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	La Vuelta and La Herradura Hydroelectric Project	
UNFCCC reference number of the project activity	0735	
Version number of the monitoring report	02.0	
Completion date of the monitoring report	02/07/2015	
Monitoring period number and duration of this monitoring period	6th monitoring period: 01/01/2014 – 31/12/2014	
Project participant(s)	Empresas Públicas de Medellín E.S.P. (private) MGM Carbon Portfolio S. à r.l.	
Host Party	Colombia	
Sectoral scope(s)	1: Energy Industries (renewable/ non-renewable sources)	
Selected methodology(ies)	ACM0002 (version 15)	
Selected standardized baseline(s)	N/A	
Estimated amount of GHG emission reductions or net GHG removals by sinks for this monitoring period in the registered PDD	77,149 tCO_2e	
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
	0	87,409 tCO_2e

SECTION A. Description of project activity

A.1. Purpose and general description of project activity

>>

La Vuelta and La Herradura Hydroelectric Project (hereinafter "the project") is a hydro power plant with a total installed nameplate capacity of 33.48MW, in order to take advantage of the capacity of La Herradura River, by means of two subprojects in a chain (La Vuelta and La Herradura). The proposed subprojects were not strictly built to cover the expected increase in electricity demand but to add efficiency to the local electricity system as a whole, improving electricity service in the West of Antioquia Department, and contributing to the regional sustainable development, while reducing CO_2 emissions.

The project displaces other generation sources connected to the local grid that use fossil fuel to produce energy. The project provides clean energy and reduces CO_2 emissions in Colombia (host country).

The following table shows a description of the technology that was included in the registered PDD as well:

Table 1: Design data of La Vuelta and Herradura Hydroelectric Project

Hydro Plant / Characteristic	La Vuelta	La Herradura
Nominal capacity	12.4MW	21.08MW
Mean flow	$12m^3/s$	$10m^3/s$
Net design fall	112.9m	230.6m
Hydraulic turbine	Francis horizontal axis. One unit only.	Francis horizontal axis. Two units.

The construction of the facilities started in April 2002. La Herradura was completed and fully commissioned in October 2004, followed by La Vuelta in December/2004, at which points they started commercial operations. The power plants have been generating electricity since then.

The emission reductions achieved by the implementation of the project activity for the monitoring period from 01/January/2014 to 31/December/2014, are 87,409tCO_2e.

A.2. Location of project activity

>>

The project activity is located in the Republic of Colombia. The two power plants are sited in the North-western region of Antioquia Department, under the jurisdiction of Cañasgordas, Frontino and Abriaquí municipalities, although the Urabá Antioqueño can be considered as regional area of influence, which goes from Santa Fé de Antioquia to Arboletes.

La Herradura Sub-Project

La Herradura hydro power plant is located on La Herradura River, starting from an existing topographic fall between mentioned river and the Cañasgordas River. Both rivers later join to form the Sucio River basin, which contributes to a mean flow of $10m^3/s$ at catchment point. The construction is located in Frontino and Cañasgordas municipalities' jurisdictions.

The geographical coordinates of La Herradura power plant are -76.09º; 6.73º (-76°05'18.01"; 6°43'49.60").

La Vuelta Sub-Project

La Vuelta hydro power plant is locates in the upper and middle basin of La Herradura River, up to the fork at the Nancuí Gulch, at 1,595m elevation, covering all the municipality of Abriaquí. The limits coincide with the dividing basin and, to a lesser extent, with Frontino municipality. The hydrographic basin area of La Herradura River contributes to a mean flow of 12m^3/s at catchment point.

The geographical coordinates of La Vuelta hydro power plant are -76.08º; 6.80º (-76°04'52.90''; 6°48'10.08'').

Both plants are connected to Chorodó substation at 44kV[1]. Location -76.14°; 6.85° (-76°08'16.50''; 6°50'53.93'').

