



**Monitoring report form
(Version 05.1)**

Complete this form in accordance with the Attachment "Instructions for filling out the monitoring report form" at the end of this form.

MONITORING REPORT

Title of the project activity	60MW Solar PV - Monte Plata	
UNFCCC reference number of the project activity	8530	
Version number of the monitoring report	01	
Completion date of the monitoring report	22/05/2017	
Monitoring period number and duration of this monitoring period	1 01/06/2013 – 31/12/2016	
Project participant(s)	Electronic J.R.C., S.R.L (private) Foundation myclimate – The Climate Protection Partnership (private) Think Carbon GmbH (private)	
Host Party	Dominic Republic	
Sectoral scope(s)	Energy industries (renewable - / non-renewable sources)	
Selected methodology(ies)	ACM0002: Grid-connected electricity generation from renewable sources Version 13.0	
Selected standardized baseline(s)	-	
Estimated amount of GHG emission reductions or net GHG removals by sinks for this monitoring period in the registered PDD	34,226	
Total amount of GHG emission reductions or net GHG removals by sinks achieved in this monitoring period	GHG emission reductions or net GHG removals by sinks reported up to 31 December 2012	GHG emission reductions or net GHG removals by sinks reported from 1 January 2013 onwards
		17,327

SECTION A. Description of project activity

A.1. Purpose and general description of project activity

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The project activity consists in the installation of a 60MW_n (limited by inverters) photovoltaic Solar Energy Farm, which is considered as a sustainable source of electricity generation. There are no emissions of Green House Gases (GHS) associated with this kind of energy generation.

Until December of 2016, the total nominal capacity of the solar plant is 33,389 kW, and to comply the solar farm as designed, during the 2017 is expected the addition of 35,600 kW as planned.

The project activity is developed by Electronic J.R.C., S.L.R., a 'special purpose vehicle' (SPV) company from the Dominican Republic owned by 'General Energy Solutions' (GES) a Taiwanese company and built, operated and maintained by Soventix GmbH a German company. After construction, the proposed project activity will be the largest solar power plant in Caribbean area, on a total area of 465'000m².

According to the UNEP Green Jobs Report the range of jobs that will be created throughout the lifetime of the project activity oscillates between 208 and 330. The Project Activity during the construction stage in phase 1 (the first 33 MW) has generated 261 jobs. Currently, Operations and Maintenance (O & M) has 16 employees and 35 employees for physical security.¹ With the proposed project activity the Dominican Republic emphasizes its commitment of reducing its GHG emissions and at the same time also decreases its dependence on fossil fuels and related imports.

By the development of the proposed project activity there will be a real and measurable contribution to the sustainable development of the Dominican Republic ("**DomRep**") in the following aspects:

- The project activity is in compliance with all the national environmental initiatives:
 - The "Ley No. 57 – 07 de Incentivo a las Energías Renovables y Regímenes Especiales" promotes the creation of new renewable energy projects in the country, in order to incentive the regional, rural and agro industrial economic development. The Dominican Republic has no meaningful fossil fuel sources, which increases the dependence of foreign sources of energy, having a direct impact on the countries balance of foreign trade.
 - The project activity is in compliance with all the quality conditions established in the "Ley General de Electricidad (125-01)".
- The proposed project activity will produce renewable energy at a production price that is independent from the worldwide market fluctuations and risks for fossil fuels:
 - Having an operative, affordable, reliable and financially stable national energy production matrix is essential for any economic development of any country. Based on a reliable national energy generation matrix, stable supply and affordable energy prices, companies get more confidence and security with regards to their investments, especially in the productive or energy intensive sectors. This leads to the creation of more business opportunities and to increased GDP.
 - During the past three years, Dominican Republic GDP has presented a continuous growth rate of 5.33² meanwhile the electricity sector presented a continuous growth rate of 5.85%³. This means that the electricity demand is growing even faster than the economic activity of the country and new energy sources are needed. If the

¹ According to the information published by the United Nations Environmental Programme: Green Jobs: Towards decent work in a sustainable, low carbon world, table II 1.7 Estimated employment per megawatt, page 102.

² Source: CIA - World Fact Book: Dominican Republic, available at: <https://www.cia.gov/library/publications/the-world-factbook/geos/dr.html>, accessed on 8/06/11

³ Figure elaborated with data supplied by the National Energy Commission (CNE, commission Nacional de Energía)

present trend continues, the most of the new installed capacity additions will be with fossil fuel powered power plants, i.e. diesel aggregates, and fuel oil. This situation will increase the instability of the industrial platform of the country.

- Having an operative, affordable, reliable and financially stable national energy production matrix in addition is essential for any social development of any country. Inhabitants want to rely on stable and affordable energy supply services in order to consume electricity for their basic needs. Electricity in the Dominican Republic is rather expensive, as the generation sector is relying on many expensive or outdate power plants with high operational costs. The willingness of inhabitants to pay for expensive electricity in the Dominican Republic generally is low and hence any price stabilization based on renewable energy enables to bring down the electricity tariffs also for private customers in a medium term. By that the willingness of consumers to pay the electricity bills would increase, which again would permit the sector to provide even cheaper, more reliable and stable power supply, as more means can be re-invested into the entire generation and transmission or distribution system. This positive feedback on long-term supports the development of a cheaper, cleaner and more efficient electricity sector where electricity is affordable to private consumers.
- Employment creation:
 - As mentioned before, during the construction stage of the project activity, around 261 new employment sources have been created in phase 1; during the operation of the power plant, currently, Operations and Maintenance (O & M) has 16 employees and 35 employees for physical security. Also, there is no previous experience of this kind of technology to be installed in the country, hence transfer technology and knowledge to the local technicians and experts will take place on subjects as implementation as well as operation.
- Technology and Knowledge transfer:
 - All the components used for the development of the solar PV plant will be “state of the art” technology.
 - Not only the solar panels will be most modern, also the control systems and the (remote) monitoring of the entire facility are most modern and developed especially for the purpose of solar power projects⁴.
 - Most remarkable is the modern tracking system, which ensures that the solar panels face optimal sun radiation. The tracking system ensures that the panels can be turned around an axis optimizing the radiation received from the sun throughout the day.
 - Transfer of knowledge and capacity building will need to take place as part of the project activity. Extra efforts and expenses need to be undertaken to train new staff and technicians and to hire international experts for the capacity building as well as the O&M activities during operation of the solar PV plant. Also the supply chain of any spare parts is more complex and time consuming, as neither specialized solar energy industry nor manufacturers are domiciled in the Dominican Republic.
- Environmental Impact:
 - All electricity that is being generated by the Solar PV Farm is delivered to the national interconnection grid and will displace electricity that has some GHG emissions associated, proven by the emission factor calculations later on. The project activity basically consists in the electro-chemical transformation of the solar radiation (photons) into electric energy. No other by-products are produced during operation of the project activity.
 - The environmental impact, compared to fossil fuels plants that produce the same amount of electric energy, is negligible. There are no negative impacts to the underlying water deposits and the impacts to local bird species is minimal⁵.

