Monitoring report form
(Version 05.0)

MONITORING REPORT		
Title of the project activity	Paraíso Small Hydropower Plant - PCH Paraíso	
UNFCCC reference number of the project activity	1317	
Version number of the monitoring report	Version 01	
Completion date of the monitoring report	21/04/2015	
Monitoring period number and duration of this monitoring period	Third monitoring period from 01/01/2011 to 31/12/2014 (first and last day included)	
Project participant(s)	Energias do Brasil S/A	
Host Party	Brazil	
Sectoral scope(s)	Sectoral scope 1 : Energy industries (renewable - / non-renewable sources)	
Selected methodology(ies)	ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (version 06)	
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	121,323 tCO_2e (1461 days)	
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
	58,785 tCO_2e (731 days)	94,382 tCO_2e (730 days)

SECTION A. Description of project activity

A.1. Purpose and general description of project activity

Although 75% of the electricity generated in Brazil comes from hydroelectric plants, the necessity to expand country's energy supply, in order to sustain the economic growth achieved in the past few years, has led to a larger participation of thermal power generation in Brazilian electricity matrix. The project has the overall objective of generating electricity to supply the Interconnected National Grid (ING) and address the country's economic growth demand for energy.

The project activity consists in the installation of a hydropower plant (PCH Paraíso) of 21.6 MW installed capacity and a reservoir of 1.2 Km² in river Paraíso. PCH Paraíso is located in the city of Costa Rica in the State of Mato Grosso do Sul and utilizes the Paraíso river hydropower potential to generate electricity. The technology employed at PCH Paraíso is well known established technology in the industry (Francis turbines).

Thus, PCH Paraíso contributes to the overall reduction of CO2 emissions in Brazil, thereby helping the country to meet the reduction goes stipulated by the National Plan on Climate Change (PNMC).

The project was commissioned on 18th August 2003. The commercial operation of the Unit 1 started in 13th March 2003 and the commercial operation of the Unit 2 started in 12th April 2003.

The total emission reductions achieved in this third monitoring period are of 153,167 tCO_2e.

A.2. Location of project activity

SHP Paraíso is located in the river Paraíso, in the Brazilian state of Mato Grosso do Sul, between Costa Rica and Chapadão do Sul municipalities. The geographical coordinates are 19º03' South and 52º59' West.

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)
Brazil (host country)	Energias do Brasil S/A	No

A.4. Reference of applied methodology and standardized baseline

For the project activity, the approved baseline methodology used is ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (version 06 – 19th May 2006)[1]. This methodology also refers to the latest approved version of the "Tool for the demonstration and assessment of additionality (version 03)" [2].

[1] https://cdm.unfccc.int/methodologies/DB/EY2CL7RTEHRC9V6YQHLAR6MJ6VEU83

[2] http://cdm.unfccc.int/Reference/tools/index.html

A.5. Crediting period of project activity

A fixed period of 10 years was chosen for the crediting period going from 11th February 2008 to 10th February 2018.

A.6. Contact information of responsible persons/ entities

The contact information of the entity responsible for completing the form is as follows:

Name of entity: Get2C Brasil Consultoria de Gestão, Ltda.
Address: Rua Amália de Noronha, 151 – cj 502, São Paulo, CEP 05410-010, Brazil
Email: david.garcia@get2c.pt
Contact No.: +55 11 2373-3600

The entity is not the project participant.

SECTION B. Implementation of project activity

B.1. Description of implemented registered project activity

This project aims to generate electricity by exploiting the hydroelectric potential of the Paraíso River. To this end, a small hydroelectric plant (PCH Paraíso), with installed capacity of 21.6 MW, was implemented and integrated into the National Integrated Grid (ING). Only the net energy produced by the PCH (given by the gross energy minus internal consumption of the plant) is redirected to the ING. The project is fully implemented since 2003. More information about the technical aspects of PCH Paraíso is available in the table below.