Figure 1: Location of Project Activity

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)
Colombia (host)	Empresas Públicas de Medellín E.S.P	No
Switzerland	MGM Carbon Portfolio, S. à r.l. (private)	No

A.4. Reference of applied methodology and standardized baseline

>>

The methodology applied to the registered CDM project activity is ACM0002 Version 15: "Grid-connected electricity generation from renewable sources". The methodology also refers to the

[1] http://www.industcards.com/hydro-colombia.htm

"Tool for demonstration and assessment of additionality". By the time of project activity registration, the available tool version was Version 02.

A.5. Crediting period of project activity

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The crediting period of the project activity is January 1st 2012 to December 31st 2018 (renewable).

A.6. Contact information of responsible persons/entities

>>

Empresas Públicas de Medellín

Mr. Oscar Alonso Fernadez

Tel (57.4) 380.22.45

oscar.fernandez@epm.com.co

SECTION B. Implementation of project activity

B.1. Description of implemented registered project activity

>>

The project is fully implemented and operational since the end of 2004.

No events or situations occurred during the monitoring period, which may impact the applicability of the methodology.

During the monitoring period maintenance was performed according to the schedule established for this purpose, as can be verified by the DOE in the project log books.

Table 2: Project Activity Implementation Events

Hydro Power Plant / Events	La Vuelta	La Herradura
Construction Start Date	15/April/2002	22/April/2002
Operation Start Date	18/December/2004	08/October/2014

Technologies and/or measures

The project activity consists of two hydroelectric power plants, with a total installed turbine capacity of 33.48 MW[2] , in order to take advantage of the capacity of La Herradura River, by means of two subprojects in a chain (La Vuelta and La Herradura).

[2] As per post registration changes PRC ref No. PRC-0735-001, approved on May 20-2014.

La Vuelta Sub-Project – Technical Details

Hydraulic Turbine	
Type	Francis, horizontal axis
Number of units	1
Nameplate capacity (without losses)	12,400kW[3]
Rotation speed	870min-1
Design net head	112.9m
Generator	
Type	Synchronic, horizontal axis
Number of units	1
Nominal power output (nameplate)	14,000kVA
Nominal tension	13,800V
Nominal frequency	60Hz
Power factor (cosine ø)	0.85
Synchronic speed	514.3rpm

La Herradura Sub-Project – Technical Details

Hydraulic Turbine	
Type	Francis, horizontal axis
Number of units	1
Nameplate capacity (without losses)	10,540kW[3]
Rotation speed	900min-1
Design net head	230.6m
Generator	
Type	Synchronic, horizontal axis
Number of units	2
Nominal power output (nameplate)	12,000kVA
Nominal tension	13,800V
Nominal frequency	60Hz
Power factor (cosine ø)	0.85
Synchronic speed	900rpm

[3] As per post registration changes PRC ref No. PRC-0735-001, approved on 20/May/2014.

Turbine Regulator: programmable digital type with electronic head operated from central or by remote control from another control centre. It also has an electro-hydraulic system for normal operations of synchronization, charge and discharge.

Transformers: It has been decided the use of an outdoors transformer for the two generators, with a capacity of 24MVA: three-phase, with primary nominal voltage of 13.8kV and secondary of 44kV and 60Hz, oil-cooled under normal conditions and by forced air under operating conditions at continual maximum capacity.

Mechanical auxiliary equipments: Oil in bolsters is cooled in a dry type tower, the oil circuit is closed and the pumps are directly propelled by the unit axis. For the drainage of the spiral chamber, the relief valve discharge pit, the draft duct and infiltrated water and power house floors drainage, there is a system with submergible vertical pumps installed in the drainage pit to conduct water to the discharge channel.

Electric auxiliary equipments: A 480kV-13.8kV transformer is used as normal feed, fed from any of the two generators as main source. It has a diesel electric generator of 480V and 60Hz emergency system[4].

Each generation unit has a control centre and a 480V distribution board so that maintenance and selection processes in auxiliary services operations are independent. There is a surveillance system and water level control in the load tank. Therefore, the central is interconnected, so as to secure accurate load tank operation hydraulic conditions.

Turbine specifications: The turbines are Francis reaction turbines, with a martensitic stainless steel welded impeller, with spiral chamber and welded draft pipe from soothed carbon steel sheets, of thin austenitic grain size.