⁴.The equipment to be installed will produce the energy with the quality established by the National Interconnected System, according to the “Ley General de Electricidad” and the “Reglamento de la Ley 125-01” and Reglamento de la Ley 57-07”.

- The site where the project activity will be established was used mainly for agricultural activities; hence no relocation of local communities or individual households will take place and no forestation takes place. A detailed explanation of all the Environmental Impact Assessment and the corrective actions can be found in section D.

Based on the Solar Irradiation Study performed by “M&A Ingeniería, C. por A.”⁶, an annual irradiation hiding the solar panels of 2,088 kWh/m² has been determined.

A.2. Location of project activity

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Country: Dominican Republic

Region: Monte Plata

City: Monte Plata, Cruce de Boronga

A.3. Parties and project participant(s)

Party involved ((host) indicates a host Party)	Private and/or public entity(ies) project participants (as applicable)	Indicate whether the Party involved wishes to be considered as project participant (yes/no)
Dominican Republic (Host)	Electronic J.R.C., S.R.L (private)	No
Switzerland	Foundation myclimate – The Climate Protection Partnership (private)	No
United Kingdom of Great Britain and Northern Ireland	Think Carbon GmbH (private)	No

A.4. Reference of applied methodology and standardized baseline

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The approved baseline and monitoring methodology applied to the project activity is the:

- ACM0002: “Grid-connected electricity generation from renewable sources”, Version 17.0, valid from May 13th 2016 onwards.

Also for the documentation of the Project Activity, the following tools were followed:

- Tool to calculate the emission factor for an electricity system – Version 05.0⁷
- Tool for the demonstration and assessment of additionality - Version 07.0.0⁸

Because the project activity relies on the generation of electricity through the electro-chemical conversion of solar radiation, no associated emissions are generated during the operation, so there will be no leakage emissions considered.

⁵ The details of the environmental affectations are stated in the “Environmental Impact Assessment”, available to the DOE during the validation process.

⁶ Solar Irradiation Study is available to the DOE during the validation process.

⁷ Valid from November 27th 2015 onwards, EB 87 Annex 9

⁸ EB 70, Annex 8, 23th of November 2012.

A.5. Crediting period of project activity

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01/06/2013 – 31/05/2023

A.6. Contact information of responsible persons/entities

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Nicolas Ramirez, Electronic J.R.C., S.R.L.

Franziska Heidenreich, myclimate

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

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The project activity is developed by Electronic J.R.C., S.L.R., a 'special purpose vehicle' (SPV) company from the Dominican Republic owned by 'General Energy Solutions' (GES) a Taiwanese company and built, operated and maintained by Soventix GmbH a German company. After construction, the proposed project activity will be the largest solar power plant in Caribbean area, on a total area of 465'000m².

The project is expected to deliver an annual average of nearly 89,454 MWh of electricity to the National Electric Interconnected System ("**SENI**" by its name in Spanish: "Sistema Eléctrico Nacional Interconectado") with the total capacity. Therefore a total of 270'000 PV modules from GES each with 250 W_p will be installed, connected to 2000 Huawei inverters and 44 medium voltages blocks from Oromazabal delivering the electricity in 6 rings to the power- substation from ABB which is connected to the national grid.

The total area dedicated to the project activity is about 1,080,779 m², which is privately owned by the project participants.

B.2. Post-registration changes**B.2.1. Temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline**

Not applicable.

B.2.2. Corrections

Not applicable.

B.2.3. Changes to start date of crediting period

Not applicable.

B.2.4. Inclusion of a monitoring plan to the registered PDD that was not included at registration

Not applicable.

B.2.5. Permanent changes from registered monitoring plan, applied methodology or applied standardized baseline

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The methodology and tool used in the project activity has been upgraded, the applied rules are:

- ACM0002: "Grid-connected electricity generation from renewable sources", Version 17.0, valid from May 13th 2016 onwards.
- Tool to calculate the emission factor for an electricity system – Version 05.0⁹
- Tool for the demonstration and assessment of additionality - Version 07.0.0¹⁰

The explanation of the additionality demonstration has been changed within the framework of the new rules inside the tool, the demonstration whether the proposed project activity is the first-of-its-kind has been applied in the project activity complying the criteria of area, measure, output and different technology. .

B.2.6. Changes to project design of registered project activity

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The project has increased the capacity of the plant from 30 MW to 60 MW with the inclusion of a second phase. During the last years the owner changed and the project was redesigned with a second phase of additional 37MW. Construction of Phase II will start this summer. At the end there will be physically one project of up to 67MW.

The project activity is developed by Electronic J.R.C., S.L.R., a 'special purpose vehicle' (SPV) company from the Dominican Republic owned by 'General Energy Solutions' (GES) a Taiwanese company and built, operated and maintained by Soventix GmbH a German company. After construction,

Other technical changes has been the total amount PV modules - 270'000 PV - from (GES) each with 250 W_p will be installed, connected to 2000 Huawei inverters and 44 medium voltages blocks from Ormazabal delivering the electricity in 6 rings to the power- substation from ABB which is connected to the national grid.

Because of the post registration changes, the values to determine the baseline emissions have been updated to 2015 as the nominal capacity of the Power Plants in Dominic Republic and for some information to cover the period 2012-2015, as the net electricity generation and the fossil fuels consumption.

B.2.7. Types of changes specific to afforestation or reforestation project activity

Not applicable.

SECTION C. Description of monitoring system

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As established in the methodology, the only variable that needs to be verified and monitored during the crediting period is the total amount of electricity delivered to the electric grid, since the calculations of the emission factor are performed in an *ex ante* basis, so is not necessary to update any other variable during the crediting period.

So far the definition of the precise equipment to be installed for measuring the total amount of energy delivered to the grid is not yet available. The technical aspects of the equipment to be

⁹ Valid from November 27th 2015 onwards, EB 87 Annex 9

¹⁰EB 70, Annex 8, 23th of November 2012.

installed will be available once the final agreement between the project participant and the National Electric Grid is finished. However, the suggested main characteristics that the equipment will have for measuring the total amount of electricity delivered to the electric grid at the Point of Common Coupling (PCC), are the following:

- Electronic multifunction for being assembled in electric board.
- Back connection
- Anti dust sealed
- With an application of a multi tariff billing system
- Real time measuring access
- Bi-directional measurement capability
- Remote data transmission capability
- Massive memory storage
- Precision 0.2%

Also, the meter installed onsite will have the indication of maximum supply, expressed in kWh for the daily double tariff measuring system, with integration periods of 15 minutes. All meters installed will be a “plug in” type and with the dimensions 200mm x 200mm.

All the meters will be designed to work in a four wire three phases system.

