Monitoring report form

(Version 04.0)

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
Reference number of the project activity	0735
Version number of the monitoring report	01
Completion date of the monitoring report	August 18/2014
Registration date of the project activity	15 January 2007
Monitoring period number and duration of this monitoring period	01/01/2012 – 31/12/2013
Project participant(s)	Empresas Públicas de Medellín E.S.P. (private) MGM Carbon Portfolio S.a.r.l.
Host Party(ies)	Colombia
Sectoral scope and selected methodology(ies), and where applicable, applied standardized baseline(s)	Sectoral scope 1: "Energy Industries – Renewable Sources". Baseline methodology ACM0002/version 06 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".
Estimated amount of GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period in the registered PDD	154.298 t CO2e
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period	161,353 t CO2e
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period up to 31 December 2012(if applicable)	80,803
Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period from 1 January 2013 onwards (if applicable).	80,550

SECTION A. Description of project activity

A.1. Purpose and general description of project activity

The purpose of the project activity is to build a hydroelectric power plant, with a total installed nameplate capacity of 33.48 MW, 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 electricity system as a whole, to improve electricity service in the west of Antioquia Department, and to contribute to the regional sustainable development, while reducing CO_2 emissions.

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

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

Tabla 1: Design data of La Vuelta and La Herradura Hydroelectric Project.

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

The construction of the facilities started in April 2002. La Vuelta was completed and fully commissioned in December 2004 and La Herradura was completed and fully commissioned in October 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, 1 January 2012 - 31 December 2013 are 161.353 tCO_2e.

A.2. Location of project activity

The project activity is located in the Republic of Colombia. The power plants are located in the north-western area of Antioquia Department, under the jurisdiction of Cañasgordas, Frontino and Abriaquí municipalities, although the whole of 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 plant is located on La Herradura River, starting from an existing topographic fall between that river and the Cañasgordas River. Both rivers later join to form the Sucio River basin, a tributary to the Atrato River. The hydrographic basin area of La Herradura River is 320 km2, which contributes to a mean flow of 14 m^3/s at catchment point. The construction is located in Frontino and Cañasgordas jurisdictions.

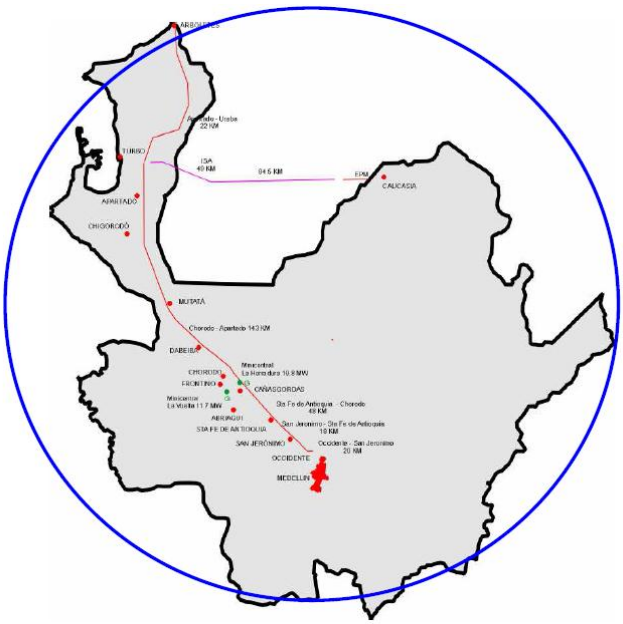
Location of La Herradura power plant: -76.09º; 6.73º (-76°05’18.01”; 6°43’49.60”)

La Vuelta Sub-Project

La Vuelta plant is located in the upper and middle basin of La Herradura River, up to the fork at the Nancuí gulch, at 1,595 m elevation, covering all Abriaquí municipality. 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 12.3 m3/s at catchment point.

Location of La Vuelta power plant: -76.08º; 6.80º (-76°04'52.90''; 6°48'10.08'')

Location of Substation Chorodó: -76.14°; 6.85° (-76°08'16.50''; 6°50'53.93'')



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 if 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.a.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 6: "*Consolidated methodology for grid-connected electricity generation from renewable sources*". The methodology also refers to the "*Tool for demonstration and assessment of additionality*".