A Francis turbine is a type of hydraulic reactor turbine where the flow exits the turbine blades in radial direction. Francis turbine is common in power generation facilities and is used in applications where high flow rates are available at medium hydraulic head (e.g. Niagara Falls). Water enters the turbine through a casing and is directed to the blades by wicket gates. The low momentum water then exits the turbine through a draft tube.

Francis turbines can be assembled both vertically and horizontally. Figure bellow shows a Francis turbine where water can enter freely through the whole circumference and through the outer ring of the guide vanes. These guide vanes can be adjusted so the amount of incoming water may be controlled. Francis turbines are highly efficient and versatile turbines (inflow-impulse type in the first stage and outflow-axial reaction type in the second stage).

[4] As stated in the methodology ACM0002 version 15.0.0, “the use of fossil fuels for the back up or emergency purposes (e.g. diesel generators) can be neglected”; thus potential emissions from the emergency diesel generator at the project site are neglected.

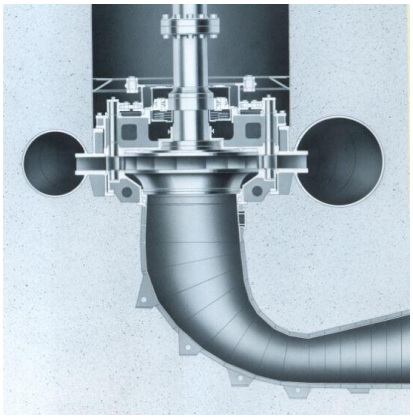

Figure 2: Francis Turbine Spiral Cased Horizontal Shaft – typical arrangement

B.2. Post-registration changes

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

>>

There were no temporary deviations from registered monitoring plan or applied methodology during the current monitoring period.

B.2.2. Corrections

>>

There were no corrections from registered project activity/monitoring plan or applied methodology during the current monitoring period.

B.2.3. Changes to start date of crediting period

>>

There were no corrections from registered monitoring plan or applied methodology during the current monitoring period.

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

>>

A post registration change (PRC ref. No. PRC-0735-001) was submitted and accepted by the Chair of the CDM Executive Board on 20/May/2014.

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

>>

This is not applicable.

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

>>

There are no changes to project design of registered project activity.

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

>>

This is not applicable.

SECTION C. Description of monitoring system

>>

The Monitoring Plan is based on i) recording electricity generation of La Vuelta and La Herradura hydro power plants

Considering the project boundary and that the combined margin CO_2 emission factor is determined *ex-ante*, the electricity generation is the only parameter to be monitored in order to calculate emissions reduction.

Electricity Generation

The hydro power plants La Vuelta and La Herradura belong to the Metropolitan Area under the *Subgerencia Operación* of the *Gerencia Generación Energía* in charge of the operation and maintenance of both hydro power plants. Monitoring procedures can be implemented on site or remote, using tele-measurement technology. The *Equipo de Medida* (Measurements Team) of "Empresas Públicas de Medellin" (EPM) is in charge of taking the measurements. The Measurements Team is responsible for reporting to *XM Compañía de Expertos en Mercados S.A. E.S.P* (XM), the operator of the National Dispatch Center, on the Generation Boundaries, the boundaries between the agents and the large energy clients supplied by EPM. In the case of La Vuelta and La Herradura, the energy meters (in Chorodó substation) are read via the MV-90i software every 24 hours and uploaded in the GCE-*Grandes Clientes de Energía* software.

Once the information is uploaded, a file is created (cr41/mes/día.TXT) and sent to XM. The codes assigned by XM to this project are:

- EVLT1001 LA VUELTA
- EHRD1001 LA HERRADURA

Electricity generation is measured by electronic electricity meters. The values are cross-checked with the generation measured in terminals and vs. SCADA (Supervisory Control And Data Acquisition) system.