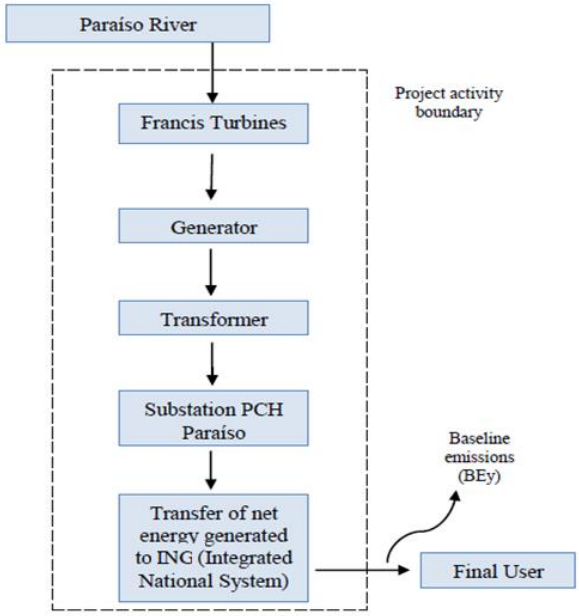
Small Hydro Power Plant - PCH Paraíso		
Turbines	**Turbine 1**	**Turbine 2**
Voith Siemens	Voith Siemens	Voith Siemens
Type	Horizontal Francis	Horizontal Francis
Serial Number	18990	18991
Nominal Capcity	10.8 MW	10.8 MW
Generators	**Generator 1**	**Generator 2**
Unit Capacity (kVA)	12,000	12,000
Power Factor	0.9	0.9
Meters	**Meter 1**	**Meter 2**
Itron	Itron	Itron
Model	Q1000	Q1001
Voltage	115	115

The technology employed at PCH Paraíso Project is a well-known established technology in the industry. A low-level diversion dam raises the water level in the river sufficiently to enable an intake structure to be located on the side of the river. The intake consists of a trash screen and a submerged opening with an intake gate. Water from the intake is normally taken through a pipe (called a penstock) downhill to a power station constructed downstream of the intake and at a low level in order to gain the maximum head on the turbine.

The Francis turbine is the most widely used among water turbines. This turbine is a type of hydraulic reactor turbine in which the water flow exits the turbine blades in the radial direction. Francis turbines are common in power generation and are used in applications where high glow rates are available at medium hydraulic head. Water enters the turbine through a volute casing and is directed onto the blades by wicket gates. The low momentum water then exits the turbine

through a draft tube. In the model, water flow is supplied by a variable speed centrifugal pump. A load is applied to the turbine by means of a magnetic brake, and torque is measured by observing the deflection of calibrated springs. The performance is calculated by comparing the output to the energy supplied. A run-of-river project presents low environmental impact.

This project is based in energy displacement from a renewable energy source to the Brazilian Interconnected National Grid (ING). Therefore the boundary of this project includes all the power plants connected physically to the ING. The Brazilian National Interconnected System comprises the electricity companies in the South, South-East, Center-West, North-East and part of the North region. The chart below demonstrates the project boundary of the project:



B.2. Post-registration changes

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

No temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline have been applied during this monitoring period.

B.2.2. Corrections

No corrections to project information or parameters fixed at validation have been approved during this monitoring period or submitted with this monitoring report.

B.2.3 Changes to start date of crediting period

A permanent change from the registered monitoring plan is being submitted for approval with this monitoring report (concerning the monitoring period from 1st January 2011 to 31th December 2014). The change refers to the monitoring plan and specifically concerning the source of information for the calculation of the Build Margin Emission Factor (EF_{BM}) and Operating margin Emission Factor (EF_{OM}).

In the monitoring plan of the registered PDD (Version 4, 25th May 2007) both the operational margin (EF_{OM}) and the build margin (EF_{BM}) were calculated using the National System Operator (NSO) information on ING daily power dispatch.

