



**Monitoring report form for CDM project activity
(Version 07.0)**

Complete this form in accordance with the instructions attached at the end of this form.

MONITORING REPORT

Title of the project activity	Candelaria Hydroelectric Project	
UNFCCC reference number of the project activity	0604	
Version number of the PDD applicable to this monitoring report	10	
Version number of this monitoring report	1	
Completion date of this monitoring report	08/07/2019	
Monitoring period number	2 nd monitoring period of the 2 nd Crediting Period	
Duration of this monitoring period	01/01/2016 to 31/12/2018 36 months	
Monitoring report number for this monitoring period	NA	
Project participants	Hidroeléctrica Candelaria, S.A.(Host) Ecoinvest Carbon (Other)	
Host Party	Guatemala	
Applied methodologies and standardized baselines	AMS-I.D. Grid Connected renewable electricity generation (version 17)	
Sectoral scopes	Scope 1: Energy industries (renewable-/non-renewable sources)	
Amount of GHG emission reductions or net anthropogenic GHG removals achieved by the project activity in this monitoring period	Amount achieved before 1 January 2013	Amount achieved from 1 January 2013
	0	37,221
Amount of GHG emission reductions or net anthropogenic GHG removals estimated ex ante for this monitoring period in the PDD	35,400 tCO ₂ e	

SECTION A. Description of project activity

A.1. General description of project activity

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(a) Purpose of the project activity and the measures taken for GHG emission reductions

The objective of the project activity is to generate renewable electricity using hydrological resources and to sell the generated output to the national grid. The project has the capacity to reduce CO₂ emissions by avoiding electricity generation by the fossil fuel-fired power plants connected to the grid.

(b) Brief description of the installed technology and equipment

The project has an installed capacity of 4.3 MW¹ and utilizes water from the Trece Aguas River. Currently, this watercourse is also utilized for electricity generation in an existing 16 MW hydropower plant (Secacao) located upstream of Candelaria plant. Secacao plant was developed in 1998 and is owned and operated by Candelaria's sponsors.

Total differential altitude (head) between the head pond and the turbine/generator of Candelaria is approximately 130 meters. The project consists of a 4.456 MW Francis type turbine, a 430-meter-long tunnel, a 770-meter-long penstock. The water used, once having gone through both plants, is returned to the original river basin downstream.

The plant delivers electricity to the Guatemalan National Electric Grid and is connected to it through a 69-kilovolt transmission line. The plant has the capacity to deliver part of its output locally, when required, through an existing 13.8 kilovolt distribution line owned by a Utility serving this rural area, thus giving access to electricity to several local communities.

(c) Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.)

The construction of Candelaria Hydroelectric Project began in January 2005 and the commissioning took place from 12/06/2006 to 30/06/2006, to successfully start power generation on 01/07/2006. Since 2006, Candelaria Hydroelectric plant has been continuously operating and delivering energy to the National Grid.

The Project was registered under the Clean Development Mechanism on 09/11/2006, starting its first crediting period on 01/01/2007. The second crediting period started on 01/01/2014, with the renewable date on 12/04/2014.

¹ The installed capacity of the hydroelectric plant is determined and delimited by the capacity of the generator. As indicated by the manufacturer of the generator of Candelaria, the generator has an apparent power of 5,397 kVA and a power factor of 0.8. The maximum output capacity of the generator is the real power (in kW) and results from multiplying the apparent power (in kVA) by the power factor, as follows: 5,397 kVA × 0.8 = 4,318 kW = 4.3 MW.

(d) Total GHG emission reductions achieved in this monitoring period

The calculation of the emissions reductions is based on validated and registered parameters in the PDD and justified during the validation. The baseline combined margin emission factor for Candelaria Hydroelectric plant is 0.4833 tCO₂/MWh.

Total emission reductions achieved in the second monitoring period of the second crediting period from 01/01/2016 to 31/12/2018 is 37,221 tCO₂e.

A.2. Location of project activity

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The Candelaria Hydroelectric plant is located in the north-central area of Guatemala, Senahú, Alta Verapaz Guatemala, on the mountain range called “Sierra de Santa Cruz,” on the northern side of the Polochic River Valley. The exact geographical coordinates of the power house are: 15.38695 N and -89.75510 W.