Electronic Electricity Meters:

La Vuelta Electricity Meters	
Main	**Backup**
Serial: 36099685	Serial: 36099687
Type: SL761A061	Type: SL761A061
Brand: ACTARIS	Brand: ACTARIS
Voltage: 3x57.7/100V – 3x240/415V	Voltage: 3x57.7/100V – 3x240/415V
Current: 5(10)A	Current: 5(10)A
Calibration constant: 10000Wh/Imp	Calibration constant: 10000Wh/Imp
TP measure: 44000/V3/120/V3V	TP measure: 44000/V3/120/V3
3 Phases – 4 lines	3 Phases – 4 Lines
TC Measure: 300/5	TC measure: 300/5
Class: 0.2S	Class: 0.2S
La Herradura Electricity Meters	

Main	Backup
Serial: 36099681	Serial: 36099684
Type: SL761A061	Type: SL761A061
Brand: ACTARIS	Brand: ACTARIS
Voltage: 3x57.7/100V – 3x240/415V	Voltage: 3x57.7/100V – 3x240/415V
Current: 5(10)A	Current: 5(10)A
Calibration constant: 10000 Wh/Imp	Calibration constant: 10000 Wh/Imp
TP measure: 44000/V3/120/V3V	TP measure: 44000/V3/120/V3
3 Phases – 4 lines	3 Phases – 4 Lines
TC Measure: 300/5	TC measure: 300/5
Class: 0.2S	Class: 0.2S

The information is backed up by the IT Department of EPM through the software for GCE-Grandes Clientes de Energía (Large Energy Consumers). Daily data are read remotely using MV-90xi software. The IT Department (*Unidad Informática Energía*) does information backups of the GCE database on a daily basis at 8PM through the SQL Server. The backup of the previous day is overwritten by the backup of the following day. During the day, backups of the transaction log from the same database are made every three hours. The files are copied to a tape every day during a week. In this way, there is always an available backup of the previous week. Additionally, a tape is kept per week during a month and a tape per month during three months.

The following scheme shows the power plants, the substation and the metering points:

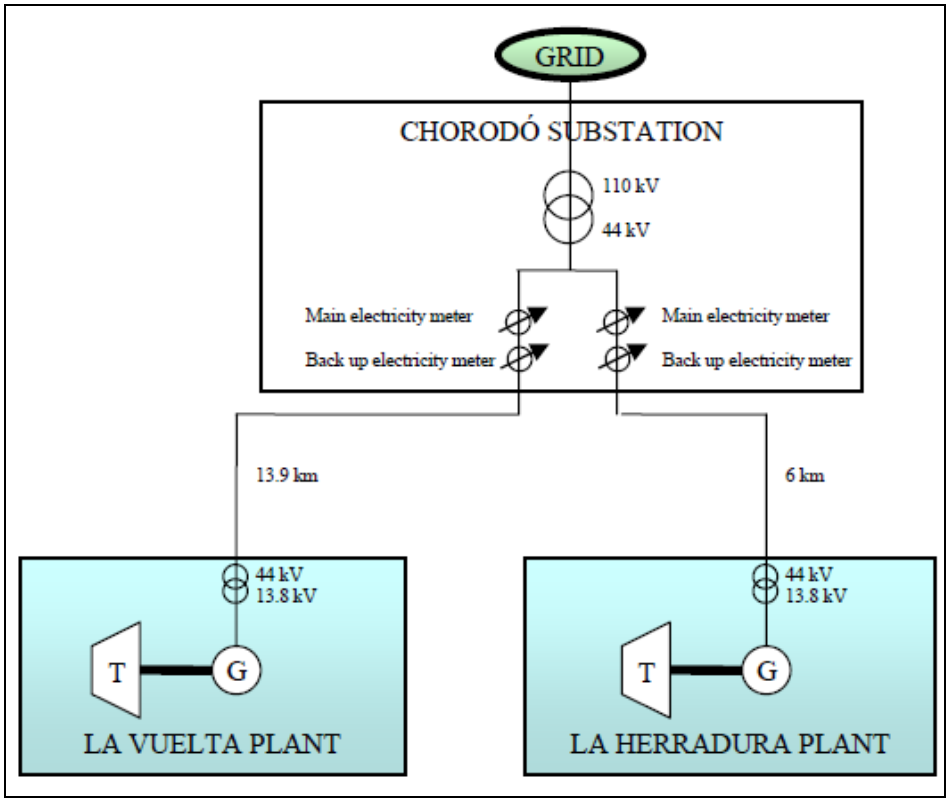

Figure 3: Project Activity Electricity Generation Scheme

Environmental Management Plan

It is important to note that this environmental management plan was not included as part of the monitoring plan in the PDD. This is an independent initiative taken by EPM that contributes to sustainable development of the region.