Presently, the Brazilian DNA (MCT – Ministério da Ciência, Tecnologia e Inovação) publishes in their website (http://www.mct.gov.br) the emission factors referred. This data is annually updated. Therefore, the calculation of the Emission Factor (EF_y) is simplified by using the MCT data which is an official source, is publicly available and the margin of error for the data is low.

The change has been incorporated in the revised PDD (Version 5 dated 21st April 2015) and is being submitted for approval with this monitoring report.

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

No changes to the project design of the project activity have been approved during this monitoring period or submitted with this monitoring report.

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

No changes to the start date of the crediting period have been approved during this monitoring period or submitted with this monitoring report.

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

Not applicable.

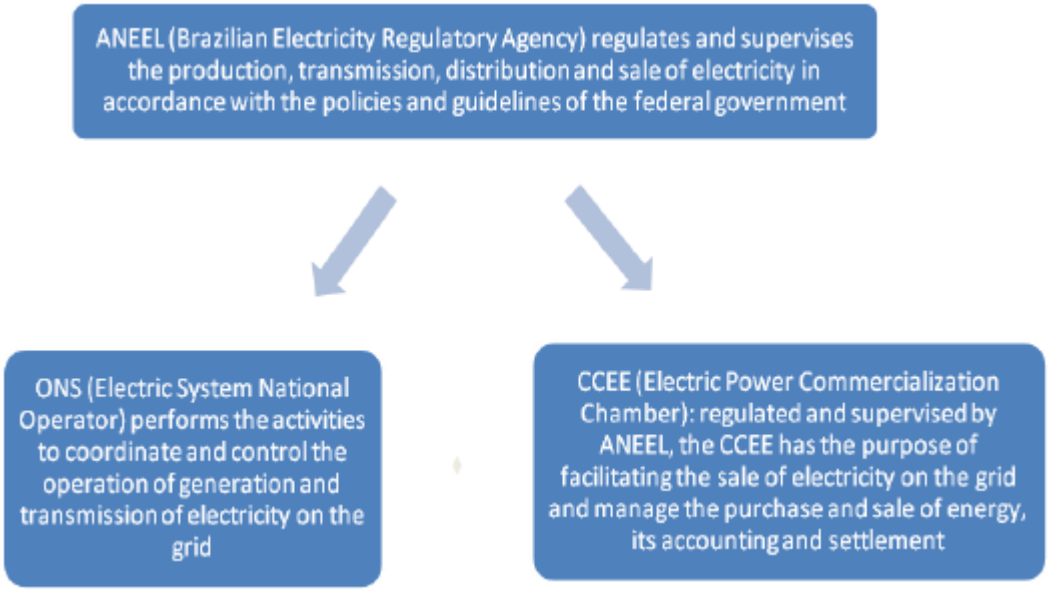
B.2.7. Types of changes specific to afforestation or reforestation project activity

Not applicable.

SECTION C. Description of monitoring system

For the project activity, PCH Paraíso, the most important parameter to be monitored is the amount of electricity generated by the hydropower plant. The data for the emission factor calculation is annually updated by the Brazilian DNA (MCT).

Concerning the electricity data it is important to refer the different responsibilities of the entities involved:



All energy generated by PCH Paraíso is informed to the national regulatory authorities. The electric power market is strictly regulated and the existent norms specify the measurement equipments installed and the standard procedures to be followed.

The CCEE, together with the ONS, is responsible for specify, guide and establish all the issues related to the adequacy of the SFM (Sistema de Adequação e Faturamento). It is as well responsible to the operation and maintenance of the SCDE (Sistema de Coleta de Dados de Energia), in such a way that the collection of data regarding electric energy can be available to be used by the SCL (Sistema de Contabilização e Liquidação).

In order to calculate the emission reductions of the project activity the generated energy that is going to be delivered to the grid (EG_y) is constantly monitored. This monitoring process is planned and carried out according to the Grid Procedures[3] established by the ONS, which are divided in 26 modules and can be easily found on the internet[4]. These procedures are jointly implemented by the agents and the CCEE. SMF is a system that embraces the main and the backup meters, the instrument's transformers (TI) – potential and electrical current transformers –, the means of communication used by the agents and the CCEE, and the systems of data collection for billing.

