



Monitoring report form for CDM project activity
(Version 06.0)

MONITORING REPORT

Title of the project activity	La Venta II	
UNFCCC reference number of the project activity	0846	
Version number of the PDD applicable to this monitoring report	11 (20/03/2014)	
Version number of this monitoring report	1	
Completion date of this monitoring report	14/11/2017	
Monitoring period number	Monitoring Period: 8	
Duration of this monitoring period	01/01/2016 – 31/12/2016	
Monitoring report number for this monitoring report	1	
Project participants	Mexico: Comisión Federal de Electricidad; International Bank for Reconstruction and Development (IBRD) as the Trustee of the Spanish Carbon Fund (SCF) Kingdom of Spain: Ministry of Agriculture, Food and Environment and Ministry of Economy and Competitiveness ; AZULIBER 1, S.L. ; Comercial De Materiales De Construcción, S.L. (COMAC) ; Compania Espanola De Petroleos, S.A. (CEPSA) ; Endesa Generacion, S.A. ; E.ON Generacion S.L ; Gas Natural SDG, S.A. ; Hidroelectrica Del Cantabrico, S.A. ; IBERDROLA Generacion S.A.U ; Repsol YPF S.A. ; Zeroemissions Carbon Trust, S.A. ; Cementos Portland Valderrivas S.A.; International Bank for Reconstruction and Development (IBRD) as Trustee of the Spanish Carbon Fund (SCF)	
Host Party	Mexico	
Sectoral scopes	1 : Energy industries (renewable - / non- renewable sources)	
Applied methodologies and standardized baselines	ACM0002 ver. 14 - Grid-connected electricity generation from renewable sources	
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
		98,417 tCO ₂ e

Amount of GHG emission reductions or net anthropogenic GHG removals estimated ex ante for this monitoring period in the PDD	164,634 tCO ₂ e
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SECTION A. Description of project activity**A.1. General description of project activity**

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La Venta II wind power plant (La Venta II) consists of 98 wind turbine-generator engines (WTGs) each of 0.85 MW capacity, adding up to a total installed capacity of 83.3 MW. The WTGs are distributed in 4 rows approximately 600 meters away from each other. The WTGs are approximately 130 meters away from each other; the height of the WTGs is 44 meters. The maximum estimated generation per year is 307,728 MWh.

The spatial extent of the project boundary is the IMNG. The project is connected to the IMNG through La Venta II substation of the IMNG, which belongs to the Comisión Federal de Electricidad ("CFE"). The generated electricity is dispatched to the grid and commercialized by CFE, which is the developer operator and owner of the project. The project has obtained all applicable permissions/authorizations required for its construction and operation, and complies with all environmental requirements mandated by SEMARNAT (Mexican Environmental authority and Designated National Authority).

The project was fully commissioned on January 5, 2007, and has been in continuous operation since then. Total emission reductions for this monitoring period are 98,417 tCO₂e.

A.2. Location of project activity

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- (a) Mexico
- (b) Southern State of Oaxaca
- (c) Ejido La Venta, Juchitan de Zaragoza Municipality
- (d) Latitude 16.59 and Longitude -94.819722

A.3. Parties and project participants

Parties involved	Project participants	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
Mexico (host Party)	<u>Public entity</u> Comisión Federal de Electricidad	No
IBRD	<u>Public entity</u> International Bank for Reconstruction and Development (IBRD) as the Trustee of the Spanish Carbon Fund (SCF)	No
Spain	Ministry of Agriculture, Food and Environment and Ministry of Economy and Competitiveness ; AZULIBER 1, S.L. ; Comercial De Materiales De Construcción, S.L. (COMAC) ; Compania Espanola De Petroleos, S.A. (CEPSA) ; Endesa Generacion, S.A. ; E.ON Generacion S.L ; Gas Natural SDG, S.A. ; Hidroelectrica Del Cantabrico, S.A. ; IBERDROLA Generacion S.A.U ; Repsol YPF S.A. ; Zeroemissions Carbon Trust, S.A. ; Cementos Portland Valdeirivas S.A.	Yes

A.4. Reference to applied methodologies and standardized baselines

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ACM0002 ver. 14 - Grid-connected electricity generation from renewable sources.