The nominal tension and the type of service will be self-programmable within the range of 57 – 277 V and will have an operation range of +- 15% of the nominal tension, base type, with quartz controlled internal digital clock, independent from the frequency of the grid.

The multifunction system will be able to register currents and tensions, power factor, active, reactive and apparent power. It will be able to transmit all the data remotely.

It will have two communication buses RS 485, one of them commutable to a RS 232, with an internal modem of 33.6 kbps.

Emission Reductions:

Also, the emission reductions of the project will be accounted as the total electricity delivered to the grid, multiplied by the emission factor of the SENI. In order to monitor the total emission reductions a simplified calculation model will be used (See Annex 4 for details).

Total Energy Generated:

To monitor the output of the electricity of the solar plant two meters will be installed, one for internal control and the other for delivering the electricity to the grid. The installed meters will be sending all the information to the control cabin. All the information will be recorded and stored. The final crosscheck of the data will be with the sales receipts. Also, each one of the structures will have a direct monitoring for detecting any kind of failure in the electric system. All data monitored and required for verification and issuance of CER's will be kept for two years after the end of the last crediting period or the last issuance of CERs, whichever occurs latest.

The following monitoring procedure has been developed in order to generate the necessary information for verification purposes:

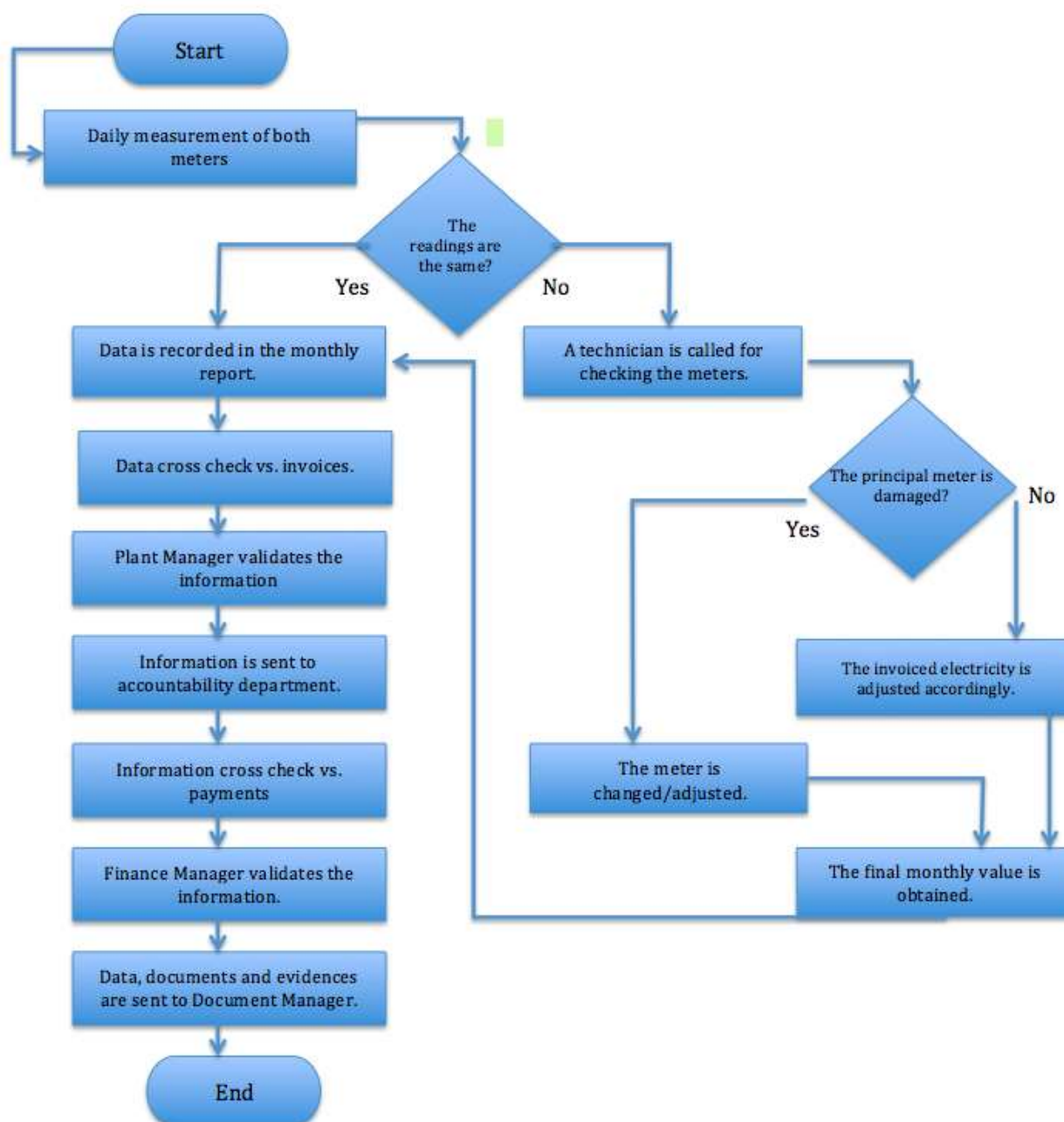


Figure 1: Monitoring procedure

SECTION D. Data and parameters

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

(Copy this table for each piece of data and parameter)

Data / Parameter	$EG_{m,y}$
Unit	kWh
Description	Net energy delivered to the grid by power unit “m” during year “y”
Source of data	Statistical Data from the National Energy Commission

Value(s) applied	Data for 2013, 2014 and 2015. References are in Annex 3
Choice of data or Measurement methods and procedures	The information is official and publicly available upon request to the National Energy Commission. The information was received electronically by email ¹¹ .
Purpose of data	
Additional comment	

Data / Parameter	$EF_{CO_2,l,y}$										
Unit	kgCO ₂ /TJ										
Description	Emission factor of the fossil fuel type “l”										
Source of data	2006 IPCC Guidelines for National Greenhouse Gas Inventories”, Volume 2: Energy, Chapter 2: Stationary Combustion – Table 2.2. Lower limit.										
Value(s) applied	<table> <tr> <td>Fossil Fuel used:</td><td>Emission Factor</td></tr> <tr> <td>Coal</td><td>89.5000</td></tr> <tr> <td>Fuel Oil #6 / Residual Fuel Oil</td><td>75.5000</td></tr> <tr> <td>Fuel Oil #2 / Diesel</td><td>72.6000</td></tr> <tr> <td>Gas Natural</td><td>54.3000</td></tr> </table>	Fossil Fuel used:	Emission Factor	Coal	89.5000	Fuel Oil #6 / Residual Fuel Oil	75.5000	Fuel Oil #2 / Diesel	72.6000	Gas Natural	54.3000
Fossil Fuel used:	Emission Factor										
Coal	89.5000										
Fuel Oil #6 / Residual Fuel Oil	75.5000										
Fuel Oil #2 / Diesel	72.6000										
Gas Natural	54.3000										
Choice of data or Measurement methods and procedures	The information is official and publicly available.										
Purpose of data											
Additional comment	It is important to mention that the information provided by the National Energy Commission is not specifying the type of Coal that is being used, therefore, in order to keep a conservative approach, the values used are the "Other Bituminous Coal"										