A.5. Crediting period of project activity

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The crediting period of the project activity is January 1st 2005 to December 31st 2011 (renewable)

A.6. Contact information of responsible persons/ entities

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Empresas Públicas de Medellín
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.

	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[1] , 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).

La Vuelta Sub-Project

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

La Herradura Sub-Project

Hydraulic Turbine	
Type	Francis, horizontal axis
Number of units	1
Nameplate capacity (without	10,540 kW[1]

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

losses)	
Rotation speed	900 min-1
Design net head	230.6 m
Generator	
Type	synchronic, horizontal axis
Number of units	2
Nominal power output(nameplate)	12,000 kVA
Nominal tension	13,800 V
Nominal frequency	60 Hz
Power factor (cosine ø)	0.85
Synchronic speed	900 rpm

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 24 MVA: three-phase, with primary nominal voltage of 13.8 kV and secondary of 44 kV and 60 Hz, 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 480 kV-13.8 kV transformer is used as normal feed, fed from any of the two generators as main source. It has a diesel electric generator of 480 V and 60 Hz emergency system[2].

Each generation unit has a control center and a 480 V 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).

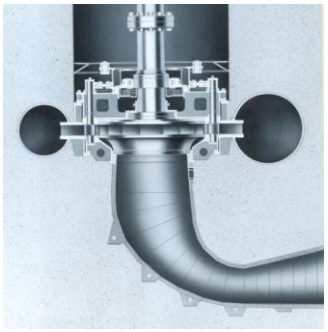


Figure 1: Francis Turbine Spiral Cased Horizontal Shaft - typical arrangement

[2] 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

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

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

B.2.4. Changes to project design of registered project activity

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

B.2.5. Changes to start date of crediting period

>>
Not applicable

B.2.6. Types of changes specific to afforestation or reforestation project activity

>>
This section is not applicable.

SECTION C. Description of monitoring system

>>
The Monitoring Plan is based on i) recording electricity generation of LV and LH power plants and ii) obtaining the data required to calculate the grid emission factor: electricity generation and fuel consumption of all power plants serving the interconnected national system.

Considering the project boundary, the following data need to be monitored in order to calculate baseline emissions and emission reductions:

- Hourly electricity generation of the hydroelectric plants of the project. EE.PP.M takes measurements every hour (ID number of section D.2.1.3 of the registered PDD: 1).
- Plant dispatch order of the grid (ID number of section D.2.1.3 of the registered PDD: 2).
- Hourly electricity generation of all power plants and imports serving the interconnected national system (ID number of section D.2.1.3 of the registered PDD: 5 and 14).
- Power plants fuel consumption or heat rates for each fuel (ID number of section D.2.1.3 of the registered PDD: 6, 7 and 10).
- Emission factor and Net Calorific Value of each fuel used in the thermal power plants of the grid (ID number of section D.2.1.3 of the registered PDD: 8 and 9)

- Identification of the power plants for the OM and BM (ID number of section D.2.1.3 of the registered PDD: 3 and 4)

Electricity generation:
The 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 the power plants. Monitoring procedures can be implemented on site or remote, using tele-measurement technology. The "Equipo de Medida" (Measurements Team) of EE.PP.M is in charge of taking the measurements. The Measurements Team is responsible for reporting to XM, the operator of the National Dispatch Center, on the Generation Boundaries, the boundaries between the agents and the large energy clients supplied by EE.PP.M. 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 it is 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 system ("Supervisory Control And Data Acquisition").

Meters Information:

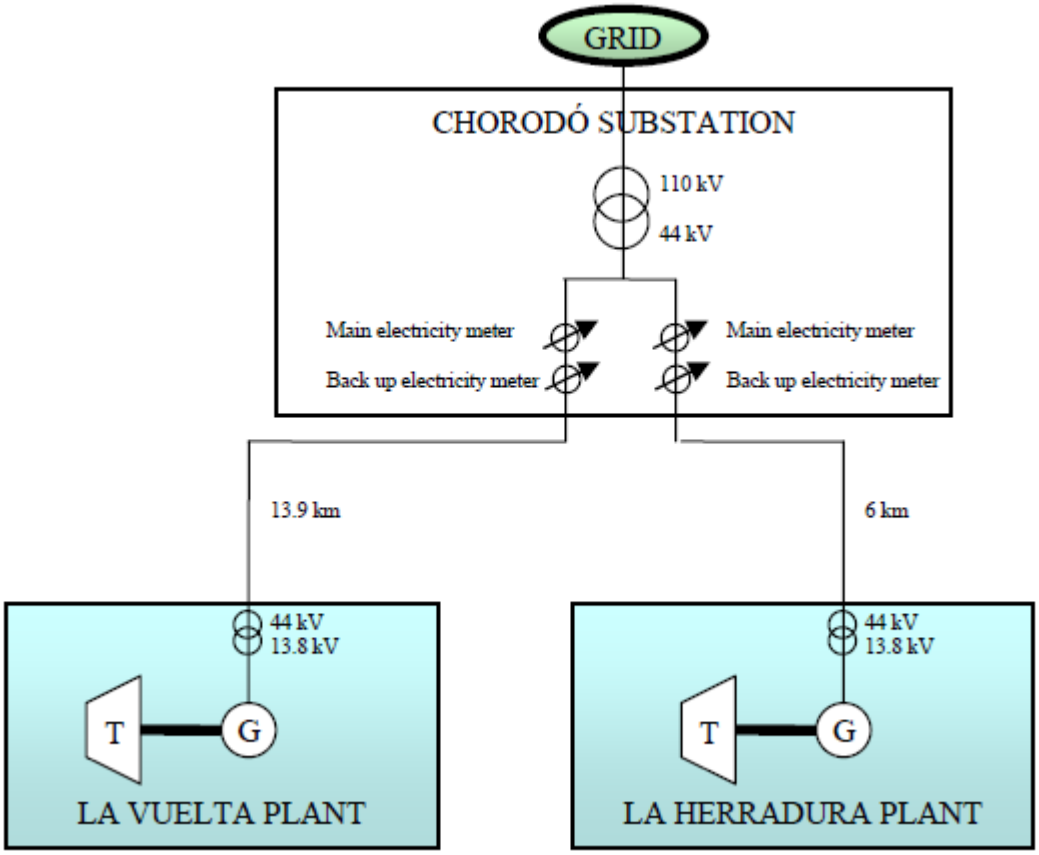
LA VUELTA ELECTRICITY METERS	
Main	**Backup**
Serial: 36099685	Serial: 36099687
Type: SL761A061	Type: SL761A061
Brand: ACTARIS	Brand: ACTARIS
Voltage: 3x57.7/100V – 3x240/415V	Voltage: 3x57.7/100V – 3x240/415V
Current: 5(10)A	Current: 5(10)A
Calibration constant: 10000 Wh/Imp	Calibration constant: 10000 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

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

This information is backed up by the IT Department of EE.PP.M 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 8.00 PM through the SQL Server. The backup of the previous day is overwritten by the new one. 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 months during three months.

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



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 EE.PP.M that contributes to sustainable development of the region.

La Vuelta and La Herradura hydroelectric 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, EE.PP.M 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, 22,500 m2 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

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

Data / Parameter:	$EF_{grid,CM,y}$
Description	Combined margin CO2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (version 4.0.0).
Data unit:	tCO_2/MWh
Source of data used:	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):	0.4239 tCO2/MWh
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Baseline emissions calculations

Additional comment:	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**
Data 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:	EE.PP.M
Value(s) of monitored parameter:	2012: 191.379 (LV: 65.069 + LH: 126.309) 2013: 190.597 (LV: 68.706 + LH: 121.890) See table in section E.1 for details
Monitoring equipment:	

Plant		Serial	Type	Class	Cal. Freq	Calibration[3]
La Vuelta	Main	36099685	SL761A061	0.2S	2 y	29/03/2011 29/05/2013
	Back Up	36099687	SL761A061	0.2S	2 y	29/03/2011 29/05/2013
La Herradura	Main	36099681	SL761A061	0.2S	2 y	29/03/2011 29/05/2013
	Back Up	36099684	SL761A061	0.2S	2 y	29/03/2011 29/05/2013

Measuring/ Reading/ Recording frequency:	Hourly measurements and monthly recording
Calculation method (if applicable):	N.A
QA/QC procedures:	<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 for alarms.
Purpose of data:	Baseline calcultaion

[3] Since the calibration was not conducted at the frequency specify by the monitoring plan, the guidelines for assessing compliance with the calibration frequency requirements is applied.