Figure 1 shows a map identifying the general location of the project:



Figure 1 Alta Verapaz Department, Guatemala

A.3. Parties and project participants

Parties involved	Project participants	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
Guatemala (host)	Hidroeléctrica Candelaria, S.A. (private)	No
Switzerland (other)	Ecoinvest Carbon, S.A. (private)	No

A.4. References to applied methodologies and standardized baselines

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“AMS-I.D. Grid connected renewable electricity generation” (version 17).

For more information regarding the methodology, please refer to the following link:

<http://cdm.unfccc.int/methodologies/DB/RSCTZ8SKT4F7N1CFDXCSA7BDQ7FU1X>

A.5. Crediting period type and duration

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Type: Renewable crediting period (7 years x 3)

Starting date: 01/01/2014

Length: 7 years

Crediting period: 01/01/2014 to 31/12/2020

SECTION B. Implementation of project activity

B.1. Description of implemented project activity

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The Candelaria Hydroelectric Project has an installed capacity of 4.3 MW and 130 meters of net head utilizing water from the Trece Aguas River. The water flows through a tailrace channel from where it enters into a 430-meter-long tunnel. The water then runs through a head pond and into a 770 meters long penstock, and finally propels in a 4.456 MW Francis type turbine located at Candelaria's power house. The water used is returned to the original river basin downstream.

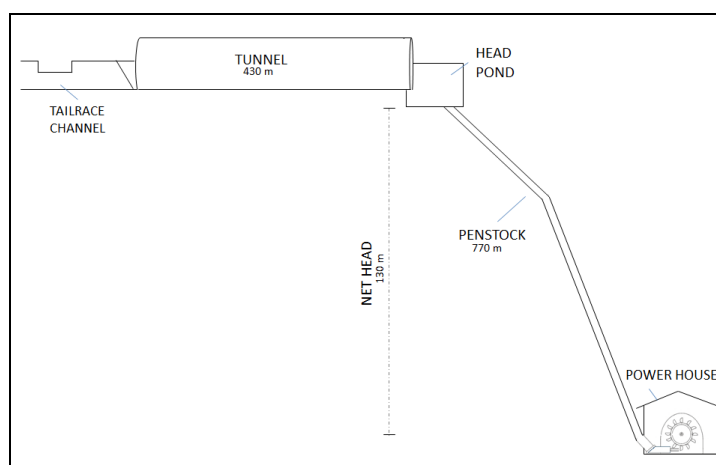


Figure 2 Candelaria's outline

The plant delivers electricity to the Guatemalan National Electric Grid and it is connected to a 69-kilovolt transmission line. It has also the capacity to deliver, when required, part of its output locally through an existing 13.8 kilovolt distribution line, giving access to electricity to several local communities.

Every year, the operations management executes the annual programmed maintenance between April and May. On 2016, the annual programmed maintenance started on May 3 and finished on May 13; on 2017, it started on April 27 and finished on May 7; and on 2018, it started on April 26 and finished on May 5.

New commercial main and backup meters were installed on May 1, 2017, in line with the stipulations described in the Commercial Coordination Norm, No. 14, (NCC-14) issued by the Wholesale Market Administrator. Old meters were changed to get more modern equipment that improves communication features.

New meters features are shown in the following table:

Candelaria's Main Meter Features	Candelaria's Support Meter Features
<ul style="list-style-type: none"> Model: ION8650 Brand: Power Logic Serial number: F-76197 	<ul style="list-style-type: none"> Model: ION8650 Brand: Power Logic Serial number: F-76198

No exchange of electric generation equipment was made on these maintenance periods nor during this monitoring report period.

B.2. Post-registration changes**B.2.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents**

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Not applicable.

B.2.2. Corrections

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Not applicable.

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

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Not applicable.

B.2.4. Inclusion of monitoring plan

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Not applicable.

B.2.5. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents

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Not applicable.

B.2.6. Changes to project design

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Not applicable.

B.2.7. Changes specific to afforestation or reforestation project activity

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Not applicable.

SECTION C. Description of monitoring system

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Equipment used to measure the energy produced by the Candelaria Hydroelectric Plant consists in a main and a backup meter. This is in line with the stipulations described in the Commercial Coordination Norm, No. 14, (NCC-14) issued by the Wholesale Market Administrator (Administrador del Mercado Mayorista - AMM)², clauses 14.2 and 14.6.