A.5. Crediting period type and duration

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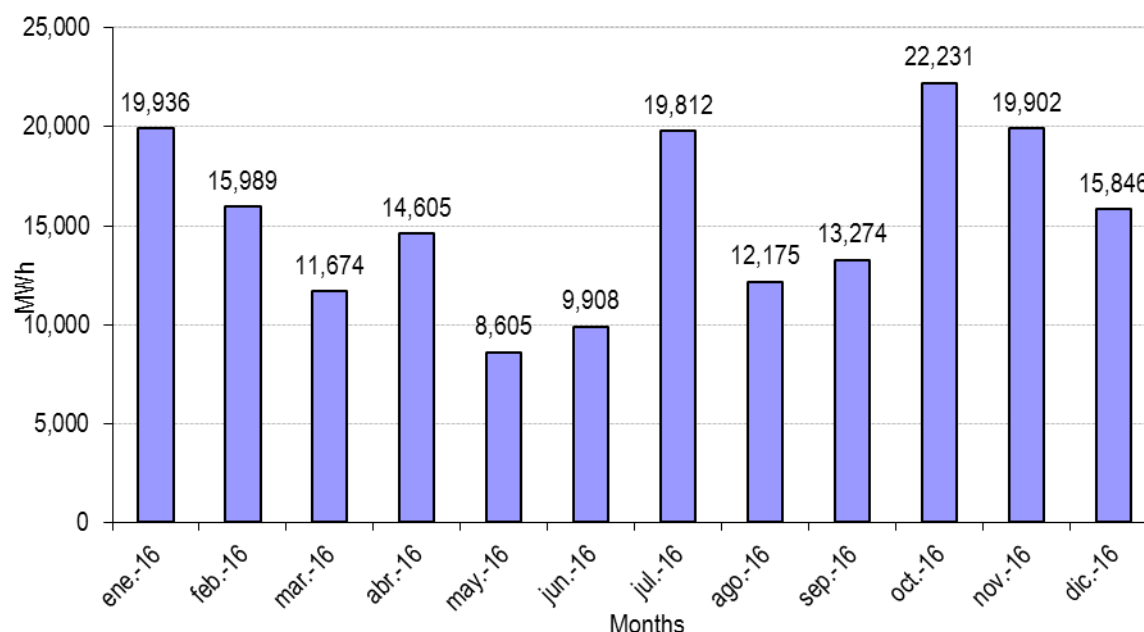
Type: Renewable crediting period

Starting date: 01/07/2014

Duration: 7 years 0 months

SECTION B. Implementation of project activity**B.1. Description of implemented project activity**Implementation Status

La Venta II was commissioned on January 5, 2007, and it has been in continuous operation since then. During this monitoring period La Venta II net generation registered at 34.5 kV was 183,958 MWh. The chart below shows the monthly generation, which varied mainly due to the variability of the wind regimes.



There were no events that occurred during the current monitoring period that would impact the applicability of the methodology.

The most important causes determining the above-mentioned variability in monthly generation are linked to:

- Damage suffered by the components of the wind generators due to regular maintenance and / or breakdowns.
- Wind regime outside the operating margin of the wind turbine (4 – 25 m/s).

These events lead to the breakdown of plant unavailability, as shown in the table below¹ (source: CFE). The ER calculations reflect these events.

¹ Detailed information has been provided to the DOE during site visit.

La Venta II plant unavailability (% of total hours/yr)		
	January. 2016	December-2016
Breakdowns	9	9
Maintenance	18	22
External conditions	3	2
No productive wind	28	27
Plant availability	42	40
	100.00	100.00

CFE has been analysing and implementing strategies and hardware technologies to mitigate the impacts of these causes, such as allocating additional budget to maintenance, updating the control algorithm of the wind turbines as well as installing a harmonic filter at the power substation.

Description of the Installed Technology

La Venta II has a total installed capacity of 83.3 MW and consists of 98 Gamesa G52 wind turbines with 850 kW of rated capacity installed in towers of 44 meters high. Each rotor has a diameter of 52 meters with 3 blades of 25.3 meters long each. The WTGs are distributed in 4 rows about 600 meters away from each other and each WTG is approximately 130 meters away from the adjacent ones.

The cut-in and cut-out wind speeds for these wind turbines are 4 m/s and 25 m/s respectively. The output voltage of each generator is 690 V. The voltage is increased from 690 V to 34.5 kV through a transformer located in each of the towers of the wind turbines before sending the electricity to the substation. The wind farm is integrated by 5 electric circuits which collect the electricity generated by the 98 WTGs and sends it to La Venta II substation. The total generated electricity is delivered to the grid and commercialized by CFE, which is the project developer, operator and owner of La Venta II. La Venta II's minimum expected plant operating life is 21 years.