Both the meters (main and the backup) are located in the substation of PCH Paraíso, beside the power plant. These equipments are calibrated every 24 months (two years), following the ONS recommendations. The calibration pattern used by the measurement agent is given by INMETRO[5], as is required for the Grid Procedures mentioned above. In order to control the data concerning the energy generation, the meters are compared against each other every month. Technical data on the metering system is given below:

[3] Grid Procedures (Procedimentos de Rede) are normative documents developed by the ONS, together with the agents and approved by ANEEL, that define the procedures and requirements needed to perform the activities of energetic operation planning, transmission management, programming and real-time operation under the ING.

[4] http://extranet.ons.org.br/operacao/prdocme.nsf/principalPRedeweb?openframeset

[5] Brazilian institute for metrology and calibration

	Main Meter	Backup Meter
Model	Q1000	Q1000
Manufacturer	Itron	Itron
Serial Number	42104067	42104068
Accuracy	0.2%	0.2%
Calibration Date	25/06/2013	25/06/2013
	29/06/2011	29/06/2011
	20/05/2009	20/05/2009

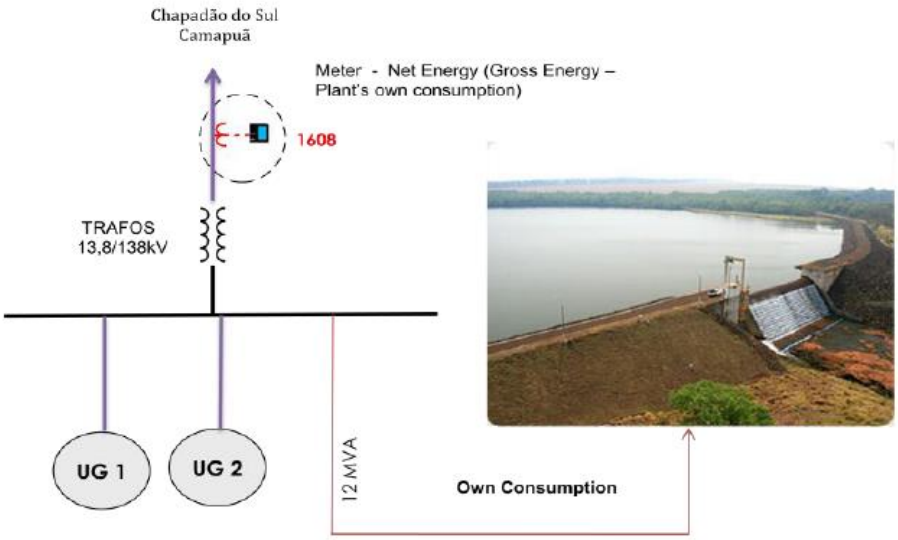
The data stored by the meters is remote and automatically collected by CCEE's SCDE. This procedure can be executed:

- directly, when the SCDE has direct access to the meters beyond the agents responsibility or;
- indirectly (passively) through agent's Unit of Collection and Measurement (UCM), which collects the data from the meters, convert it in XLM archives, according to CCEE specifications, and make it daily available for being collect by the SCDE during the interval established by the CCEE.

In order to get the data collection directly, the measurement agent must have an exclusive gateway (given by the CCEE) that make possible to the Chamber's center of data collection having remote access to the meters at anytime. Thus, the Chamber can collect and consolidate data every five full minutes during the day.

Through the indirect (passive) collection, the CCEE receives and stores, by SCDE, the data from the meters, which also is collected from five to five full minutes and daily sent to CCEE by the agent responsible for the SMF. The measurement data obtained by the meters is electronically archived and compared against the CCEE's controls. The meters register the measurement of the last 35 days and the data remain stored on the device. This data is also stored in the ION Enterprise software, which records the readings and make them available to users. The analysis of the data concerning the energy generation is made by the Department of Market Studies and registered in the datacenter of the measurement agent.