Data / Parameter	NCV								
Unit	TJ/Gg								
Description	The NCV refers to the energy content of these fossil fuels								
Source of data	2006 IPCC Guidelines for National Greenhouse Gas Inventories”, Volume 2: Energy, Chapter 1: Introduction – Table 1.2. Lower limit.								
Value(s) applied	<table> <tr> <td>Fossil Fuel used:</td><td>NCV</td></tr> <tr> <td>Coal</td><td>25.8000</td></tr> <tr> <td>Fuel Oil #6 / Residual Fuel Oil</td><td>40.4000</td></tr> <tr> <td>Fuel Oil #2 / Diesel</td><td>43.0000</td></tr> </table>	Fossil Fuel used:	NCV	Coal	25.8000	Fuel Oil #6 / Residual Fuel Oil	40.4000	Fuel Oil #2 / Diesel	43.0000
Fossil Fuel used:	NCV								
Coal	25.8000								
Fuel Oil #6 / Residual Fuel Oil	40.4000								
Fuel Oil #2 / Diesel	43.0000								
Choice of data or Measurement methods and procedures	No other trustable source is publicly available for the data.								
Purpose of data									
Additional comment	The values were used in a conservative manner.								

¹¹ The evidences are available to the DOE for validation purposes.

Data / Parameter	$FC_{i,m,y}$
Unit	Volume units
Description	Amount of fossil fuel type “ <i>i</i> ” used in power unit “ <i>m</i> ” during year “ <i>y</i> ”
Source of data	National Energy Commission – CNE
Value(s) applied	Data for 2013, 2014 and 2015 References are in annex 3.
Choice of data or Measurement methods and procedures	The information is official and publicly available by request.
Purpose of data	
Additional comment	

Data / Parameter	Density of fuels
Unit	kg/m ³
Description	The density express the concentration of mass in a determined volume
Source of data	Table A.4 of the "Emission Greenhouse Gases in the United States" - Energy Information Administration (EIA, US Department of Energy), available at: http://www.eia.gov/oiaf/1605/archive/87-92rpt/appa.html
Value(s) applied	Fuel Oil / Residual Fuel –11 API = 0.993 kg/m ³ Diesel / Distillate fuel – 35.5 API = 0.8473 kg/m ³
Choice of data or Measurement methods and procedures	The density of the fossil fuels is a parameter that is not commonly available. The IPCC guidelines are not providing any reference. The density of the fuels depends on the quality of the fuel and in consequence, each fuel supplier could provide the same fuel with different density values. Therefore, a general density value must be used. The EIA provides a conservative international reference for the density values of both fuels.
Purpose of data	
Additional comment	The conversion formula used for calculating the density of the fuels is: <div style="text-align: center; border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;"> $D_{kg/m^3} = \frac{141.5}{D_{API} + 131.5}$ </div> According to the Schlumberger Oilfield Glossary, available at: http://www.glossary.oilfield.slb.com/en/Terms/a/api_gravity.aspx

Data / Parameter	EF_{CM}
Unit	tCO ₂ /MWh
Description	Combined Margin Emission Factor of the Dominican Republic National Grid
Source of data	Statistics of the National Energy Commission
Value(s) applied	0.7652

Choice of data or Measurement methods and procedures	The National Energy Commission is the national entity that regulates the energy supply, distribution and delivery of the electric energy in the country. It is the official government institution for managing the national statistics of the electric sector. The data is publicly available upon request.
Purpose of data	
Additional comment	- The information was received electronically by email

Data / Parameter	EF_{OM}
Unit	tCO ₂ /MWh
Description	Operating Margin Emission Factor of the Dominican Republic National Grid
Source of data	Statistics of the National Energy Commission
Value(s) applied	0.8349
Choice of data or Measurement methods and procedures	The National Energy Commission is the national entity that regulates the energy supply, distribution and delivery of the electric energy in the country. It is the official government institution for managing the national statistics of the electric sector. The data is publicly available upon request.
Purpose of data	
Additional comment	- The information was received electronically by email

Data / Parameter	EF_{BM}
Unit	tCO ₂ /MWh
Description	Build Margin Emission Factor of the Dominican Republic National Grid
Source of data	Statistics of the National Energy Commission
Value(s) applied	0.5563
Choice of data or Measurement methods and procedures	The National Energy Commission is the national entity that regulates the energy supply, distribution and delivery of the electric energy in the country. It is the official government institution for managing the national statistics of the electric sector. The data is publicly available upon request.
Purpose of data	
Additional comment	- The information was received electronically by email

D.2. Data and parameters monitored

(Copy this table for each piece of data and parameter)

Data / Parameter	EG_{facility,y}
Unit	MWh/y
Description	Quantity of net electricity generation supplied by the project plant to the grid in year y.
Measured/calculated/default	Measured
Source of data	Readings of the on-site metering connected to the grid.
Value(s) of monitored parameter	22,642 MWh

Monitoring equipment	Data will be measured in the Point of Common Coupling; that means in the project boundary. All energy losses within the boundaries of the project, will not be accounted as emission reductions. Data of the “onsite” measurements will be crosschecked with the data approved and provided by the buyer.
Measuring/reading/recording frequency:	Data will be measured continuously and recorded at least monthly.
Calculation method (if applicable):	-
QA/QC procedures	Meter should be periodically calibrated in order to ensure a maximum error of +/- 0.2% following national requirements or manufacturer specifications. Sales receipts will be kept in order to verify the consistency of the data monitored ¹² .
Purpose of data	All data collected will be achieved electronically and be kept at least for 2 years after the end of the last crediting period.
Additional comment	All data collected will be achieved electronically and be kept at least for 2 years after the end of the last crediting period.

D.3. Implementation of sampling plan

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N.A

SECTION E. Calculation of emission reductions or GHG removals by sinks

E.1. Calculation of baseline emissions or baseline net GHG removals by sinks

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The chosen methodology, ACM0002 V.17.0, establishes the parameters for calculating the baseline emissions. It is important to notice that the first parameter that needs to be calculated is the emission factor of the electric grid.

This parameter is expressed in tons CO₂/MWh, and it indicates the amount of CO₂-equivalent GHG emissions that are emitted per each MWh of electricity fed into the SENI. As mentioned before, the emission factor used for the baseline emission calculations is made with the combination of two emission factors. The first one is called *Operating Margin (OM)*, and it expresses the average emission factor of the actual energy production capacity. The second component is the *Build Margin (BM)*, which reflects the future trend of the electric grid expansion, in terms of emissions per generated MWh.