Main and backup meters were changed on May 1, 2019 as follows:

January 1, 2016 – April 30, 2017		May 1, 2017 – December 31, 2018	
Main Meter Features	Support Meter Features	Main Meter Features	Support Meter Features
Model: KV2c Brand: General Electric Serial number: 28 620 847	Model: KV2c Brand: General Electric Serial number: 28 620 848	Model: ION8650 Brand: Power Logic Serial number: F-76197	Model: ION8650 Brand: Power Logic Serial number: F-76198

² The Wholesale Market Administrator (Administrador del Mercado Mayorista) is the entity in charge of dispatching and programming the operation and coordination of the National Power Grid.

The metering units are shown in the following diagram:

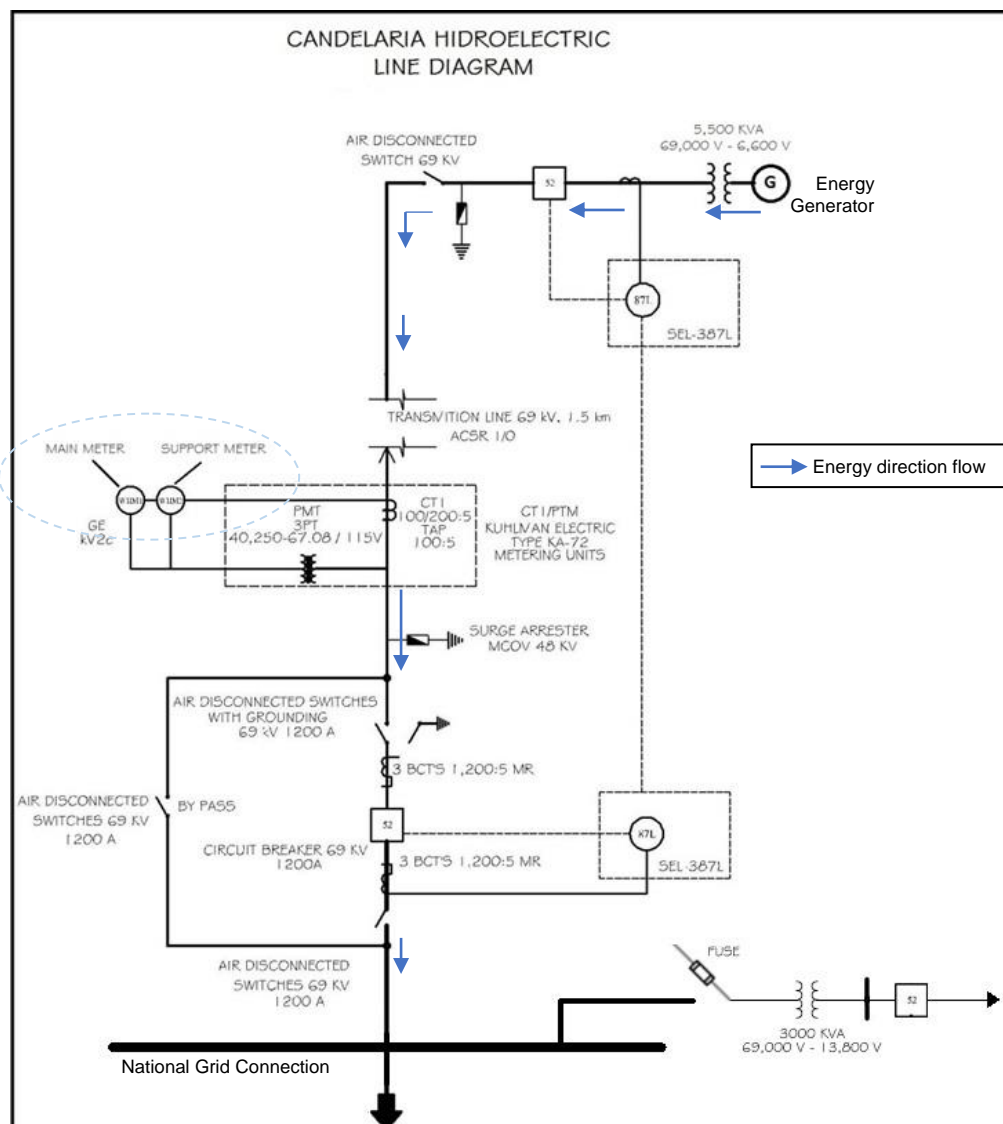


Figure 3 Candelaria Hydroelectric Line Diagram

- **Data quality obtained from the energy meters**

As set forth, by the Wholesale Market Administrator, in the Commercial Coordination Norm number 14 (NCC-14), clause 14.12, the Wholesale Market Administrator is in charge of verifying the commercial meters and associated installations of the producer agent at least once a year, in order to guarantee the precision and quality required. If the results of the verification show inaccuracy and imprecision in the energy measurement, then the producer agent will be notified and a corrective action (defined in the NCC-14) should be taken. (Verification's results are notified to the producer agent just in those cases when an accuracy and precision problem is detected.)