The figure below demonstrates the meters localization and the energy flow at PCH Paraíso:



SECTION D. Data and parameters

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

Data/parameter:	**N/A**
Unit	N/A
Description	N/A
Source of data	N/A
Value(s) applied)	N/A
Choice of data or measurement methods and procedures	N/A
Purpose of data	N/A
Additional comments	N/A

D.2. Data and parameters monitored

Data/parameter:	**EG_y**
Unit:	MWh
Description:	Electricity supplied to the grid by the project
Measured/calculated/default:	Measured
Source of data:	Energy meter installed in the sub-station beside the hydropower plant. Measured by project developer and monitored by ONS
Value(s) of monitored parameter:	2011: 109,959.1 MWh 2012: 102,795.3 MWh 2013: 114,671.0 MWh 2014: 104,836.9 MWh
Monitoring equipment:	Directly measured by the main and/or backup electricity meters installed at the sub-station. **Main Meter** / **Backup Meter** **Model**: Q1000 / Q1000 **Manufacturer**: Itron / Itron **Serial Number**: 42104067 / 42104068 **Accuracy**: 0.2% / 0.2% **Calibration Date**: 25/06/2013 / 25/06/2013; 29/06/2011 / 29/06/2011; 20/05/2009 / 20/05/2009 The meters are calibrated every 24 months (two years), following the recommendations of the ONS. The calibration pattern used by the measurement agent is given by the INMETRO, as is required for ONS' Grid Procedures.
Measuring/reading/recording frequency:	Monthly recorded
Calculation method (if applicable):	N/A

QA/QC procedures:	The electricity supplied by the project activity to the grid is double checked by internal control and by cross check of the meters with ONS system.
Purpose of data:	Baseline emissions calculation
Additional comments:	According with the "Guidelines for Assessing Compliance with the Calibration Frequency Requirements" version 01, approved in the Executive Board 52, Annex 60, paragraph 4, if during verification of a certain monitoring period, the calibration has been delayed, a conservative approach should be adopted in the calculation of emission reductions: (a) Applying the maximum permissible error of the instrument to the measured values, if the results of the delayed calibration do not show any errors in the measuring equipment, or if the error is smaller than the maximum permissible error; or (b) Applying the error identified in the delayed calibration test, if the error is beyond the maximum permissible error of the measuring equipment. In the current Monitoring Period, the calibration was delayed (according to the ONS grid procedures - sub-module 12.3) in the period between 19/05/211 and 29/06/2011 and the option (a) was chosen since the errors presented in the calibration certificates are smaller than the maximum permissible error. Therefore, the monitored values for energy generation were reduced considering the maximum permissible error of the meters, 0.2%, in compliance with the manufacturer´s specifications and in conformance with the IEC 60687 standard for class 0.2S meters, as well as ANSI C12.20 for class 0.2 meters. Having a conservative approach, this procedure was applied for monitored values for the whole two months (May and June of 2011) since the energy generation data is provided as monthly values and there is no assurance that the daily energy generation is constant.

Data / Parameter:	**EF_y**
Unit:	tCO_2e/MWh
Description:	Combined margin CO_2 emission factor
Measured/ Calculated / Default:	Calculated
Source of data:	Brazilian DNA website (MCT - Ministério para a Ciência e Tecnologia), available at http://www.mct.gov.br/index.php/content/view/74689.html
Value(s) of monitored parameter:	2011: 0.1988 tCO_2e/MWh 2012: 0.3593 tCO_2e/MWh 2013: 0.4322 tCO_2e/MWh 2014: 0.4275 tCO_2e/MWh
Monitoring equipment:	N/A
Measuring/ Reading/ Recording frequency:	Annually