Both emission factors, the OM and the BM are combined in different proportions to have a final Combined Margin (**CM**) that will reflect the real emission factor of the Dominican Republic electric grid.

For the calculation of all these parameters, the ACM0002 indicates that the “Tool to calculate the emission factor for an electric grid” must be used. This tool proposes six steps to be followed in order to complete the calculations. The steps are explained as follows:

¹² Calibration procedures will be performed by the LAMEDIG, which is a laboratory of electric measurements that is part of the DIGENOR (Dirección General de Normas y Sistemas de Calidad). <http://www.digenor.gob.do/tabid/104/Default.aspx>, as mentioned in the “Ley General de Electricidad”

Step 1: Identify the relevant electricity system

For this Project Activity, the relevant electricity system is the SENI, as there are no other relevant interconnected systems and because the project activity is delivering all its electricity to the SENI.

For the baseline year, the SENI was compound by a total of 75 different power plants, dived in the following categories:

Technology	Number of Plants
Thermoelectric	24
Hydroelectric	41
Combined Cycle	5
Gas Turbine	2
Wind	3

Table: Total number of power plants in Dominican Republic Grid

Step 2: Choose whether to include off-grid power plants in the project electricity system (optional)

The project participants can choose between the following two options to calculate the operating margin and the build margin emission factor.

- Option I: Only grid power plants are included in the calculation.
- Option II: Both, grid power plants and off-grid power plants are included in the calculation.

For the proposed Project Activity, only grid power plants are included in the calculation; there are no other relevant off-grid power plants in the country.

Step 3: Select a method to determine the Operating Margin (OM)

For calculating the OM, the following methods are proposed by the methodology:

- Simple OM
- Simple adjusted OM
- Dispatch data analysis
- Average OM

For the Project Activity the OM will be calculated using the simple OM method.

This selection is made because in Dominican Republic, the low-cost/must-run power plants do not exceed the 50% of the total electricity generation during the five years previous the baseline year. According the information received from the government of Dominican Republic, the following table shows the total energy generated for the years 2006 – 2010 and the percentage of energy delivered for “low-cost/must-run” plants.

Source	2010	2012	2013	2014	2015
Total energy generated (GWh)	12101.70137	12,518.14	13,248.57	14,064.59	15,014.53
Total except (low-cost/must-run) (GWh)	10675.76695	11,487.65	11,750.47	11,965.97	12,959.27
% of low-cost/must-run plants	11.78%	8.23%	11.31%	14.92%	13.69%

With the above information is clearly and transparently demonstrated that for the previous years before the implementation of the project activity, the low-cost/must-run represents less than the 50% of the total generation. Also, there is no hourly information of the operation of the different plants, so the Dispatch data analysis cannot be used. By last, the Average OM cannot be used because not all the power plants can be considered as low-cost/must-run. The principal fossil fuel source for electricity production in Dominican Republic is diesel and bunker (heavy fuel oil). As mentioned before, for the Simple adjusted OM there is no hourly information available about the operation of the power plants so the Simple OM will be chosen.

The simple OM will be calculated utilising an *Ex ante* data vintage. With this option, the emission factor will be determined at the validation stage, and no monitoring and recalculation of the emission factor during the crediting period will be required. Information of the past three years of operation (2013 – 2015) of all the power plants connected to the grid is publicly available; these years were the most recent complete years in which information of the electric generation was available. It is important to mention that all the information used for the calculations of the simple OM and Built Margin (BM) was provided by the “Organismo Coordinador del Sistema Electrico Interconectado”. All the data and data sources were available to the DOE for validation purposes.

Step 4: Calculate the operating margin emission factor, according to the selected method.

As per guidance of the tool, the simple OM is calculated as the generation-weighted average CO₂ emissions per unit net electricity generation (tCO₂/MWh) of all generating power plants serving the system, not including low-cost/must-run power plants.

For this calculation, Option A will be used, because the information about the net electricity generation and the CO₂ emission factor of each power unit is available.

Option A states that the simple OM emission factor is calculated based on the net electricity generation of each power unit and an emission factor of each power unit, as follows:

Equation 1:

$$EF_{grid, OMsimple, y} = \frac{\sum_m EG_{m, y} * EF_{EL, m, y}}{\sum_m EG_{m, y}}$$

Where:

$EF_{grid, OMsimple, y}$	Simple Operating margin CO ₂ emission factor in year "y" (tCO ₂ /MWh)
$EG_{m, y}$	Net quantity of electricity generated and delivered to the grid by power unit "m" in year "y" (MWh)
$EF_{EL, m, y}$	CO ₂ emission factor of power unit "m" in year "y" (tCO ₂ /MWh)
m	All power units serving the grid in year "y", except low-cost/must-run power units
y	The relevant year as per the data vintage chosen in Step 3

This formula express that the emission factor of the grid in the year “y”, is the quotient of the sum of all the net electricity generated by each one of the power plants, multiplied by the emission factor of the fuel used to run that power plant, divided by the sum of all the net electricity generated by each one of the power plants.

The net quantity of electricity generated and delivered to the grid is publicly available. The emission factor of each power unit has been calculated according the tool¹³.

Step 5: Calculate the build margin emission factor

¹³ The full calculations and databases used are available to the DOE during the validation process.

As per guidance of the tool, the sample group of power units “*m*” used to calculate the build margin consist of either:

- The set of five power units that have been built most recently or;
- The set of power capacity additions in the electricity system that comprise the 20% of the system generation (in MWh) and that have been built most recently.

It also states that the project participants should use the set of power units that comprises the larger annual generation. For the proposed project activity, the BM will be calculated with the option b) of the tool. For the baseline year 2010, at the moment of submission to validation the PDD, the power plants that were included in the Build Margin calculations were:

Electricity Power Plants	Year of addition	Type of Power Plant	Net generation 2015 (MWh)	%	Cumulative %
BERSAL	2014	Thermoelectric	55280.9753	0.3682%	0.3682%
INCA KM22	2012	Thermoelectric	36503.0239	0.2431%	0.6113%
ESTRELLA DEL MAR 2	2012	Thermoelectric	842193.3802	5.6092%	6.2205%
LOS ORIGENES	2012	Thermoelectric	307121.8106	2.0455%	8.2660%
PIMENTEL 3	2011	Thermoelectric	295525.4810	1.9683%	10.2342%
QUISQUEYA 1	2013	Thermoelectric	99264.6542	0.6611%	10.8954%
QUISQUEYA 2	2014	Thermoelectric	1585577.4410	10.5603%	21.4557%
SAN LORENZO	2012	Thermoelectric	0.0000	0.0000%	21.4557%
JUANCHO LOS COCOS	2012	Wind	283686.0390	1.8894%	23.3451%
LOS COCOS 2	2012	Wind	0.0000	0.0000%	23.3451%
QUILVIO CABRERA	2012	Wind	0.0000	0.0000%	23.3451%
LAS BARIAS	2009	Hydroelectric	0.0000	0.0000%	23.3451%
PIMENTEL	2009	Thermoelectric	316240.0000	2.1062%	25.4513%
PINALITO 1	2009	Hydroelectric	0.0000	0.0000%	25.4513%
PINALITO 2	2009	Hydroelectric	0.0000	0.0000%	25.4513%
MAGUEYAL 1	2008	Hydroelectric	0.0000	0.0000%	25.4513%
MAGUEYAL 2	2008	Hydroelectric	0.0000	0.0000%	25.4513%
RIO SAN JUAN	2008	Thermoelectric	7654.5864	0.0510%	25.5023%
ROSÁ JULIA DE LA CRUZ	2006	Hydroelectric	0.0000	0.0000%	25.5023%
DOMINGO RODRIGUEZ 1	2005	Hydroelectric	0.0000	0.0000%	25.5023%
DOMINGO RODRIGUEZ 2	2005	Hydroelectric	0.0000	0.0000%	25.5023%