B.2. Post-registration changes

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

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N/A

B.2.2. Corrections

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N/A

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

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N/A

B.2.4. Inclusion of monitoring plan

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N/A

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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N/A

B.2.6. Changes to project design

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N/A

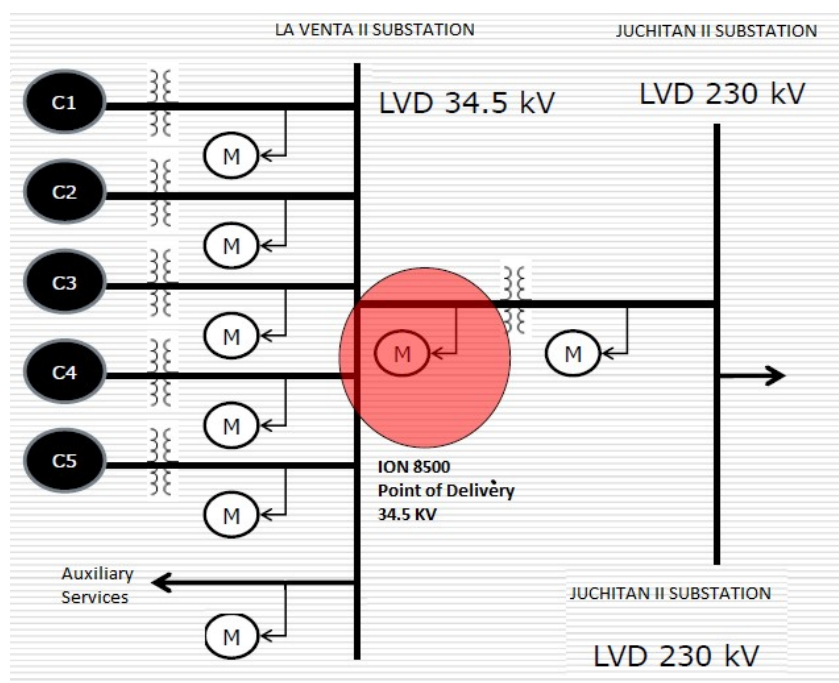
SECTION C. Description of monitoring system

As per the registered PDD, the only parameter to be monitored for the ERs calculation is La Venta II's electricity generation.

The PDD specifies that Centro Nacional de Control de Energia (CENACE, the system operator) will be the solely provider of La Venta II's generation data.

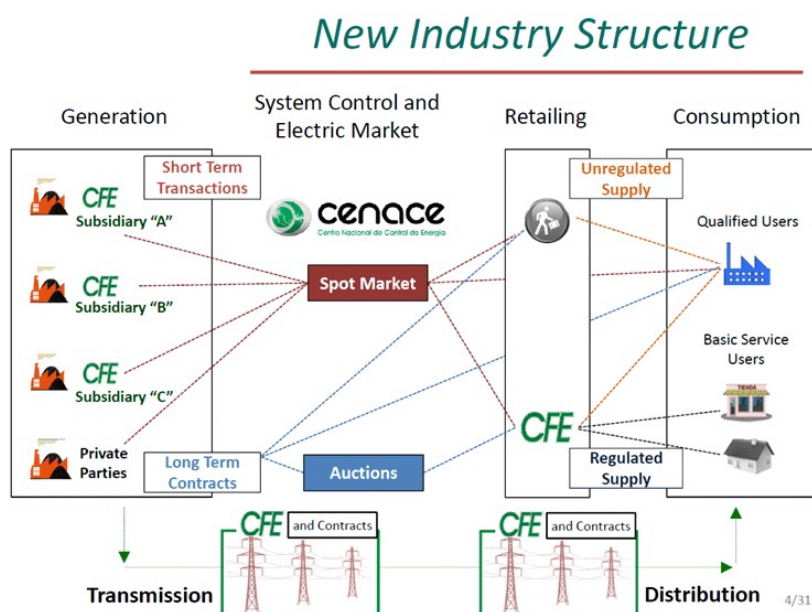
However, in the year 2014 entered into force the energy reform in Mexico y many changes have been occurred since then. The law of the Electricity Industry (LIE) establishes the creation of a wholesale electricity market (MEM) and indicated that CENACE must be an independent entity to operate and monitor the market (figure 3). So the generation data is now available only to the market participant representing La Venta II wind power plant through regulatory mechanisms. Even so, the hourly measurements of the electricity generated by La Venta II still recorded by CFE from the ION 8650 meter located in La Venta II substation (serial number MW-1407A459-01) (see figure 2).

