	6,612.320	6,612.320	6,612.320

01/10/2014-31/10/2014	14,926.560	14,926.560	14,926.560
01/11/2014-30/11/2014	13,909.280	13,909.280	13,909.280
01/12/2014-31/12/2014	29,244.160	29,244.160	29,244.160
Sub-total for 2014	164,385.760	164,385.760	164,385.760
01/01/2015-31/01/2015	16,431.360	16,431.360	16,431.360
01/02/2015-28/02/2015	12,920.160	12,920.160	12,920.160
01/03/2015-31/03/2015	16,864.320	16,864.320	16,864.320
01/04/2015-30/04/2015	10,853.920	10,853.920	10,853.920
01/05/2015-31/05/2015	10,253.760	10,253.760	10,253.760
01/06/2015-30/06/2015	10,690.240	10,690.240	10,690.240
01/07/2015-31/07/2015	9,711.680	9,711.680	9,711.680
01/08/2015-31/08/2015	4,370.080	4,370.080	4,370.080
01/09/2015-30/09/2015	10,332.960	10,332.960	10,332.960
01/10/2015-31/10/2015	10,237.920	10,237.920	10,237.920
01/11/2015-30/11/2015	20,576.160	20,576.160	20,576.160
01/12/2015-31/12/2015	34,094.720	34,094.720	34,094.720
Sub-total for 2015	167,337.280	167,337.280	167,337.280
01/01/2016-31/01/2016	9,076.320	9,076.320	9,076.320
01/02/2016-29/02/2016	21,589.920	21,589.920	21,589.920
01/03/2016-31/03/2016	16,332.800	16,332.800	16,332.800
01/04/2016-30/04/2016	7,826.720	7,826.720	7,826.720
01/05/2016-31/05/2016	14,947.680	14,947.680	14,947.680
01/06/2016-30/06/2016	7,481.760	7,481.760	7,481.760
01/07/2016-31/07/2016	10,489.600	10,489.600	10,489.600
01/08/2016-31/08/2016	8,319.520	8,319.520	8,319.520
01/09/2016-30/09/2016	9,669.440	9,669.440	9,669.440
01/10/2016-31/10/2016	14,241.920	14,241.920	14,241.920
01/11/2016-30/11/2016	21,917.280	21,917.280	21,917.280
01/12/2016-31/12/2016	21,785.280	21,785.280	21,785.280
Sub-total for 2016	163,678.240	163,678.240	163,678.240
01/01/2017-31/01/2017	16,688.320	16,688.320	16,688.320
01/02/2017-28/02/2017	21,604.000	21,604.000	21,604.000
01/03/2017-31/03/2017	21,720.160	21,720.160	21,720.160
01/04/2017-30/04/2017	11,441.760	11,441.760	11,441.760
01/05/2017-31/05/2017	8,312.480	8,312.480	8,312.480
01/06/2017-30/06/2017	13,303.840	13,303.840	13,303.840
01/07/2017-31/07/2017	8,398.720	8,398.720	8,398.720
01/08/2017-13/08/2017	10,220.320	10,220.320	10,220.320
Sub-total for 2017	111,689.600	111,689.600	111,689.600
Total for the monitoring period	796,736.160	796,736.160	796,736.160

Table 6 Total electricity imported from the grid by 2954 Project and the Project ($EG_{import,total}$)

Monitoring Period	Meter readings (MWh)	Sales receipts (MWh)	Conservative value after crosscheck (MWh)
	J	K	L=Max(J,K)
01/01/2013-31/01/2013	15.136	15.136	15.136
01/02/2013-28/02/2013	13.376	13.376	13.376
01/03/2013-31/03/2013	22.176	22.176	22.176
01/04/2013-30/04/2013	11.792	11.792	11.792
01/05/2013-31/05/2013	22.528	22.528	22.528
01/06/2013-30/06/2013	17.600	17.600	17.600
01/07/2013-31/07/2013	25.168	25.168	25.168
01/08/2013-31/08/2013	33.264	33.264	33.264