Additionally, as an internal quality control procedure, in order to guarantee the precision and quality required, a verification of the calibration of both commercial meters used in Candelaria Hydroelectric Project is executed periodically, by a metrology lab.

- **Data collection and monitoring procedures**

Energy data of the Candelaria Hydroelectric Project are monitored, captured and recorded by three different procedures. Each procedure and data collected are also verified by different persons to ensure the accuracy of measured data. Procedures used to collect, monitor and register the data of the produced energy are described below:

1. Hourly and Daily Readings Procedure

Source of data: SCADA system / Main and Support commercial meters
 Responsible of quality data: Operations Supervisor
 Purpose of collected data: Internal control

Procedure:

SCADA system reports permanently the instantaneous power and other generation conditions. This system works using a computer with SCADA (Supervisory Control and Data Acquisition) software, connected to a PLC (Programmable Logic Controller) device that automatically captures the information and converts it to data. This generation data is available to the operator continuously 24 hours a day on the computer screen. The Operator is responsible for transcribing the hourly data to the "Operation Control Sheets", which are kept in the Control Room of the plant.

Besides this, at 00:00hrs, the Operator takes directly visual meter readings (from the main commercial meter). The difference from the previous day's reading and the current reading corresponds to the energy produced over that day.

In addition, an internal daily report is made by an automatic Data Monitoring System (Sistema de Monitoreo de Información –SIMON-), which is fed by the Operator with the SCADA and the commercial meter data. This program allows the access to updated data and graphics of the daily, weekly, monthly and yearly power and energy produced by Candelaria Hydroelectric Plant.

These procedures are performed for internal monitoring purposes.

2. Monthly Readings Procedure

Source of data: Main and Support commercial meters
 Responsible of quality data: Operations Manager
 Purpose of collected data: Energy sales

Procedure:

On the first days of every month, for billing purposes, the Operations Manager gets the hourly reading monthly report, for his review and validation. This report allows the calculation of that month generated energy. The validated report is sent to the Financial Manager, General Manager Assistant, Candelaria's Client, and AMM's Measuring Coordinator, for their revision and reference.

Commercial invoice is issued by Candelaria Hydroelectric plant for the energy provided to the national grid, based on the monthly validated report.

3. Yearly Data Collection Procedure

Source of data: Monthly commercial invoice reports
 Responsible of quality data: CDM Coordinator
 Purpose of collected data: Baseline emissions calculation

Procedure:

In order to prepare the monitoring report to calculate the total energy produced by the Candelaria Hydroelectric Plant and estimate the baseline emission reductions, the Financial Division and CDM

Division collect in a single report all the monthly reports used for billing purposes in an Excel spreadsheet, calculating the annual emission reductions. This report is reviewed and approved by the General Manager.

SECTION D. Data and parameters

D.1. Data and parameters fixed ex ante

(Copy this table for each data or parameter.)

Data/Parameter	$EF_{CO_2,grid,y} / E_{grid,CM,y}$
Unit	tCO ₂ /MWh
Description	CO ₂ emission factor of the grid electricity in year y / Combined Margin CO ₂ emission factor of the grid electricity in year y
Source of data	Data provided by the Wholesale Market Administrator (official source)
Value(s) applied	0.4833
Choice of data or measurement methods and procedures	In accordance with paragraph 12 of the methodology, Option (a) was selected: a combined margin, consisting of the combination of operating margin and build margin is calculated based on the procedures prescribed in version 04.0 of the "Tool to calculate the emission factor for an electricity system".
Purpose of data/parameter	Data used to calculate baseline emissions.
Additional comments	Data updated at the time of submission of the request for renewal of the crediting period to the DOE. No monitoring and recalculation of the emission factor during the second crediting period is required.