Calculation method (if applicable):	The emission factor (EF_y) is calculated as the weighted average of the of operating margin (OM) and build margin (BM) emission factors which are published in the DNA's website, following the guidance of ACM002 methodology.
QA/QC procedures:	This data is calculated, so does not need QA procedures.
Purpose of data:	Baseline emissions calculation
Additional comment:	-

Data / Parameter:	**$EF_{OM,y}$**
Unit:	tCO_2e/MWh
Description:	Operating margin CO_2 emission factor
Measured/ Calculated / Default:	Calculated
Source of data:	Brazilian DNA website (MCT - Ministério para a Ciência e Tecnologia), available at http://www.mct.gov.br/index.php/content/view/74689.html
Value(s) of monitored parameter:	2011: 0.2920 tCO_2e/MWh (average 12 months) 2012: 0.5176 tCO_2e/MWh (average 12 months) 2013: 0.5932 tCO_2e/MWh (average 12 months) 2014: 0.5837 tCO_2e/MWh (average 12 months)
Monitoring equipment:	N/A
Measuring/ Reading/ Recording frequency:	Annually
Calculation method (if applicable):	The annual operating margin emission factor (OM) is calculated as the average value from the monthly values published by the DNA.
QA/QC procedures:	This data is from an official source and is publicly available. Margin of error for the data is low.
Purpose of data:	Baseline emissions calculation
Additional comment:	

Data / Parameter:	**$EF_{BM,y}$**
Unit:	tCO_2e/MWh
Description:	Build margin CO_2 emission factor
Measured/ Calculated / Default:	Calculated
Source of data:	Brazilian DNA website (MCT - Ministério para a Ciência e Tecnologia), available at http://www.mct.gov.br/index.php/content/view/74689.html
Value(s) of monitored parameter:	2011: 0.1056 tCO_2e/MWh 2012: 0.2010 tCO_2e/MWh 2013: 0.2713 tCO_2e/MWh*
Monitoring equipment:	N/A
Measuring/ Reading/ Recording frequency:	Annually

Calculation method (if applicable):	N/A
QA/QC procedures:	This data is from an official source and is publicly available. Margin of error for the data is low.
Purpose of data:	Baseline emissions calculation
Additional comment:	* The value of the Build Margin Emission Factor for the year 2014 is still unavailable at the MCT website (Brazilian DNA - www.mct.gov.br). For the purpose of 2014 emission factor combined margin calculation, the 2013 Build Margin Emission Factor was adopted (the Operating Margin is already provided by MCT for 2014).

D.3. Implementation of sampling plan

Since the parameters monitored in section above are not to be determined by a sampling approach this section is not applicable to the 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

In accordance with the ACM0002 (Version 06), baseline emissions are calculated according to the following formula:

$BE_y = EG_y * EF_y$

Where:

BE_y = baseline emissions in year y;
EG_y = energy generated in year y;
EF_y = emission factor for the year y.

EF_y was calculated ex post for the years 2011, 2012, 2013 and 2014 using the most updated values provided by official source (Brazilian DNA) and using the following formula:

$EF_{CM} = (EF_{OM}*W_{OM}) + (EF_{BM}*W_{BM})$.

$EF_{OM,2011-2014}$, according to MCT:

OPERATING MARGIN - 2011												
Average Emission Factor (tCO_2/MWh) - per month												
January	February	March	April	May	June	July	August	September	October	November	December	Average
0.2621	0.2876	0.2076	0.1977	0.2698	0.341	0.3076	0.3009	0.2734	0.3498	0.3565	0.3495	0.2920

OPERATING MARGIN - 2012												
Average Emission Factor (tCO_2/MWh) - per month												
January	February	March	April	May	June	July	August	September	October	November	December	Average
0.2935	0.3218	0.405	0.6236	0.5943	0.5056	0.3942	0.449	0.6433	0.6573	0.6641	0.6597	0.5176

OPERATING MARGIN - 2013												
Average Emission Factor (tCO_2/MWh) - per month												
January	February	March	April	May	June	July	August	September	October	November	December	Average
0.6079	0.5958	0.5896	0.601	0.583	0.608	0.5777	0.5568	0.591	0.5891	0.6082	0.6102	0.5932