Table: Build Margin power plants

As commented before, the build margin is defined as the generation-weighted average emission factor of all power units “*m*” during the most recent year “*y*” for which power generation data is available. It is calculated as follows:

Equation 2:

$$EF_{grid,BM,y} = \frac{\sum_m EG_{m,y} * EF_{EL,m,y}}{\sum_m EG_{m,y}}$$

Where:

- $EF_{grid,BM,y}$ = Build margin CO₂ emission factor in year “y” (tCO₂/MWh)
 $EG_{m,y}$ = Net quantity of electricity generated and delivered to the grid by power unit “m” in year “y” (MWh)
 $EF_{EL,m,y}$ = CO₂ emission factor of power unit “m” in year “y” (tCO₂/MWh)
 m = Power units included in the build margin
 y = Most recent historical year for which power generation data is available.

The emission factor of each power plant is calculated in the same way for the OM and the BM. The formula used for doing such calculation is the following:

Equation 3:

$$EF_{EL,m,y} = \frac{EF_{CO2,m,i,y} * 3.6}{h_{m,y}}$$

Where:

- $EF_{EL,m,y}$ = CO₂ emission factor of power unit “m” in year “y” (tCO₂/MWh)
 $EF_{CO2,m,i,y}$ = Average CO₂ emission factor of fuel type “i” used in power unit “m” in year “y” (tCO₂/GJ)
 $n_{m,y}$ = Average net energy conversion efficiency of power unit “m” in year “y” (ratio)
 m = All power units serving the grid in year “y” except low-cost/must-run power units (different from the sample group of plants used for the BM calculations)
 y = The relevant year as per data vintage chosen in Step 3

As there is no information of the total volume of fuel consumed by each plant, the $EF_{EL,m,y}$ is calculated using the efficiency of each power plant. The efficiency is calculated as the total energy output (electricity), divided by the total amount of energy input (fuel).

Step 6: Calculate the combined margin emission factor (CM)

As commented above, the combined margin emission factor is the combination of both emission factors, the OM and the BM. The formula to calculate it is as follows:

Equation 4:

$$EF_{grid,CM,y} = EF_{grid,OM,y} * w_{OM} + EF_{grid,BM,y} * w_{BM}$$

Where:

- $EF_{grid,OM,y}$ = Operating margin CO₂ emission factor in year “y” (tCO₂/MWh)
 $EF_{grid,BM,y}$ = Build margin CO₂ emission factor in year “y” (tCO₂/MWh)
 w_{OM} = Weighting of operating margin emissions factor (%)
 w_{BM} = Weighting of build margin emissions factor (%)

For solar and wind power generation activities, the values for w_{OM} and w_{BM} should be of 0.75 and 0.25 respectively.

Once one has calculated the emission factor of the Dominican Republic electric grid, it is necessary to calculate the project and the baseline emissions, in order to calculate the total emission reductions of the project activity.

For the project, there are no leakage emissions or any other emissions source that could be accounted, so the total project emissions in the year “y” is zero, i.e. $PE_y = 0$.

According to the ACM0002 V.17.0, the baseline emissions include only CO₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The baseline emissions are calculated as follows:

$$BE_y = EG_{PJ,y} * EF_{grid,CM,y}$$

Equation 5:

Where:

BE_y = Baseline emissions in year “y” (tCO₂/year)

$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year “y” (MWh/year)

$EF_{grid,CM,y}$ = 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” (tCO₂/MWh)

Year	Baseline emissions (t CO ₂ e)	Project emissions (t CO ₂ e)	Leakage (t CO ₂ e)	Emission reductions (t CO ₂ e)
2016	17,327	0	0	17,327
Total	17,327	0	0	17,327

E.2. Calculation of project emissions or actual net GHG removals by sinks

>>

A Solar PV power plant project has no emissions that could be accounted, so the total emission reductions will be the baseline emissions.

E.3. Calculation of leakage

>>

Because the project activity relies on the generation of electricity through the electro-chemical conversion of solar radiation, no associated emissions are generated during the operation, so there will be no leakage emissions considered.

Summary of calculation of emission reductions or net GHG removals by sinks

Item	Baseline emissions or baseline net GHG removals by sinks (t CO ₂ e)	Project emissions or actual net GHG removals by sinks (t CO ₂ e)	Leakage (t CO ₂ e)	GHG emission reductions or net GHG removals by sinks (t CO ₂ e) achieved in the monitoring period		
				Up to 31/12/2012	From 01/01/2013	Total amount
Total	17,327	0	0		17,327	17,327

E.4. Comparison of actual emission reductions or net GHG removals by sinks with estimates in registered PDD

Item	Values estimated in ex ante calculation of registered PDD	Actual values achieved during this monitoring period
Emission reductions or GHG removals by sinks (t CO ₂ e)	34, 226	17,327

E.5. Remarks on difference from estimated value in registered PDD

>>

The difference between estimated and actual accounts in total 16,899 tCO₂e. This is mainly due to the fact that there were delays in the generation electricity, on site for 2016 only registered seven months (since July), while in PDD calculation considered the whole year.