Fig.2. One line diagram and monitoring point



CENACE's measurement system is still in operation but it is being updated and adapted to the new regulations of the electric Market.

Fig.3. General Structure of the new electric industry in Mexico.



The ION 8650 meter is still subjected to regular maintenance and testing regime, which includes:

- Daily monitoring by Internet, and in real time, of the power, electric tension and other variables;
- Processing per month the historical record of the generation measured by the meter;
- A monthly energy balance per installation;
- Cleaning of the meter and turning of the screws further if they needed to.

With these checks it is possible to detect any errors that the meters may be presenting.

All monitored data will be archived for at least two years after the end of the crediting period of the project.

At this time, it is possible to use the historical record at 34.5 kV of the meter to calculate the ER's for this period.

Data Crosschecking

According to CFE, there are no receipts of sales of the energy generated by La Venta II delivered to the next recipient of this energy: CFE Transmission Area. Thus, receipt of sales cannot be used for cross-checking of La Venta's II generation.

Because of the electrical reform in México, CFE Generation area is in transition to adopt the new regulations to operate according the Electric Market.

CFE Transmission and CFE Generation Areas still conciliate every month the energy delivered by La Venta II (format 03) at the internal official point of delivery at 230 kV. This conciliation consists of an agreement for the energy delivered from Generation Area to Transmission Area. In Every month (since 2016), both parties sign an official internal document named **"Cédula de Conciliación de Entrega-Recepción de Energía (format 03)"** that specifies the amount of delivered. This is the official document used in the cross-checking process.

Furthuermore, CFE Generation and CENACE started to elaborate the document **"Formato de Formalización por punto de Medición"** to conciliate the energy delivered and received, respectably. It is no clear if it will be continued once the regulations of electric market are established completely. This document could be complementing the cross-checking process for now.

Roles and Responsibilities

As per the registered PDD, CFE has an Emissions Reduction Calculation Procedure (ERCP) with a defined organizational structure for La Venta II Project. This also includes a Quality Assurance and Control procedures in line with CDM requirements.

Fig.4. ERCP Organizational Structure

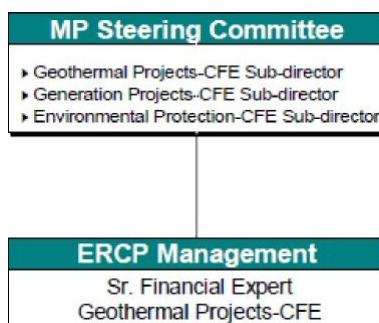


Fig.5. QA /QC procedures

- Data**
- ▶ The project generation data.
 - ▶ Make coordination with CENACE to be able to implement this document.
 - ▶ Check calibration of electricity meters, periodically.

- Quality of Data Collection**
- ▶ Which data comes? The above
 - ▶ By what means does it come? By E-mail/ CD
 - ▶ How does it come? In Excel
 - ▶ How frequently does it come? Yearly
 - ▶ From whom does it come? From CENACE
 - ▶ To whom does it comes? ERCP Manager

- Quality of Data Processing**
- ▶ Original Data
 - ▶ Organized Data
 - ▶ Entered Data
 - ▶ Processed Data
 - ▶ Result

- Quality of Data Storage**
- ▶ Prevent Excel versioning problem, by keeping "a new" Excel software package.
 - ▶ Keep all data for 2 years after the first crediting period (9 years).
 - ▶ Save the ERCP file with the last date in which an alteration was made.
 - ▶ Keep all written documentation in a folder.

- Quality of Data Delivery**
- ▶ Provide to the verifier e-mails /CD through which the data provider (CENACE) delivered the original data
 - ▶ Provide to the verifier receipt of sales to final clients
 - ▶ Provide to the verifier all calculations made (all steps of data processing) by showing all preliminary versions of spreadsheets saved in disk

Roles and responsibilities for the monitoring and reporting activities are divided among the different areas of CFE, as follows:

CFE Generation Area at La Venta II

- General operation of the plant.
- Preparation of the "Cédula de Registro de Lecturas Mensual".