Data/Parameter	$EF_{CO_2,m/k,i,y} / EF_{CO_2,m,i,y}$
Unit	tCO ₂ /GJ
Description	Average CO ₂ emission factor of fuel type i used in power unit m or k in year y .
Source of data	Data from the 2006 IPCC Guidelines on National GHG Inventories, Table 1.4, Chapter 1, Vol. 2 (Energy).
Value(s) applied	See Appendix 4 of the PDD.
Choice of data or measurement methods and procedures	According to version 04.0 of the "Tool to calculate the emission factor for an electricity system", if there is no data from fuel supplier of the power plants in invoices or local average default values, IPCC default values at the lower limit of the uncertainty at a 95 per cent confidence interval should be used. In accordance with the Tool, where several fuel types are used in the power unit, the fuel type with the lowest CO ₂ emission factor is used.
Purpose of data/parameter	Data used to calculate baseline emissions.
Additional comments	For the simple adjusted OM emission factor calculation: data updated once for each crediting period using the most recent three historical years for which data is available at the time of submission of the CDM-PDD to the DOE for validation or request for renewal of the crediting period (ex-ante option). For the BM emission factor calculation: for the first crediting period, data determined once ex ante, based on the most recent information available on units already built for sample group m at the time of PDD submission to the DOE for validation. For the second and third crediting period, data updated only once ex ante at the start of the second crediting period, based on the most recent information available on units already built at the time of submission of the request for renewal of the crediting period to the DOE.

Data/Parameter	$EG_{m,y} / EG_{k,y}$
Unit	MWh
Description	Net quantity of electricity generated and delivered to the grid by power unit m or k in year y
Source of data	Data provided by the Wholesale Market Administrator (official source).

Value(s) applied	See Appendix 4 of the PDD.
Choice of data or measurement methods and procedures	According to version 04.0 of the "Tool to calculate the emission factor for an electricity system", data from utility or government records or official publications should be used.
Purpose of data/parameter	Data used to calculate baseline emissions.
Additional comments	For the simple adjusted OM emission factor calculation: data updated once for each crediting period using the most recent three historical years for which data is available at the time of submission of the CDM-PDD to the DOE for validation or request for renewal of the crediting period (ex-ante option). For the BM emission factor calculation: for the first crediting period, data determined once ex ante, based on the most recent information available on units already built for sample group m at the time of PDD submission to the DOE for validation. For the second and third crediting period, data updated only once ex ante at the start of the second crediting period, based on the most recent information available on units already built at the time of submission of the request for renewal of the crediting period to the DOE.

Data/Parameter	$\eta_{m/k,y} / \eta_{m,y}$
Unit	-
Description	Average net energy conversion efficiency of power unit m or k in year y
Source of data	Data from the Appendix 1 of the "Tool to calculate the emission factor for an electricity system" (version 04.0).
Value(s) applied	See Appendix 4 of this PDD and the attached spreadsheet named "Grid EF and ER_Candelaria_Simple Adjusted OM_27Dec13".
Choice of data or measurement methods and procedures	According to version 04.0 of the "Tool to calculate the emission factor for an electricity system", if the efficiencies are not directly available for the power plants, default values from the Appendix 1 of the Tool should be used.
Purpose of data/parameter	Data used to calculate baseline emissions.
Additional comments	Data determined once for the crediting period.

D.2. Data and parameters monitored

(Copy this table for each data or parameter.)

Data/Parameter	$EG_{BL,y}$
Unit	MWh
Description	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y .
Measured/calculated/default	Measured
Source of data	Electricity meters onsite
Value(s) of monitored parameter	77,015 MWh (Hourly readings from 01/01/2016 to 31/12/2018. Details are shown in Excel spreadsheet titled "Energy data and CERs calc. – 2 nd MP – 2 nd CP")