La Vuelta and La Herradura hydro power plants apply an environmental management plan that includes actions towards mitigating the negative impacts on environment during construction and operation of the plants. In addition, EPM developed a discretionary environmental management plan that involves physical-biotic and social aspects to protect natural resources and to promote a sustainable development of the hydroelectric complex. The plan consists of:

Management of Environmental Impacts:

- The Environmental Licenses consider concessions and permits of spills and river banks occupation and adaptation of the internal ways of the hydroelectric plants. To achieve this, the information requirements of the *Corporación Autónoma Regional Corpourabá* (Autonomous Regional Corporation of Corpourabá) need to be met regarding environmental monitoring programs. Report on turbinated flows once every three months to the *Corporación Autónoma Regional Corpourabá* (Autonomous Regional Corporation of Corpourabá).
- Monitoring and control of the flow designated for energy generation and for water consumption.
- Inspection and maintenance of domestic wastewater treatment systems belonging to the hydroelectric system facilities.
- Monitoring of domestic wastewater treatment systems in order to verify the efficiency and the compliance with the estimated removal percentages in accordance with the environmental law.
- Implementation of a solid wastes management system including different containers corresponding to different type of solid wastes. Moreover, tows and sheets soaked with oils are delivered to a third party for treatment and final disposal in accordance with the applicable law.
- Visits from officials of the *Corporación Autónoma Regional Corpourabá* (Autonomous Regional Corporation of Corpourabá) to follow up on the application of the plan and to identify opportunities for improvement.

Additional discretional programs of environmental management

Process of Environmental Impacts Management:

- Hydrologic monitoring: rainfall, runoff, transport of sediments and water quality of the main source.
- Water quality monitoring of the sources that supply drinking water to the facilities of the hydroelectric complex.

Process of Conserving Natural Resources:

- Geomorphological study of La Herradura River and its river dynamics in order to implement measures to control the critical factors that generate the torrential conditions and the high production of sediments in the basin.

- In 2007, the recovery of several points of erosion of the La Herradura River basin was initiated. In this regard, 22,500m^2 of affected areas due to erosion were identified as part of the program to implement activities tending to protect the surface, control of runoff and stabilization of the areas in order to control the supply of sediments that affect the machines that generate energy.

SECTION D. Data and parameters

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

Data/parameter:	$EF_{grid,CM,y}$
Unit	tCO_2/MWh
Description	Combined margin CO_2 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" (version 4.0.0).
Source of data	Calculated in accordance with the "Tool to calculate the emission factor for an electricity system" (version 4.0.0) based on fuel consumption of the individual power plants connected to the grid. All data used for the analysis is from *XM Compañía de Expertos en Mercados S.A. E.S.P*., which is the market administrator, and being in charge of the National Dispatch Center.
Value(s) applied)	$0.4239tCO_2/MWh$
Choice of data or measurement methods and procedures	Derived from registered PDD (version number 15, dated 16/06/2014) which was calculated based on the methodology tool.
Purpose of data	Baseline emissions calculations.
Additional comments	For both the operating margin and the build margin, the *ex-ante* option is applied as given in the "Tool to calculate the emission factor for an electricity system" (version 4.0.0).

D.2. Data and parameters monitored

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

Data/parameter:	**EG_y**
Unit	MWh/year
Description	Electricity generation by the plan Quantity of net electricity generation supplied by the project plant/unit to the grid in year *y*.
Measured/calculated/default	Measured. Net generation is continuously measured, hourly registered and monthly recorded with the following electricity meters located at the substation Chorodó. The meters are bi-directional and therefore measure the net balance of the quantity of electricity supplied by the project plant to the grid and the quantity of electricity delivered to the project plant from the grid (as given in the methodology).
Source of data	Empresas Públicas de Medellin (EPM).
Value(s) of monitored parameter	206,202MWh See table in Section E.1. for details.