CFE Transmission Area at La Venta II Substation

- Calibration and maintenance of the meters.
- Validation of the information in the "Cédula de Registro de Lecturas Mensual" (Data Cross-Checking process for the energy delivered to the grid).

CENACE

- Operation and maintenance of SIME system, and implementing regulations of the electric market.

CFE Geothermal Projects Area

- Data gathering from CFE Generation and CFE Transmission Areas.
- Quality control of the information provided.
- Calculation of the project GHG emission reductions.
- Data processing and preparation of the Monitoring Report.

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	Combined margin CO2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system"

Source of data	Revised 2006 IPCC and Electricity Sector Outlooks publications: 2013-2027, 2012-2026, 2010-2025, 2009-2016, 2008-2017, 2007-2016. 23. Information on net electricity generation in 2012 was taken from CFE report named "Generation 2012"
Value(s) applied	0.535
Choice of data or measurement methods and procedures	Calculated according to the "Tool to calculate the emission factor for an electricity system" Version 04.0.0.
Purpose of data/parameter	Baseline emissions
Additional comments	This value is fixed for the crediting period.

D.2. Data and parameters monitored

(Copy this table for each data or parameter.)

Data/Parameter	EG _{facility,y}
Unit	MWh/yr
Description	Quantity of net electricity generation supplied by the project plant/unit to
Measured/calculated/default	the grid in year y
Source of data	Measured by bi-directional electricity meters
Value(s) of monitored parameter	Measured on site at La Venta II substation and also automatically transmitted to CENACE.
Monitoring equipment	183,958.15
Measuring/reading/recording frequency	Name: power meter
Calculation method (if applicable)	Type: ION 8650
QA/QC procedures	Accuracy Class: 0.2
Purpose of data/parameter	Serial Number: PQ0604A002-03
Additional comments	Calibration Frequency: Once a year

D.3. Implementation of sampling plan

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N/A. The PDD does not contain a sampling plan.

SECTION E. Calculation of emission reductions or net anthropogenic removals

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

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Baseline emissions include only CO₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity, calculated as follows:

Baseline emissions for the Project are calculated by using the formula:

$$BE_y = EG_y \times EF_{GRID} = 183,958 \text{ MWh} \times 0.535 \text{ tCO}_2\text{e/MWh} = 98,417 \text{ tCO}_2\text{e}$$

Where:

BE_y = Baseline emissions in year y (tCO₂/yr)

$EG_y = EG_{\text{facility},y}$ = Electricity generation delivered to grid, net of internal consumptions at La Venta II (MWh)

$EF_{GRID} = EF_{\text{grid,CM},y}$ = Grid emission factor (tCO₂/MWh).

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

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There are no project emissions (PE_y) for the project activity as per the registered PDD.

E.3. Calculation of leakage emissions

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There are no leakage emissions (LE_y) for the project activity as per the registered PDD.

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	98,417				98,417	98,417

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)
98,417	164,634

E.6. Remarks on increase in achieved emission reductions

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The total emission reductions for the period are lower than the ex-ante calculations as per the registered PDD due to lower energy productions during the monitored period.

This was mainly due to the variability of the wind (i.e., wind outside the operating margin of 4 – 25 m/s) and to the recorded downtime hours (please refer to Section B1) related to the following:

- Damage suffered by the components of the wind generators due to maintenance and / or breakdowns.
- Disconnection from the grid due to harmonic and resonant phenomenon during generation periods.

Attachment. Instructions for completing this form

1. General instructions

1. When reporting on monitoring results and completing this form, in addition to applying the “CDM project standard for project activities” (hereinafter referred to as the project standard), the selected methodologies and, where applicable, the selected standardized baselines, consult the “Rules and Reference” section of the UNFCCC CDM website. This section contains all regulatory documents for the CDM, such as standards (including methodologies, and standardized baselines), procedures, tools, guidelines, clarifications, forms and the “Glossary: CDM terms”.
2. Make any data, values and formulae included in spreadsheets accessible and verifiable.
3. Complete this form in English. Prepare all attached documents in English, or if their originals were prepared in another language, provide a full translation of the relevant sections of these documents in English.
4. Complete this form using the same format without modifying its font, headings or logo, and without any other alteration to the form.
5. Do not modify or delete tables and their columns in this form. Add rows to the tables as needed. Add additional appendices as needed.
6. If a section of the form is not applicable, explicitly state that the section is left blank intentionally.
7. Use an internationally recognized format for presentation of values. For example, use digit grouping in thousands and mark a decimal point with a dot (.), not with a comma (,).
8. Complete this form deleting this attachment.