Additional comment:	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.

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

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

$$BE_{sp,y}(tonCO_2 / yr) = EF_y\ (tonCO_2 / MWh) \cdot EG_y\ (MWh / yr) \qquad (1)$$

Where EG_y is the project generation (comprising "La Vuelta" and "La Herradura" plants) and EF_y, is the grid emission factor calculated as the weighted average of the Operating Margin emission factor (EF_{OMy}) and the Build Margin emission factor (EF_{BMy}).

EGy:

Generation of the plants for years 2012 and 2013

Year	Month	Net Generation of the plants (MWh)		
		La Vuelta	La Herradura	Total
2012	January	7302.42	13870.62	21173.03
	February	3374.05	9439.64	12813.68
	March	4280.53	9730.89	14011.42
	April	5383.66	11559.64	16943.30
	May	6814.03	11870.39	18684.42
	June	6246.80	9597.77	15844.57
	July	5182.69	9215.42	14398.11
	August	4384.50	8023.29	12407.80
	September	3181.69	7954.79	11136.48
	October	5865.64	11610.94	17476.58
	November	6232.71	11083.96	17316.66
	December	6562.37	11850.86	18413.23
	TOTAL	**64811.09**	**125808.20**	**190619.29**
2013	January	2411.94	8582.72	10994.65
	February	584.07	6913.07	7497.14
	March	3667.55	7597.37	11264.92
	April	5124.77	8997.89	14122.66
	May	6448.76	8480.12	14928.88
	June	7980.50	12710.31	20690.80
	July	6110.68	11998.29	18108.97

	August	6028.20	11134.53	17162.73
	September	7180.28	13356.56	20536.83
	October	6581.08	12513.83	19094.91
	November	7716.91	8365.68	16082.60
	December	8296.58	11240.12	19536.70
	TOTAL	**68131.33**	**121890.49**	**190021.81**

Please refer to the spreadsheet "Hourly generation_LVLH_2012-2013" for the hourly generation of each plant. It can also be found in the web of XM through NEON system: http://informacioninteligente10.xm.com.co/pages/default.aspx

EFy

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

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:

$$EF_y = w_{OM} \cdot EF_{OM,y} + w_{BM} \cdot EF_{BM,y} \quad (7)$$

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_2/MWh**

Baseline calculation:

BE_y = 0.4239 x 380,641= 161,353 tCO_2 (2012 and 2013 included**)**

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

>>
No project emissions are considered in the present project

E.3. Calculation of leakage

>>
No leakage emissions are considered in the present project

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

Considering that there are neither project emissions nor leakage for the proposed project activity, the annual emission reductions are equal to:

ER_y *(tonCO₂ / yr) =* BE_y *(tonCO2 / yr)* *(13)*

ER_y = **161,353 tCO_2** (2012 and 2013 included)

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)	Emission reductions or net anthropogenic GHG removals by sinks (t CO_2e)
Total 2012	80,803.51	0.00	0.00	80,803.51
Total 2013	80,550.25	0.00	0.00	80,550.25
Total monitoring period	**161,353.76**	0.00	0.00	**161353.76**

E.5. Comparison of actual emission reductions or net anthropogenic 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**	**2012: 80,803.51** **2013: 80,550.25**
Project Generation (MWh)	**182,000**	**2012: 190,619.29** **2013: 190021.81**

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

>>

The electricity generation of the project during 2012 and 2013 was 4.94% higher than the average value used in the PDD, which corresponds with the average of the historical data from 2008 to 2010 (last three years of the first crediting period)

E.7. Actual emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards

Item	Actual values achieved up to 31 December 2012	Actual values achieved from 1 January 2013 onwards
Emission reductions or GHG removals by sinks (t CO_2e)	2005-2007: 154,232 2008: 50,841 2009: 53,351 2010: 49,510 2011: 52,728 2012: 80,803	2013: 80.550

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

Project participant and/or responsible person/ entity	☒ Project participant ☐ Responsible person/ entity 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	Does not exist in Colombia
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
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Document information

Version	*Date*	*Description*
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 anthropogenic 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.

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