Appendix 1. Contact information of project participants and responsible persons/entities

Project participant and/or responsible person/ entity	<input type="checkbox"/> Project participant <input type="checkbox"/> Responsible person/ entity for application of the selected methodology (ies) and, where applicable, the selected standardized baselines to the project activity
Organization name	Electronic J.R.C., S.R.L.
Street/P.O. Box	Calle Sócrates Nolasco no.2
Building	Edif. León & Rafal 2do nivel
City	Santo Domingo
State/Region	Santo Domingo
Postcode	N/A
Country	Dominican Republic
Telephone	+1 809 540 7828
Fax	N/A
E-mail	Nicolas.Ramirez@gesyw.com
Website	www.gesyw.com
Contact person	Nicolas Ramirez
Title	Project Manager
Salutation	Mr.
Last name	Ramirez
Middle name	N/A
First name	Nicolas
Department	CDM
Mobile	N/A
Direct fax	N/A
Direct tel.	+1-829 268 2662
Personal e-mail	Nicolas.Ramirez@gesyw.com

Project participant and/or responsible person/ entity	<input type="checkbox"/> Project participant <input type="checkbox"/> Responsible person/ entity for application of the selected methodology (ies) and, where applicable, the selected standardized baselines to the project activity
Organization name	Foundation myclimate – The Climate Protection Partnership
Street/P.O. Box	Sternenstrasse 12
Building	N/A
City	Zurich
State/Region	Zurich
Postcode	8002
Country	Switzerland

Telephone	+41 44 500 43 50
Fax	+41 44 500 43 51
E-mail	franziska.heidenreich@myclimate.org
Website	www.myclimate.org
Contact person	Franziska Heidenreich
Title	Head of Department
Salutation	Mrs
Last name	Heidenreich
Middle name	N/A
First name	Franziska
Department	Carbon Offset Projects
Mobile	N/A
Direct fax	+41(0)445004351
Direct tel.	+41(0)445004368
Personal e-mail	franziska.heidenreich@myclimate.org

Project participant and/or responsible person/ entity	<input type="checkbox"/> Project participant <input type="checkbox"/> Responsible person/ entity for application of the selected methodology (ies) and, where applicable, the selected standardized baselines to the project activity
Organization name	Think Carbon GmbH
Street/P.O. Box	Südring 13
Building	N/A
City	Oldenburg
State/Region	Lower Saxony
Postcode	26125
Country	Germany
Telephone	+49 4421 209089 0
Fax	+49 4421 209089 9
E-mail	info@german-profec.com
Website	www.german-profec.com
Contact person	Andreas Jansen
Title	Managing Director
Salutation	Mr
Last name	Jansen
Middle name	N/A
First name	Andreas
Department	Director
Mobile	+49 160 97244214
Direct fax	+49 4421 209089 9
Direct tel.	+49 4421 209089 0
Personal e-mail	a.jansen@german-profec.com

Attachment. Instructions for filling out the monitoring report form

1. General instructions

1. When monitoring the project activity and completing the CDM-MR-FORM, in addition to following the the "[CDM Project standard](#)" (Project standard), the applied approved baseline and monitoring [methodology\(ies\)](#) (hereinafter referred to as the applied methodology(ies)) and, where applicable, the applied approved [standardized baseline\(s\)](#) (hereinafter referred to as the applied standardized baseline(s)), 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](#), [tools](#) and [standardized baselines](#)), [procedures](#), [guidelines](#), [clarifications](#), [forms](#) and the "[Glossary: CDM terms](#)". Make any data, values and formulae included in electronic spreadsheets provided accessible and verifiable.
2. Complete the CDM-MR-FORM and all attached documents in English, or include a full translation of relevant sections in English.
3. Complete the CDM-MR-FORM using the same format without modifying its font, headings or logo, and without any other alteration to the form.
4. Do not modify or delete tables and their columns in the CDM-MR-FORM. Add rows to the tables as needed. Add additional appendices as needed.
5. If a section of the CDM-MR-FORM is not applicable, explicitly state that the section is left blank intentionally.
6. Use an internationally recognized format for presentation of values in the CDM-MR-FORM, for example use digit grouping in thousands and mark a decimal point with a dot (.), not with a comma (,).
7. Complete the CDM-MR-FORM deleting this "Attachment: Instructions for filling out the monitoring report form".

2. Specific instructions

1. Indicate on the cover page the following information:
 - (a) Title of the project activity;
 - (b) Reference number of the project activity;
 - (c) Version number of the monitoring report;
 - (d) Completion date of the monitoring report (DD/MM/YYYY);
 - (e) Monitoring period number and duration of this monitoring period. The monitoring period number is an ordinal number referring to the chronological order of monitoring periods (e.g. "first monitoring period"). For the monitoring period dates, first and last days are included (DD/MM/YYYY – DD/MM/YYYY);
 - (f) Project participant(s);
 - (g) Host Party;
 - (h) Sectoral scope(s). List all sectoral scopes applicable to the project activity;
 - (i) Selected methodology(ies). List all the selected methodologies and combination of methodologies applicable to the project activity;
 - (j) Selected standardized baseline(s). List all the selected standardized baseline applicable to the project activity;
 - (k) Estimated amount of GHG emission reductions or net GHG removals by sinks for this monitoring period in the registered PDD;
 - (l) Total amount of GHG emission reductions or net GHG removals by sinks achieved in this monitoring period - GHG emission reductions or net GHG removals by sinks reported up to 31 December 2012 (if applicable); GHG emission reductions or net GHG removals by sinks reported from 1 January 2013 onwards (if applicable).

SECTION A. Description of project activity

A.1. Purpose and general description of project activity

1. Provide a brief summary of the detailed description given in section B.1 in terms of:
 - (a) Purpose of the project activity and the measures taken for GHG emission reductions or net GHG removals by sinks;
 - (b) Brief description of the installed technology and equipment;
 - (c) Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.);
 - (d) Total GHG emission reductions or net GHG removals by sinks achieved in this monitoring period.

A.2. Location of project activity

1. Provide the following information on the location of the project activity:
 - (a) Host Party;
 - (b) Region/state/province, etc.;
 - (c) City/town/community, etc.;
 - (d) Physical/geographical location.

A.3. Parties and project participant(s)

1. List in the table Party(ies) and project participant(s) involved in the project activity.

A.4. Reference of applied methodology and standardized baseline

1. Indicate the exact reference (number, title, version) of:
 - (a) The applied methodology(ies) (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 methodology(ies) refers (e.g. "Methodological tool: Tool for the demonstration and assessment of additionality" (version 07.0.0));

- (c) The applied standardized baseline(s), 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 of project activity

1. Provide the type, start date and length of the crediting period corresponding to this monitoring period.

A.6. Contact information of responsible persons/entities

1. Provide contact information of the person(s)/entity(ies) responsible for completing the CDM-MR-FORM and indicate whether the person(s)/entity(ies) is(are) also a project participant(s) in Appendix 1

SECTION B. Implementation of project activity

B.1. Description of implemented registered project activity

1. Provide information on the implementation status of the project activity during this monitoring period in accordance with the applicable provision for description of implemented registered CDM project activity in the Project standard.
2. For the description of the installed technology(ies), technical process and equipment, include diagrams, where appropriate.
3. If applicable, present information on any request for prior approval by the Board of changes to the registered CDM project activity in section B.2.1, B.2.2, B.2.3, B.2.4, B.2.5 and/or B.2.6.