2. Specific instructions

1. Indicate the following information on the cover page:
 - (a) Title of the project activity;
 - (b) UNFCCC reference number of the project activity;
 - (c) Version number of the PDD applicable to this monitoring report;
 - (d) Version number of this monitoring report;
 - (e) Completion date of this monitoring report: Indicate the date in DD/MM/YYYY;
 - (f) Monitoring period number: The monitoring period number is an ordinal number referring to the chronological order of monitoring periods (e.g. "first monitoring period");
 - (g) Duration of this monitoring period: Indicate the duration with the first and last dates in DD/MM/YYYY – DD/MM/YYYY;
 - (h) Monitoring report number for this monitoring period: Applicable when preparing multiple separate monitoring reports for the monitoring period for different batches of small-scale project activities in the registered bundle of small-scale project activities. To distinguish between such multiple separate monitoring reports, assign an ordinal number from 1 upwards (e.g. 1, 2, 3...*n*) to each monitoring report in the consecutive order;
 - (i) Project participants;
 - (j) Host Party;
 - (k) Sectoral scopes: List all sectoral scopes applicable to the project activity;
 - (l) Applied methodologies and standardized baselines: List all the methodologies and combination of methodologies, and where applicable, the standardized baselines, applied to the project activity;
 - (m) Amount of GHG emission reductions or net anthropogenic GHG removals achieved by the project activity in this monitoring period: Provide the total amount in tonnes of CO₂ equivalent;
 - (n) Amount of GHG emission reductions or net anthropogenic GHG removals estimated ex ante for this monitoring period in the PDD: Provide the total amount in tonnes of CO₂ equivalent based on the ex ante estimation in the PDD, with adjustment for the comparable period, as appropriate.

SECTION A. Description of project activity

A.1. General description of project activity

1. Provide a brief summary of the project activity in terms of the purpose of the project activity and the measures taken for GHG emission reductions or net anthropogenic GHG removals.

A.2. Location of project activity

1. Provide details of the physical/geographical location of the project activity, including physical address (host Party, region/state/province, city/town/community, street name and number) and a map, and if necessary, other information allowing for unique identification of the project activity (e.g. geographic coordinates).
2. Do not exceed one page for the description of location.

A.3. Parties and project participants

1. List in the table the Parties and the project participants involved in the project activity.

A.4. Reference to applied methodologies and standardized baselines

1. Indicate the exact reference (number, title, version) of:
 - (a) The applied methodologies or combination of methodologies (e.g. ACM0001: "Large-scale consolidated methodology: Flaring or use of landfill gas" (version 15.0));
 - (b) Any tools and other methodologies to which the applied methodologies refer (e.g. "Methodological tool: Tool for the demonstration and assessment of additionality" (version 07.0.0));
 - (c) The applied standardized baselines, where applicable (e.g. ASB0001 "Standardized baseline: Grid emission factor for the Southern African power pool" (version 01.0)).
2. Refer to the UNFCCC CDM website for the exact reference of the applied methodologies, tools and standardized baselines.

A.5. Crediting period type and duration

1. Provide the type (fixed or renewable), and the duration (with the start and end dates in DD/MM/YYYY – DD/MM/YYYY) of the crediting period corresponding to this monitoring period.

SECTION B. Implementation of project activity

B.1. Description of implemented project activity

1. Provide information on the implementation status of the project activity in accordance with the applicable provisions on the description of implemented registered CDM project activities in the project standard, including:
 - (a) Description of the installed technology, technical processes and equipment;
 - (b) Information on the implementation and actual operation of the project activity, including relevant dates (e.g. construction, commissioning, start of operation).
2. For the description of the installed technologies, technical processes and equipment, include diagrams, where appropriate.
3. If applicable, present information on any post-registration changes to the project activity in section B.2 debajo de.