<table>
<tr><td>Monitoring equipment</td><td>
<table>
<tr><th colspan="2">Plant</th><th>Serial N°</th><th>Type</th><th>Class</th><th>Cal. Freq.</th><th>Calibration Date</th></tr>
<tr><td rowspan="2">La Vuelta</td><td>Main</td><td>36099685</td><td>SL761A061</td><td>0.2S</td><td>2 y</td><td>29/03/2011
02/05/2012
29/05/2013
10/04/2014</td></tr>
<tr><td>Back Up</td><td>36099687</td><td>SL761A061</td><td>0.2S</td><td>2 y</td><td>29/03/2011
02/05/2012
29/05/2013
10/04/2014</td></tr>
<tr><td rowspan="2">La Herradura</td><td>Main</td><td>36099681</td><td>SL761A061</td><td>0.2S</td><td>2 y</td><td>29/03/2011
02/05/2012
29/05/2013
10/04/2014</td></tr>
<tr><td>Back Up</td><td>36099684</td><td>SL761A061</td><td>0.2S</td><td>2 y</td><td>29/03/2011
02/05/2012
29/05/2013
10/04/2014</td></tr>
</table>
</td></tr>
<tr><td>Measuring/reading/recording frequency:</td><td>Hourly measurements and monthly recording.</td></tr>
<tr><td>Calculation method (if applicable):</td><td>Not applicable.</td></tr>
<tr><td>QA/QC procedures:</td><td><u>Calibration of meters:</u>
Calibration tasks follow national standards and are in accordance with the calibration instructive specified in Colombian standard NTC 4,856 for electricity metering devices. The calibration frequency is maximum every 2 years, as defined by EPM, since there is no regulatory requirement for calibration frequency.
EPM has adopted its own procedure based on the Colombian technical norm NTC-ISO-IEC 17,025 and NTC 4,856, under the so-called “Instructive to perform on-site electricity meter proofs with a pattern metering device” (DIS-EM-LE-IN-009-01). This procedure is carried out to verify that the meters are working properly with the corresponding accuracy. They are also checked by a system of alarm reminder.
Despite of calibration frequency is set every two years, EPM carry out a calibration per year.</td></tr>
<tr><td>Purpose of data:</td><td>Baseline calculation.</td></tr>
<tr><td>Additional comments:</td><td>All data collected as part of the monitoring process is archived electronically and kept at least for two years after the end of the last crediting period.</td></tr>
</table>

D.3. Implementation of sampling plan

>>

There is no sampling involved in the monitoring of the proposed project activity.

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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According to the applied methodology, baseline emissions are calculated as follow:

$$BEy\,(tonCO_2/yr) = EGy\,(MWh/yr) \times EFy\,(tonCO_2/MWh)$$ Equation (1)

Where:

BEy: Baseline emissions in year *y* (t CO_2/yr)
EGy: Quantity of net electricity generation that is produced and fed into the grid as a result os the implementation of the CDM Project activity in year *y* (MWh/yr)
EFy: Combined margin CO_2 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" (t CO_2/MWh)

In the project activity *EGy* is the project net electricity generation (comprising La Vuelta and La Herradura hydro power plants) and *EFy*, is the grid emission factor calculated as the weighted average of the Operating Margin emission factor (EF_{OM_y}) and the Build Margin emission factor (EF_{BM_y}).

Electricity Generation (*EGy*)

Table 3: Net Electricity Generation during the Monitoring Period

Year	Month	*Ex-ante* Net Electricity Generation (MWh)		
		La Vuelta	La Herradura	Total
2014	January	7,179	12,950	20,130
	February	5,085	10,398	15,483
	March	7,022	13,202	20,224
	April	5,660	10,384	16,044
	May	7,618	10,302	17,920
	June	4,543	12,082	16,624
	July	3,656	8,398	12,054
	August	3,604	8,740	12,344
	September	4,621	9,910	14,531
	October	7,143	13,363	20,506
	November	7,658	11,290	18,948
	December	8,130	13,265	21,395
	TOTAL	**71,919**	**134,283**	**206,202**

The monthly electricity generation data are presented in the "ER_MR_LaVueltaLaHerradura.xls". It can also be found in the web of XM through NEON system: http://informacioninteligente10.xm.com.co/pages/default.aspx

Emission Factor (EF*y*)

As per the registered PDD for the second crediting period, the grid emission factor is determined once at the validation stage, thus no monitoring or recalculation of the emissions factor during the crediting period is required.