OPERATING MARGIN - 2014												
Average Emission Factor (tCO_2/MWh) - per month												
January	February	March	April	May	June	July	August	September	October	November	December	Average
0.6155	0.5989	0.5699	0.5772	0.5605	0.5678	0.5674	0.5862	0.5994	0.5901	0.5885	0.5825	0.5837

$EF_{BM,2011-2014}$, according to MCT:

Year	Build Margin
2011	0.1056
2012	0.2010
2013	0.2713
2014	0.2713[6]

According to ACM0002 methodology the $W_{OM, BM}$ considered for all the years considered is:

Weight	Value
(W_{OM}/W_{BM})	0.5

Therefore, the $EF_{CM, 2011-2014}$ was calculated according with the formula presented previously:

Year	EF_{CM}
2011	0.1988
2012	0.3593
2013	0.4322
2014	0.4275[7]

The data concerning EG_y was obtained through the meters installed at PCH Paraíso substation and Cross checked with ONS system. The data on energy generation is detailed below:

Energy Generated (EGy - MWh)				
Month	2011	2012	2013	2014
January	11,054.1	9,426.8	11,204.3	8,828.8
February	9,761.5	9,986.6	11,406.8	8,540.7
March	13,479.0	10,770.9	12,989.7	10,970.4
April	10,471.9	10,220.6	11,894.4	10,691.8
May	10,454.4	10,108.1	9,987.3	8,988.4
June	9,218.4	7,308.0	8,696.4	7,802.6
July	8,500.1	6,979.7	8,582.9	8,443.7
August	7,664.4	7,545.3	7,646.1	7,253.6
September	6,712.5	6,930.8	7,129.6	6,353.5
October	7,951.7	7,354.9	8,089.6	6,810.5
November	7,376.6	8,135.3	7,606.4	8,094.6
December	7,314.6	8,028.1	9,437.4	12,058.3
Total	109,959.1	102,795.3	114,671.0	104,836.9
Total corrected	109,919.8	102,795.3	114,671.0	104,836.9

Month	EGy (MWh) Corrected
May 2011	10,433.5
June 2011	9,200.0

Maximum permissible error
0.20%

Calculation: $BE_y = EF_{y,CM,grid} * EG_y$

Year	BE_y (tCO_2e)

[6] The value of the Build Margin for the year 2014 is still unavailable at the MCT website (Brazilian DNA - http://www.mct.gov.br/index.php/content/view/74689.html). For the purpose of 2014 emission factor combined margin calculation, the 2013 Build Margin Emission Factor was adopted.

[7] The value of the Build Margin for the year 2014 is still unavailable at the MCT website (Brazilian DNA - http://www.mct.gov.br/index.php/content/view/74689.html). For the purpose of 2014 emission factor combined margin calculation, the 2013 Build Margin Emission Factor was adopted (the Operating Margin is already provided by MCT for 2014).

2011	21,850
2012	36,935
2013	49,566
2014	44,816
Total	**153,175**

According with the "Guidelines for Assessing Compliance with the Calibration Frequency Requirements" version 01, approved in the Executive Board 52, Annex 60, paragraph 4, if during verification of a certain monitoring period, the calibration has been delayed, a conservative approach should be adopted in the calculation of emission reductions:

(a) Applying the maximum permissible error of the instrument to the measured values, if the results of the delayed calibration do not show any errors in the measuring equipment, or if the error is smaller than the maximum permissible error; or

(b) Applying the error identified in the delayed calibration test, if the error is beyond the maximum permissible error of the measuring equipment.

In the current Monitoring Period, the calibration was delayed (according to the ONS grid procedures - sub-module 12.3) in the period between 19/05/211 and 29/06/2011 and the option (a) was chosen since the errors presented in the calibration certificates are smaller than the maximum permissible error. Therefore, the monitored values for energy generation were reduced considering the maximum permissible error of the meters, 0.2%, in compliance with the manufacturer´s specifications and in conformance with the IEC 60687 standard for class 0.2S meters, as well as ANSI C12.20 for class 0.2 meters.