01/09/2013-30/09/2013	16.720	16.720	16.720
01/10/2013-31/10/2013	21.824	21.824	21.824
01/11/2013-30/11/2013	5.984	5.984	5.984
01/12/2013-31/12/2013	10.032	10.032	10.032
Sub-total for 2013	215.600	215.600	215.600
01/01/2014-31/01/2014	10.384	10.384	10.384
01/02/2014-28/02/2014	57.376	57.376	57.376
01/03/2014-31/03/2014	22.352	22.352	22.352
01/04/2014-30/04/2014	26.928	26.928	26.928
01/05/2014-31/05/2014	17.248	17.248	17.248
01/06/2014-30/06/2014	146.784	146.784	146.784
01/07/2014-31/07/2014	45.056	45.056	45.056
01/08/2014-31/08/2014	35.200	35.200	35.200
01/09/2014-30/09/2014	51.040	51.040	51.040
01/10/2014-31/10/2014	28.864	28.864	28.864
01/11/2014-30/11/2014	16.720	16.720	16.720
01/12/2014-31/12/2014	8.800	8.800	8.800
Sub-total for 2014	466.752	466.752	466.752
01/01/2015-31/01/2015	16.192	16.192	16.192
01/02/2015-28/02/2015	26.400	26.400	26.400
01/03/2015-31/03/2015	14.080	14.080	14.080
01/04/2015-30/04/2015	22.176	22.176	22.176
01/05/2015-31/05/2015	13.024	13.024	13.024
01/06/2015-30/06/2015	13.376	13.376	13.376
01/07/2015-31/07/2015	20.064	20.064	20.064
01/08/2015-31/08/2015	39.248	39.248	39.248
01/09/2015-30/09/2015	29.744	29.744	29.744
01/10/2015-31/10/2015	25.168	25.168	25.168
01/11/2015-30/11/2015	10.208	10.208	10.208
01/12/2015-31/12/2015	6.160	6.160	6.160
Sub-total for 2015	235.840	235.840	235.840
01/01/2016-31/01/2016	5.456	5.456	5.456
01/02/2016-29/02/2016	7.216	7.216	7.216
01/03/2016-31/03/2016	16.544	16.544	16.544
01/04/2016-30/04/2016	26.224	26.224	26.224
01/05/2016-31/05/2016	17.248	17.248	17.248
01/06/2016-30/06/2016	31.328	31.328	31.328
01/07/2016-31/07/2016	19.008	19.008	19.008
01/08/2016-31/08/2016	33.088	33.088	33.088
01/09/2016-30/09/2016	24.992	24.992	24.992
01/10/2016-31/10/2016	18.128	18.128	18.128
01/11/2016-30/11/2016	8.272	8.272	8.272
01/12/2016-31/12/2016	3.872	3.872	3.872
Sub-total for 2016	211.376	211.376	211.376
01/01/2017-31/01/2017	1.408	1.408	1.408
01/02/2017-28/02/2017	13.200	13.200	13.200
01/03/2017-31/03/2017	13.904	13.904	13.904
01/04/2017-30/04/2017	21.648	21.648	21.648
01/05/2017-31/05/2017	38.544	38.544	38.544
01/06/2017-30/06/2017	23.760	23.760	23.760
01/07/2017-31/07/2017	22.704	22.704	22.704
01/08/2017-13/08/2017	9.152	9.152	9.152
Sub-total for 2017	144.320	144.320	144.320
Total for the monitoring period	1,273.888	1,273.888	1,273.888

Table 7 Electricity exported to the grid by the Project ($EG_{export,y}$)