Monitoring equipment	Data measured using the following commercial electricity meters:										
	<table><tr><th colspan="2">January 1, 2016 – April 30, 2017</th></tr><tr><th>Main Meter Features</th><th>Support Meter Features</th></tr><tr><td>Model: KV2c</td><td>Model: KV2c</td></tr><tr><td>Brand: General Electric</td><td>Brand: General Electric</td></tr><tr><td>Serial number: 28 620 847</td><td>Serial number: 28 620 848</td></tr></table>	January 1, 2016 – April 30, 2017		Main Meter Features	Support Meter Features	Model: KV2c	Model: KV2c	Brand: General Electric	Brand: General Electric	Serial number: 28 620 847	Serial number: 28 620 848
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	Main Meter Features	Support Meter Features									
	Model: KV2c	Model: KV2c									
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Serial number: 28 620 847	Serial number: 28 620 848										
<table><tr><th colspan="2">May 1, 2017 – December 31, 2018</th></tr><tr><th>Main Meter Features</th><th>Support Meter Features</th></tr><tr><td>Model: ION8650</td><td>Model: ION8650</td></tr><tr><td>Brand: Power Logic</td><td>Brand: Power Logic</td></tr><tr><td>Serial number: F-76197</td><td>Serial number: F-76198</td></tr></table>	May 1, 2017 – December 31, 2018		Main Meter Features	Support Meter Features	Model: ION8650	Model: ION8650	Brand: Power Logic	Brand: Power Logic	Serial number: F-76197	Serial number: F-76198	
May 1, 2017 – December 31, 2018											
Main Meter Features	Support Meter Features										
Model: ION8650	Model: ION8650										
Brand: Power Logic	Brand: Power Logic										
Serial number: F-76197	Serial number: F-76198										
Measuring/reading/recording frequency	Data monitored continuously, measured hourly and daily, and recorded hourly, daily, monthly and yearly.										
Calculation method (if applicable)	-										
QA/QC procedures	According to the Commercial Coordination Norm number 14 (NCC-14), clause 14.12, "Periodic Verifications", issued by the Wholesale Market Administrator (<i>Administrador del Mercado Mayorista</i> , AMM), meters and related equipment verifications/audits are carried out annually at the expense of the AMM, to verify the equipment accuracy. In parallel, in order to satisfy the conditions, set forth in the aforementioned norm and to guarantee the precision and quality required, both commercial meters are verified and calibrated periodically by a recognized calibration company at the expense of Candelaria Hydroelectric Project.										
Purpose of data/parameter	Data used to calculate baseline emissions.										
Additional comments	All the data monitored will be archived for two years after the end of the crediting period or the last CERs issuance, whichever occurs later.										

D.3. Implementation of sampling plan

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Not applicable.

SECTION E. Calculation of emission reductions or net anthropogenic removals

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

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Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y(1)$$

Where:

ER_y	= Emission reductions in year y (tCO ₂)
BE_y	= Baseline emissions in year y (tCO ₂)
PE_y	= Project emissions in year y (tCO ₂)
LE_y	= Leakage emissions in year y (tCO ₂)

As per the registered PDD, the ex-ante calculation of the combined emission factor is **0.4833 tCO₂/MWh**. This value is considered fixed throughout the second crediting period.

The net electricity delivered to the grid, generated by Candelaria during the 2nd Monitoring Period of the 2nd Commitment Period is summarized in the next table. A complete report of the delivered electricity is shown in the attached "*Energy data and CERs calc. – 2nd MP – 2nd CP*" spreadsheet.

Candelaria Hydroelectric Plant
Monthly Net Electricity Delivered to the Grid

Period: January 2016 to December 2018, 2nd Monitoring Period 2nd CP

Year	Month	MWhour
2016	January	2,040
	February	1,620
	March	1,528
	April	960
	May	777
	Jun	1,718
	Jul	2,757
	Ago	2,814
	Sep	3,013
	Oct	2,743
	Nov	2,145
	Dic	1,977
2017	January	1,647
	February	1,285
	March	1,420
	April	960
	May	1,102
	Jun	2,426
	Jul	2,966
	Ago	3,200
	Sep	3,028
	Oct	3,082
	Nov	2,937
	Dic	2,367
2018	January	2,114
	February	1,714
	March	1,496
	April	1,069
	May	1,403
	Jun	2,338
	Jul	2,842
	Ago	2,934
	Sep	3,060
	Oct	3,014
	Nov	2,492
	Dic	2,027
TOTAL		77,015

The emission reductions calculated for this Monitoring Period are as follows:

Parameter	$EF_{grid,CM,y}$ (tCO ₂ /MWh)	$EG_{BL,y}$ (MWh/year)	ER_y (tCO ₂)
Data	0.4833	77,015	37,221

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

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As per the methodology, project emissions in year y (PE_y) for hydroelectric power projects without reservoir are null. Thus, $PE_y = 0$.

E.3. Calculation of leakage emissions

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As per the methodology, as energy generating equipment was not transferred from another activity, the leakage emissions are null. Thus, $LE_y = 0$.