Having a conservative approach, this procedure was applied for monitored values for the whole two months (May and June of 2011) since the energy generation data is provided as monthly values and there is no assurance that the daily energy generation is constant.

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

According to the version 6 of ACM0002 methodology, if the power density of project activity is greater than 4 W/m² and less than or equal 10 W/m², it is necessary the calculation of the emissions from reservoir expressed as tCO2e/year. If the power density of the project activity is greater than 10W/m² then the emissions from the reservoir are considered equal to zero.

The power density of the project activity (PD) is calculated as follows:

$PD = (CAP_{PJ} – CAP_{BL}) / (A_{PJ} – A_{BL})$

Where:

PD = Power density of the project activity (W/m^2)

CAP_{PJ} = Installed capacity of the hydro power plant after the implementation of the project activity (W)

CAP_{BL} = Installed capacity of the hydro power plant before the implementation of the project activity (W). For new hydro power plants, this value is zero

A_{PJ} = Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m^2)

A_{BL} = Area of the reservoir measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m^2). For new reservoirs, this value is zero

Thus:
PD = 21.6 MW/ 1.2 Km^2 = **18 W/m^2**

Once the Power Density of PCH Paraíso is greater than 10, project emissions (PE_y) are equal to zero.

E.3. Calculation of leakage

According to the selected approved methodology (ACM0002 – Version 06), no leakage emissions are considered. The main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction, fuel handling (extraction, processing, and transport), and land inundation (for hydroelectric projects – see applicability conditions above). Project participants do not need to consider these emission sources as leakage in applying this methodology.

E.4. 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	153,167	0	0	58,785	94,382	153,167

E.5. 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)	121,323 tCO2e	153,167 tCO2e

* Annual emission reductions in ex-ante calculation of the registered CDM-PDD are 30,310 tCO_2e. The value presented is adjusted to 121,323 tCO_2e considering that the duration of the monitoring period is 1461 days.

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

The project activity achieved 126% of the PDD values during this monitoring period (from 1st January 2011 - 31th December 2014). The difference from the PDD values are mainly due to the substantially increase of the emission factor. The registered PDD considered a value for EF_y= 0.2611 tCO_2e/MWh. The average emission factor for this monitoring period is 0.3545 tCO_2e/MWh.

- - - - -

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	Energias do Brasil
Street/P.O. Box	Rua Bandeira Paulista, 530
Building	
City	São Paulo
State/region	São Paulo
Postcode	04532-001
Country	Brazil
Telephone	+55 11 2185 5900
Fax	+55 11 2185 5914
E-mail	pedro.sirgado@energiasdobrasil.com.br
Website	www.energiasdobrasil.com.br
Contact person	Pedro Sirgado
Title	Eng.
Salutation	Mr.
Last name	Sirgado
Middle name	
First name	Pedro
Department	
Mobile	
Direct fax	
Direct tel.	
Personal e-mail	

Project participant and/or responsible person/ entity	☐ Project participant ☒ Person/entity responsible for completing the CDM-MR-FORM
Organization name	Get2C Brasil Consultoria de Gestão, Ltda.
Street/P.O. Box	Rua Amália de Noronha, 151 – cj 502
Building	
City	São Paulo
State/region	São Paulo
Postcode	05410-010
Country	Brazil
Telephone	+55 11 2373-3600
Fax	
E-mail	david.garcia@get2c.pt
Website	www.get2c.pt
Contact person	David Garcia
Title	Senior Analyst
Salutation	Mr.
Last name	Garcia
Middle name	
First name	David
Department	
Mobile	+55 11 98959-4171
Direct fax	
Direct tel.	
Personal e-mail	david.garcia@get2c.pt

- - - - -

Document information

Version	*Date*	*Description*
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