Monitoring Period	$EG_{export,y}$ (MWh)
	$M=(I^*C/(C+F))$
01/01/2013-31/01/2013	8,081.255
01/02/2013-28/02/2013	9,152.205
01/03/2013-31/03/2013	6,260.013
01/04/2013-30/04/2013	10,589.559
01/05/2013-31/05/2013	7,587.498
01/06/2013-30/06/2013	7,370.858
01/07/2013-31/07/2013	6,591.281
01/08/2013-31/08/2013	5,703.165
01/09/2013-30/09/2013	9,651.152
01/10/2013-31/10/2013	9,452.689
01/11/2013-30/11/2013	14,249.760
01/12/2013-31/12/2013	13,749.366
Sub-total for 2013	108,438.800
01/01/2014-31/01/2014	7,056.891
01/02/2014-28/02/2014	10,993.560
01/03/2014-31/03/2014	11,006.355
01/04/2014-30/04/2014	7,840.917
01/05/2014-31/05/2014	8,219.011
01/06/2014-30/06/2014	4,364.194
01/07/2014-31/07/2014	4,379.108
01/08/2014-31/08/2014	4,090.440
01/09/2014-30/09/2014	3,931.341
01/10/2014-31/10/2014	8,022.564
01/11/2014-30/11/2014	8,047.047
01/12/2014-31/12/2014	17,344.727
Sub-total for 2014	95,296.156
01/01/2015-31/01/2015	9,213.239
01/02/2015-28/02/2015	7,494.678
01/03/2015-31/03/2015	9,298.722
01/04/2015-30/04/2015	6,646.047
01/05/2015-31/05/2015	6,110.382
01/06/2015-30/06/2015	5,846.307
01/07/2015-31/07/2015	6,037.157
01/08/2015-31/08/2015	2,471.805
01/09/2015-30/09/2015	5,771.325
01/10/2015-31/10/2015	5,916.337
01/11/2015-30/11/2015	12,131.095
01/12/2015-31/12/2015	20,860.782
Sub-total for 2015	97,797.876
01/01/2016-31/01/2016	4,976.712
01/02/2016-29/02/2016	12,692.139
01/03/2016-31/03/2016	9,940.595
01/04/2016-30/04/2016	4,225.549
01/05/2016-31/05/2016	9,225.638
01/06/2016-30/06/2016	3,992.501
01/07/2016-31/07/2016	6,291.825
01/08/2016-31/08/2016	4,512.491
01/09/2016-30/09/2016	5,573.144
01/10/2016-31/10/2016	7,396.196
01/11/2016-30/11/2016	12,897.226
01/12/2016-31/12/2016	13,358.425

Sub-total for 2016	95,082.442
01/01/2017-31/01/2017	9,214.809
01/02/2017-28/02/2017	13,366.282
01/03/2017-31/03/2017	12,557.421
01/04/2017-30/04/2017	6,654.785
01/05/2017-31/05/2017	5,156.710
01/06/2017-30/06/2017	7,318.915
01/07/2017-31/07/2017	4,557.370
01/08/2017-13/08/2017	5,808.178
Sub-total for 2017	64,634.470
Total for the monitoring period	461,249.743

Net Electricity supplied to the SCPG by the project

Monitoring Period	$EG_y = EG_{export,y} - EG_{import,total}$ (MWh)
	N=M-L
01/01/2013-13/08/2017	459,975.855

$$BE_y = EG_y \times EF_{grid,CM,y} = 459,975.855 \text{ MWh} \times 0.8933 \text{ tCO}_2\text{e/MWh} = 410,896 \text{ tCO}_2\text{e}.$$

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

>>

According to ACM0002 (Version 09), no Project Emissions is to be counted by the Project.

Hence, $PE_y = 0 \text{ tCO}_2\text{e}$

E.3. Calculation of leakage emissions

>>

According to applied methodology ACM0002 in the registered PDD, the leakage of the 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	410,896	0	-	0	410,896	410,896

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)
410,896	398,187 ¹

¹ According to the registered PDD, the emission reductions of the project are estimated to be 86,203 tCO₂e per annum. This monitoring period from 01/01/2013 to 13/08/2017 has 1,686 days. As a result, the estimated emission reductions during the monitoring period are calculated as: 86,203 tCO₂e / 365 days * 1,686 days = 398,187 tCO₂e.

E.6. Remarks on increase in achieved emission reductions

>>

The comparison shows that the actual emission reduction is a little higher than the expectation 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		