B.2. Post-registration changes

B.2.1. Temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline

1. Indicate whether any temporary deviations have been applied during this monitoring period. If applied, provide a description of the deviation(s) in accordance with applicable provisions for temporary deviations from the registered monitoring plan, applied methodologies or applied standardized baseline in the Project standard.
2. Include the reasons for the deviation(s), how it deviates from the monitoring plan, applied methodology(ies) and/or applied standardized baseline, the duration for which the deviation(s) is(are) applicable and justification on the conservativeness of the approach.
3. For deviation(s) that require prior approval by the Board, include the date of approval and reference number. Otherwise, provide the version number and the completion date of the revised PDD and DOE assessment opinion on the request for post-registration changes that is being submitted with this monitoring report.

B.2.2. Corrections

1. Indicate whether any corrections to project information or parameters fixed at validation have been approved during this monitoring period or submitted with this monitoring report.
2. In cases where the correction(s) and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, provide the approval date and reference number. Otherwise, provide the version number and the completion date of the revised PDD and the DOE assessment opinion on the request for post-registration changes that is being submitted with this monitoring report.

B.2.3. Changes to start date of crediting period

1. Indicate whether any changes to the start date of the crediting period have been approved during this monitoring period or submitted with this monitoring report.
2. In cases where the changes and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, provide the approval date and reference number.

B.2.4. Inclusion of a monitoring plan to the registered PDD that was not included at registration

1. Indicate whether the inclusion of 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, has been approved by the Board prior to the submission of this monitoring report or is being submitted together with this monitoring report.
2. If the inclusion of a monitoring plan into the registered PDD has been approved by the Board prior to the submission of this monitoring report, provide the date of approval and reference number.

B.2.5. Permanent changes from registered monitoring plan, applied methodology or applied standardized baseline

1. Indicate whether any permanent changes from the registered monitoring plan, applied methodologies or applied standardized baseline have been approved during this monitoring period or submitted with this monitoring report.
2. In cases where the change(s) and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, provide the approval date and reference number. Otherwise, provide the version number and the completion date of the revised PDD and DOE assessment opinion on the request for post-registration changes that is being submitted with this monitoring report.

B.2.6. Changes to project design of registered project activity

1. Indicate whether any changes to the project design of the project activity have been approved during this monitoring period or submitted with this monitoring report.
2. In cases where the change(s) and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, provide the approval date and reference number. Otherwise, provide the version number and the completion date of the revised PDD and DOE assessment opinion on the request for post-registration changes that is being submitted with this monitoring report.

B.2.7. Types of changes specific to an afforestation or reforestation project activity

1. Indicate whether any changes specific to afforestation or reforestation project activities have been applied during this monitoring period based on applicable provisions in the Project standard that do not require prior approval by the Board. If changes were applied, provide the version number and the completion date of the revised PDD and DOE assessment opinion on the request for post-registration changes that is being submitted with this monitoring report.

SECTION C. Description of monitoring system

1. Provide a description of the monitoring system based on the applicable provision for description of monitoring system in the Project standard. Include diagrams of the monitoring system and the information flow where appropriate.

SECTION D. Data and parameters

1. Provide information on all data and parameters in accordance with applicable provisions for data and parameters in the Project standard, using the tables provided in sections D.1 and D.2.
2. For "Purpose of data" 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 by sinks;
 - (b) Calculation of project emissions or actual net GHG removals by sinks;
 - (c) Calculation of leakage.
3. Where the applied standardized baseline(s) standardizes baseline emissions, apply the standardized value(s) of the parameter(s) in section D.1 and/or D.2 in accordance with applicable provisions related to data and parameters in the Project standard.

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

1. Include data that are fixed before registration and/or at the renewal of crediting period and are used during this monitoring period under section D.1.
2. For "Value(s) applied", use one table to report multiple values referring to the same data and parameter, if applicable. Use reference(s) to electronic spreadsheets, if necessary.

D.2. Data and parameters monitored

1. For "Monitoring equipment" in the table, provide information on type, accuracy class, serial number, calibration frequency, date of last calibration and validity.
2. For "Value(s) of monitored parameter", use one table to report multiple values referring to the same data and parameter, if applicable. Use reference(s) to electronic spreadsheets, if necessary.

D.3. Implementation of sampling plan

1. If data and parameters monitored described in section D.2 above are determined by a sampling approach, provide a description on how project participants implemented the sampling efforts and surveys for those data and parameters according to the sampling plan. Include:
 - (a) Description of implemented sampling design;
 - (b) Collected data (attach and provide reference to electronic spreadsheets, if necessary);
 - (c) Analysis of the collected data;
 - (d) Demonstration on whether the required confidence/precision has been met.

SECTION E. Calculation of emission reductions or GHG removals by sinks

1. For the parameter global warming potentials (GWPs), from 1 January 2013, include the values adopted by decision 4/CMP.7 to calculate the emission reductions 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 GHG removals by sinks

1. Provide sample calculations for all formulae used and calculation of baseline emissions or baseline net GHG removals by sinks, applying actual values. Attach electronic spreadsheets to present full calculations in the monitoring report.

E.2. Calculation of project emissions or actual net GHG removals by sinks

1. Provide sample calculations for all formulae used and calculation of project emissions or actual net GHG removals by sinks, applying actual values. Attach electronic spreadsheets to present full calculations in the monitoring report.

E.3. Calculation of leakage

1. Provide sample calculations for all formulae used and calculation of leakage, applying actual values. Attach electronic spreadsheets to present full calculations in the monitoring report.

E.4. Summary of calculation of emission reductions or net GHG removals by sinks

1. Summarize the results of sections E.1, E.2, E.3 above and provide GHG emission reductions or net GHG removals by sinks for this monitoring period, using the table.
2. If the monitoring period starts before 31 December 2012 and ends anytime thereafter, provide actual GHG emission reductions or net GHG removals by sinks achieved for the following two periods respectively:
 - a) Up to 31 December 2012 (first commitment period); and
 - b) From 1 January 2013 onwards.
3. Calculate the achieved GHG emission reductions or net GHG removals by sinks proportionally for each period. In cases where annual caps were applied in the calculations, prorate the annual caps to each period.

E.5. Comparison of actual emission reductions or net GHG removals by sinks with estimates in registered PDD

1. Provide a comparison of actual GHG emission reductions or net GHG removal of the project activity achieved during this monitoring period with the estimates in the registered PDD.

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

1. Explain the cause of any increase in the actual GHG emission reductions achieved during this monitoring period based on the applicable provision for calculation of GHG emission reductions in the Project standard.

Appendix 1. Contact information of project participants and responsible persons/entities

1. In accordance with section A.6 above, complete the table, with the following mandatory fields: Project participant and/or responsible person/entity, Organization, Street/P.O. Box, City, Postcode, Country, Telephone, Fax, E-mail and Name of contact person. Copy and paste the table as needed.

Document information

<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 (EB70, 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	28 May 2010	EB 54, Annex 34. Initial adoption.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: monitoring report		