E.4. Calculation of emission reductions or net anthropogenic removals

	Baseline GHG emissions or baseline net GHG removals (t CO ₂ e)	Project GHG emissions or actual net GHG removals (t CO ₂ e)	Leakage GHG emissions (t CO ₂ e)	GHG emission reductions or net anthropogenic GHG removals (t CO ₂ e)		
				Before 01/01/2013	From 01/01/2013	Total amount
Total	37,221	0	0	0	37,221	37,221

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

Amount achieved during this monitoring period (t CO ₂ e)	Amount estimated ex ante for this monitoring period in the PDD (t CO ₂ e)
37,221 tCO ₂ e	35,400 tCO ₂ e

E.5.1. Explanation of calculation of “amount estimated ex ante for this monitoring period in the PDD”

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Emission reductions were calculated as follows: $ER_y = EG_{BL,y} \times EF_{grid,CM,y}$

Where:

ER_y = Emission reductions in year y (tCO₂)

$EG_{BL,y}$ = Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh)

For the ex ante calculation of emission reductions, the quantity of net electricity supplied to the grid was estimated based on historical data of real electricity delivered by Candelaria plant. The annual average net electricity delivered by the plant from 2007 to 2012 is 24,415 MWh.

$EF_{grid,CM,y}$ = CM CO₂ emission factor in year y (tCO₂/MWh)

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times W_{OM} + EF_{grid,BM,y} \times W_{BM}$$

According to the Tool, for hydroelectric power generation projects the weights applied for the second crediting period are: $W_{OM} = 0.25$ and $W_{BM} = 0.75$.

The OM emission factor was determined as a 3-year generation-weighted average, based on the most recent data available at the time of submission of the request for renewal of the crediting period to the DOE. Specifically, data from years 2010, 2011 and 2012 were used, and the resulting OM emission factor was 0.8085 tCO₂/MWh.

The BM emission factor was determined based on the most recent information available on units already built at the time of submission of the request for renewal of the crediting period to the DOE. Specifically, data from year 2012 was used, and the resulting BM emission factor was 0.3750 tCO₂/MWh. Thus, the resulting CM emission factor was 0.4833 tCO₂/MWh

As a consequence, the annual value of emission reductions estimated ex ante for the project activity was 11,800 tCO₂ per year, which results in 35,400 tCO₂e for a 3-year period.

E.6. Remarks on increase in achieved emission reductions

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Actual GHG emission reductions achieved is 5.14% greater than the amount based on the ex-ante estimation in the registered PDD.

Emission reductions are determined by the energy generation of the Candelaria hydroelectric plant. Since no modification of the installed electric generation equipment was performed during the monitoring period, increments of the generated energy correspond to more or better distributed water availability.

Variations of the generated energy by Candelaria Hydroelectric Project are influenced by two factors:

- a. Secacao Hydroelectric operation
- b. Hydrology and river's catchment area characteristics (soil absorptivity)

Candelaria's power generation depends directly on Secacao's hydroelectric generation since Secacao is located upstream of Candelaria. The waterflow from Secacao's tailrace channel is conducted to Candelaria's conveyance tunnel, which ends at Candelaria's penstock. The following chart shows the direct correlation between Secacao's and Candelaria's annually generated energy.

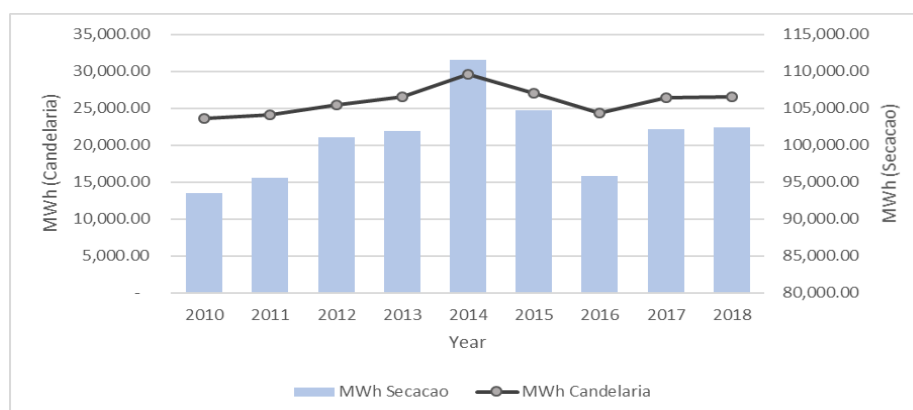


Figure 4 Candelaria's and Secacao's generated energy 2016-2018

As shown in the previous chart, during the present monitoring period (as well as in the previous years) energy generated by Candelaria followed the same pattern as Secacao's.