- *Emission factor calculation:*
  - *Operating Margin (OM):* 0.5546 tCO_2/MWh
  - *Build Margin (BM):* 0.3804 tCO_2/MWh
  - *Combined Margin (CM):* EF_y, is the grid emission factor (combined margin emission factor) calculated as the weighted average of the Operating Margin emission factor (EF_{OMy}) and the Build Margin emission factor (EF_{BMy}), as follows:

$$EFy = w_{OM} \times EF_{OM,y} + w_{BM} \times EF_{BM,y} \quad \text{Equation (7)}$$

The relative weights according to the default value provided by the methodology are 0.25 for w_{OM} and 0.75 for w_{BM}.

EF_y = 0.25 x 0.5546 + 0.75 x 0.3804 = **0.4239 tCO_2e/MWh**

- *Baseline emission calculation:*

  $BEy = EGy \times EFy$

  BEy = 206,202 x 0.4239 = **87,409 tCO_2** (EGy, year 2014)

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

>>

No project emissions are considered in the present project activity.

E.3. Calculation of leakage

>>

No leakage emissions are considered in the present project activity.

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

Item	Baseline emissions or baseline net GHG removals by sinks (t CO_2e)	Project emissions or actual net GHG removals by sinks (t CO_2e)	Leakage (t CO_2e)	GHG emission reductions or net GHG removals by sinks (t CO_2e) achieved in the monitoring period		
				Up to 31/12/2012	From 01/01/2013	Total amount
Total	87,409	0	0	0	87,409	87,409

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_2e)	77,149	87,409

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

>>

The achieved value for emission reductions of the project activity during this monitoring period, duration 01/01/2014 – 31/12/2014, was 13% higher than the average value estimated in the registered PDD (version number 15, dated 16/06/2014), which applies the average of the electricity generation historical data from 2008 to 2010 (last three years of the first crediting period) which are 13% lower than the actual values achieved.

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

Project participant and/or responsible person/ entity	☒ Project participant ☐ Person/entity responsible for completing the CDM-MR-FORM
Organization name	EMPRESAS PÚBLICAS DE MEDELLÍN E.S.P.
Street/P.O. Box	Carrera 58 N° 42-125 / P.O. Box: 940
Building	
City	Medellín
State/region	Antioquia
Postcode	
Country	Colombia
Telephone	011-57-54-3808080
Fax	
E-mail	
Website	www.epm.com
Contact person	Oscar Alonso Fernandez
Title	Engineer
Salutation	Mr.
Last name	Fernandez
Middle name	Alonso
First name	Oscar
Department	Dirección de Investigación y Desarrollo
Mobile	
Direct fax	011-57-54-3806795
Direct tel.	011-57-54-3802245
Personal e-mail	ofernandez@epm.com.co

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Document information

Version	*Date*	*Description*
05.1	4 May 2015	Editorial revision to correct version numbering.
05.0	1 April 2015	Revisions to: • Include provisions related to delayed submission of a monitoring plan; • Provisions related to the Host Party; • Remove reference to programme of activities; • Overall editorial improvement.
04.0	25 June 2014	Revisions to: • Include the Attachment: Instructions for filling out the monitoring report form (these instructions supersede the "Guideline: Completing the monitoring report form" (Version 04.0)); • Include provisions related to standardized baselines; • Add contact information on a responsible person(s)/ entity(ies) for completing the CDM-MR-FORM in A.6 and Appendix 1; • Change the reference number from *F-CDM-MR* to *CDM-MR-FORM*; • Editorial improvement.
03.2	5 November 2013	Editorial revision to correct table in page 1.
03.1	2 January 2013	Editorial revision to correct table in section E.5.
03.0	3 December 2012	Revision required to introduce a provision on reporting actual emission reductions or net GHG removals by sinks for the period up to 31 December 2012 and the period from 1 January 2013 onwards (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