B.2. Post-registration changes

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

1. Indicate whether there are temporary deviations from the registered monitoring plan, applied methodologies or standardized baselines during this monitoring period.
2. If there are such deviations, for each deviation, provide a description of the nature, extent and duration of the non-conforming monitoring period, and:
 - (a) Propose alternative monitoring arrangements for the non-conforming monitoring period in accordance with the applicable provisions in the project standard; or
 - (b) Apply the most conservative values approach in accordance with the applicable provisions in the project standard.
3. Provide the version number and the completion date of the DOE verification report.

B.2.2. Corrections

1. Indicate whether there are corrections to project information or parameters fixed at the registration or renewal of crediting period of the project activity.
2. If there are such corrections, list all the corrections since the registration of the project activity, separating them into the following categories:
 - (a) Corrections that have been approved by the Board as applicable from the period prior to this monitoring period;
 - (b) Corrections that have been approved by the Board as applicable from this monitoring period;
 - (c) Corrections that are being submitted with this monitoring report as part of the request for issuance (post-registration change – issuance track) as applicable from this monitoring period.
3. For the corrections referred to in 1(a) and 1(b) above, provide the approval dates and reference numbers of the post-registration changes.
4. For the corrections referred to in 1(c) above, provide the version number and the completion date of the revised PDD and of the DOE validation report.

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

1. Indicate whether there are changes to the start date of the crediting period fixed at the registration of the project activity.
2. If there are such changes, list all the changes since the registration of the project activity, separating them into the following categories:
 - (a) Changes that have been approved by the Board or notified to the secretariat and that do not affect the start of this monitoring period (i.e. any of the changed start dates are prior to the start of this monitoring period);
 - (b) Change that has been approved by the Board or notified to the secretariat and that affects the start of this monitoring period (i.e. the changed start date is the start of this monitoring period);
 - (c) Change that affects the start of this monitoring period and is being submitted with this monitoring report as part of the request for issuance (post-registration change – issuance track) and that affects the start of this monitoring period.
3. For the changes referred to in 1(a) and 1(b) above, provide the approval dates and reference numbers of the post-registration changes, or provide the notification date.
4. For the changes referred to in 1(c) above, provide the version number and the completion date of the revised PDD and of the DOE validation report.

B.2.4. Inclusion of monitoring plan

1. Indicate whether there is a post-registration change to include a monitoring plan into the PDD, for which the delayed submission of the monitoring plan was chosen by the project participants at the time of the registration of the project activity.
2. If there is such change, indicate which one of the following categories that the change falls under:
 - (a) Inclusion has been approved by the Board as applicable from the period prior to this monitoring period;
 - (b) Inclusion has been approved by the Board as applicable from this monitoring period (i.e. this is the first monitoring period for the project activity); or
 - (c) Inclusion is being submitted together with this monitoring report (post-registration change – issuance track) as applicable from this monitoring period.
3. For the case referred to in 1(a) or 1(b) above, provide the approval date and reference number of the post-registration change.
4. For the case referred to in 1(c) above, provide the version number and the completion date of the revised PDD and of the DOE validation report.

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

1. Indicate whether there are permanent changes to the registered monitoring plan, or permanent deviation of monitoring from applied methodologies, applied standardized baseline, or other applied standards or tools.
2. If there are such changes, list all the changes since the registration of the project activity, separating them into the following categories:
 - (a) Changes that have been approved by the Board as applicable from the period prior to this monitoring period;
 - (b) Changes that have been approved by the Board as applicable from this monitoring period;
 - (c) Changes that are being submitted with this monitoring report as part of the request for issuance (post-registration change - issuance track) as applicable from this monitoring period.
3. For the changes referred to in 1(a) and 1(b) above, provide the approval dates and reference numbers of the post-registration changes.
4. For the changes referred to in 1(c) above, provide the version number and the completion date of the revised PDD and of the DOE validation report.

B.2.6. Changes to project design

1. Indicate whether there are any changes to the project design of the project activity.
2. If there are such changes, list all the changes since the registration of the project activity, separating them into the following categories:
 - (a) Changes that have been approved by the Board as applicable from the period prior to this monitoring period;
 - (b) Changes that have been approved by the Board as applicable from this monitoring period;
 - (c) Changes that are being submitted with this monitoring report as part of the request for issuance (post-registration changes - issuance track) as applicable from this monitoring period.
3. For the changes referred to in 1(a) and 1(b) above, provide the approval dates and reference numbers of the post-registration changes.
4. For the changes referred to in 1(c) above, provide the version number and the completion date of the revised PDD and of the DOE validation report.