As indicated above, actual GHG emission reductions achieved was 5.14% greater than the amount based on the ex-ante estimation in the registered PDD. This is the result of a 5.14% higher energy output delivered to the grid. Nevertheless, as shown in the next chart, power output during 2016, 2017, and 2018 remained within normal historical variability range.

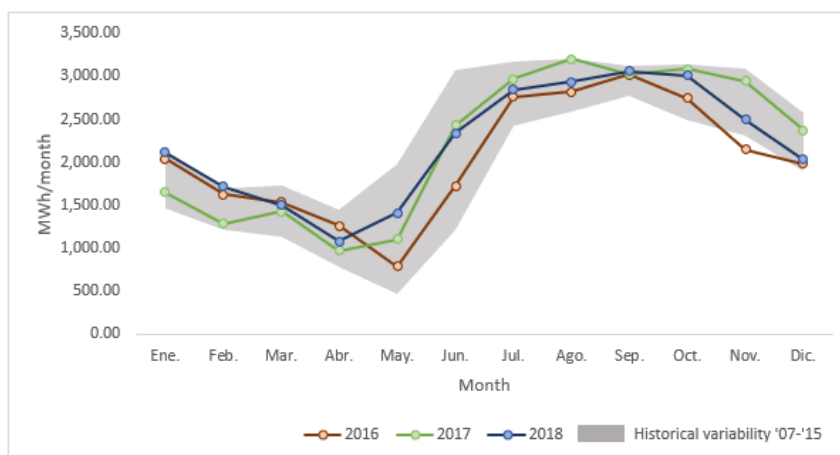


Figure 5 Candelaria's historical generation variability (2007-2015)

As indicated in Section B.6.3 “Ex ante calculation of emission reductions” of the approved PDD, since the electricity generation depends on water availability, the values of electricity delivered could be lower or higher than the average historical value. It is expected a fluctuation of about $\pm 5\%$ of the values of electricity delivered related to the average value.

E.7. Remarks on scale of small-scale project activity

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Project activity consists just of Candelaria Hydroelectric Project (4.3 MW), and not a bundle of project activities. Since there has not been any changes to Candelaria's installed capacity, the project activity remains under the limit of that type (15 MW).

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
07.0	31 May 2019	Revision to: <ul style="list-style-type: none"> • Ensure consistency with version 02.0 of the “CDM project standard for project activities” (CDM-EB93-A04-STAN); • Add a section on remarks on the observance of the scale limit of small-scale project activity during the crediting period; • Add "changes specific to afforestation or reforestation project activity" as a possible post-registration changes; • Clarify the reporting of net anthropogenic GHG removals for A/R project activities between two commitment periods; • Make editorial improvements.
06.0	7 June 2017	Revision to: <ul style="list-style-type: none"> • Ensure consistency with version 01.0 of the “CDM project standard for project activities” (CDM-EB93-A04-STAN); • Make editorial improvements.
05.1	4 May 2015	Editorial revision to correct version numbering.
05.0	1 April 2015	Revisions to: <ul style="list-style-type: none"> • Include provisions related to delayed submission of a monitoring plan; • Provisions related to the Host Party; • Remove reference to programme of activities; • Overall editorial improvement.
04.0	25 June 2014	Revisions to: <ul style="list-style-type: none"> • Include the Attachment: Instructions for filling out the monitoring report form (these instructions supersede the "Guideline: Completing the monitoring report form" (Version 04.0)); • Include provisions related to standardized baselines; • Add contact information on a responsible person(s)/ entity(ies) for completing the CDM-MR-FORM in A.6 and Appendix 1; • Change the reference number from <i>F-CDM-MR</i> to <i>CDM-MR-FORM</i>; • Editorial improvement.
03.2	5 November 2013	Editorial revision to correct table in page 1.
03.1	2 January 2013	Editorial revision to correct table in section E.5.
03.0	3 December 2012	Revision required to introduce a provision on reporting actual emission reductions or net GHG removals by sinks for the period up to 31 December 2012 and the period from 1 January 2013 onwards (EB 70, Annex 11).
02.0	13 March 2012	Revision required to ensure consistency with the "Guidelines for completing the monitoring report form" (EB 66, Annex 20).
01.0	28 May 2010	EB 54, Annex 34. Initial adoption.

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