SECTION C. Description of monitoring system

1. Provide a description of the monitoring system in accordance with the applicable provisions on the description of monitoring system in the project standard and the monitoring plan in the registered PDD. Include line diagrams showing all relevant monitoring points.

SECTION D. Data and parameters

1. Provide information on all data and parameters in accordance with the applicable provisions on data and parameters in the project standard, using the tables provided in sections D.1 and D.2.
2. For "Purpose of data/parameter" in the tables in D.1 and D.2, choose one of the following options:
 - (a) Calculation of baseline emissions or baseline net GHG removals;
 - (b) Calculation of project emissions or actual net GHG removals;
 - (c) Calculation of leakage.
3. Where the applied standardized baselines standardize baseline emissions, apply the standardized values of the parameters in sections D.1 and/or D.2 in accordance with the applicable provisions related to data and parameters in the project standard.

D.1. Data and parameters fixed ex ante

1. Include data that are fixed at the registration or at the renewal of crediting period of the project activity, and were used during this monitoring period, by replicating the information from the registered PDD.
2. For "Value(s) applied", use one table to report multiple values referring to the same data and parameter, if applicable.

D.2. Data and parameters monitored

1. Include data and parameters that were monitored during this monitoring period.
2. For "Monitoring equipment" in the table, provide information on type, accuracy class, serial number, calibration frequency, date of last calibration and validity.
3. For "Value(s) of monitored parameter", use one table to report multiple values referring to the same data and parameter, if applicable.
4. Describe details in spreadsheets if appropriate, attach them to the monitoring report, and provide the reference to the spreadsheets in this section.

D.3. Implementation of sampling plan

1. If a sampling plan was implemented to determine parameter values, provide a description of how the sampling for those parameters was implemented in accordance with the sampling plan in the registered monitoring plan, including the following information:
 - (a) Description of implemented sampling design;
 - (b) Collected data (attach and provide reference to spreadsheets, if necessary);
 - (c) Analysis of the collected data;
 - (d) Demonstration that the required confidence/precision has been met;
 - (e) Demonstration that the samples were randomly selected and are representative of the population.
2. Attach to the monitoring report any spreadsheets to present full calculations or detailed information.

SECTION E. Calculation of emission reductions or net anthropogenic removals

1. For the parameter global warming potentials (GWPs), from 1 January 2013, apply the values adopted by decision 4/CMP.7 to calculate GHG emission reductions or net anthropogenic GHG removals achieved in the second commitment period of the Kyoto Protocol in accordance with the applicable provisions in the project standard.

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

1. Provide sample calculations for all formulae used to calculate baseline GHG emissions or baseline net GHG removals, applying actual values. Attach spreadsheets to the monitoring report to present full calculations for this monitoring period.

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

1. Provide sample calculations for all formulae used to calculate project GHG emissions or actual net GHG removals, applying actual values. Attach spreadsheets to the monitoring report to present full calculations for this monitoring period.

E.3. Calculation of leakage emissions

1. Provide sample calculations for all formulae used to calculate leakage GHG emissions, applying actual values. Attach spreadsheets to the monitoring report to present full calculations for this monitoring period.

E.4. Calculation emission reductions or net anthropogenic removals

1. Summarize the results of sections E.1, E.2 and E.3 above, and provide GHG emission reductions or net anthropogenic GHG removals for this monitoring period, using the table.
2. If the monitoring period starts before 1 January 2013 and ends anytime thereafter, provide GHG emission reductions or net anthropogenic GHG removals achieved for the following two periods separately by allocating the raw data into the two periods in accordance with the applicable provisions in the project standard, and multiplying them with the applicable GWPs:
 - (a) Before 1 January 2013 (first commitment period);
 - (b) From 1 January 2013.

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

1. Provide a comparison of the GHG emission reductions or net anthropogenic GHG removals achieved by the project activity during this monitoring period with the amount based on the ex ante estimation in the registered PDD.

E.6. Remarks on increase in achieved emission reductions

1. State whether the actual GHG emission reductions achieved is greater than the amount based on the ex ante estimation in the registered PDD. If so, explain the cause of any increase in the actual GHG emission reductions achieved by the project activity during this monitoring period, including all information that is different from that stated in the registered PDD.
2. This section is not applicable for afforestation and reforestation (A/R) project activities.

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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.

<i>Version</i>	<i>Date</i>	<i>Description</i>
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		