

**VALIDATION ASSESSMENT FOR APPROVAL OF CHANGES IN A REGISTERED
PDD**

**SANTA ANA HYDROELECTRIC PLANT
(UNFCCC REGISTRATION REF. NO. 0275)**

**EMPRESA ACUEDUCTO Y ALCANTARILLADO DE BOGOTÁ (EAAB)
(COLOMBIA)**

**EDF TRADING LIMITED
(UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND)**

**MGM CARBON PORTFOLIO, S.A.R.L.
(SWITZERLAND)**

VALIDATION ASSESSMENT No. CDM-VALOP-13-007-01

DECEMBER, 2013

VALIDATION ASSESSMENT



Project title:	Santa Ana Hydroelectric Plant	Project No.:	UNFCCC REGISTRATION REF. No. 0275
Audit team:	Diana Santos ICONTEC Lead Auditor Cristian Grisales ICONTEC Auditor/Technical Expert	Organizational unit:	Instituto Colombiano de Normas Técnicas y Certificación – ICONTEC Calle 53 No.58-33 Bogotá - Colombia
Date of first issue:	06/12/2013	Validation Assessment No:	CDM-VALOP-13-007-01
Version No.:	01	Last version date:	December 12 th 2013
PDD original version	Version # 2 10/01/2006	PDD Last version	Version # 3 29/11/2013
Sectoral scope	1: Energy industries (renewable - / non renewable sources).	Crediting period number	First Crediting Period
		Duration of crediting period	01/08/2005 to 31/07/2015
Client:	Empresa Acueducto y Alcantarillado de Bogota (EAAB)	Client ref.:	CDMVE-13-001

1. OBJECTIVE

ICONTEC was contracted by “Empresa Acueducto y Alcantarillado de Bogota (EAAB)” to perform a validation assessment of changes to the registered PDD of the project No.0275 “Santa Ana Hydroelectric Plant”.

The purpose of the validation assessment is to have an independent third-party assessment of the revision of the monitoring plan in order to request for approval by the CDM EB.

2. SCOPE

The validation assessment involves the independent and objective revision to determine whether permanent changes from the registered PDD comply with the procedures of the UNFCCC.

Relevant rulings by the CDM Executive Board:

- CDM Project Cycle Procedure, version 05.0, paragraph 130 to 157.
- CDM Project Standard, version 05.0, paragraph. 209 to 228,
- CDM Validation and Verification Standard, version 05.0, paragraph. 247 to 282.

3. GHG PROJECT DESCRIPTION

The project activity examined under this verification process consists of a small run-of-river type hydroelectric plant, with an installed capacity of 13.43 MW, introduced into the municipal potable water supply system of Bogotá – Colombia, located on the outskirts of the city. The project began operations in the second semester of 2005. Santa Ana Hydroelectric Plant project installed at the base of the Usaquén Alternate tunnel, a power house with hydroelectric power conversion equipment, that turbines the water passing from the Wiesner water treatment plant into the distribution storage system of the city, producing clean electricity to be placed into the Colombian National Interconnected Grid, following local existing electricity market regulations and required environmental and operational permits.

The power capacity is 13.43 MW and the energy generation of Santa Ana Hydroelectric Plant is transmitted to the national grid through a short 34.5 kV line connecting the power plant with the Usaquén Electrical Substation, which could generate until 90 GWh/year, owned by the local operator CODENSA. Just before this point (Usaquén Electrical Substation), in the same location, there is a step down transformer 34.5/11.4 kV, owned by EAAB, where the power is adjusted to the voltage level required for connection to Usaquén Electrical Substation of CODENSA. Besides that, in Usaquén EAAB installations there are two meters (main and back up) used for EAAB to verify and validate measurements of Santa Ana Hydroelectric Plant input registered by the meters of commercial frontier in Usaquén Electrical Substation of CODENSA.

The Santa Ana Hydroelectric Plant reduces GHG emissions by generating clean hydroelectric power that otherwise has been generated by fossil fuel based power plants connected to the Colombian Grid.

The project applied the methodology AMS I.D “*Grid connected renewable electricity generation*”, version 7.

4. DESCRIPTION OF POST REGISTRATION CHANGES

4.1. Temporary deviations from the registered monitoring plan and/or monitoring methodology

It does not apply.

4.2. Corrections

During the seventh monitoring period of the project activity, 2 corrections were reported in the registered PDD, related with the lines of authority and responsibility for project monitoring, reported in section D.3 and the with the number of procedures related to power generation.

The first correction consists in the updating of the performed activities, responsible, and responsibilities related with the channels of authority and responsibility initially defined in the registered PDD.

The performed updates were:

Table 1: Outdated channels of authority and responsibility for different aspects associated to the project monitoring

<i>Activity</i>		<i>Authority</i>	<i>Responsibility</i>
<i>Measurement</i>	<i>Internal</i>	<i>Electromechanical Services Office Director</i>	<i>Plant Operator / Energy negotiator</i>
	<i>External</i>	<i>EMGESA</i>	<i>CAM</i>
<i>Registration</i>	<i>Internal</i>	<i>Electromechanical Services Office Director</i>	<i>Plant Operator / Energy negotiator</i>
	<i>External</i>	<i>EMGESA</i>	<i>CAM</i>
<i>Verification</i>	<i>Internal</i>	<i>Electromechanical Services Office Director</i>	<i>Control Center Chief/ Energy negotiator</i>
	<i>External</i>	<i>XM EMGESA CODENSA</i>	<i>CAM CODENSA EMGESA</i>
<i>Report</i>	<i>Internal</i>	<i>Electromechanical Services Office Director</i>	<i>Control Center Chief/ Energy negotiator</i>
	<i>External</i>	<i>EMGESA</i>	<i>CAM</i>
<i>Calibration and maintenance</i>	<i>Internal</i>	<i>Electromechanical Services Office Director</i>	<i>Control Center Chief/ Energy negotiator</i>
	<i>External</i>	<i>EMGESA CODENSA</i>	<i>CAM</i>

Table 2: New channels of authority and responsibility for different aspects associated to the project monitoring

<i>Activity</i>		<i>Authority</i>	<i>Responsibility</i>
<i>Measurement</i>	<i>Internal</i>	<i>Electromechanical Services Office Director</i>	<i>Plant Operator / Energy negotiator</i>
	<i>External</i>	<i>EMGESA</i>	<i>CAM</i>
<i>Registration</i>	<i>Internal</i>	<i>Electromechanical Services Office Director</i>	<i>Plant Operator / Energy negotiator</i>
	<i>External</i>	<i>EMGESA</i>	<i>CAM</i>

Verification	Internal	Electromechanical Services Office Director	Control Center Chief/ Energy negotiator
	External	XM EMGESA CODENSA	CAM CODENSA EMGESA
Report	Internal	Electromechanical Services Office Director	Control Center Chief/ Energy negotiator
	External	EMGESA	CAM
Calibration and maintenance	Internal	Electromechanical Services Office Director	Control Center Chief/ Energy negotiator
	External	EMGESA CODENSA	CAM

The second change consists in the correction of the typographical mistake made in section D.4 where **21 procedures designed to monitor electricity generation at multiple levels** were reported, although the company had only **one (1)** specific procedure related to power generation (MA0407P) and several instructives, which are applicable to all energy generation and distribution activities.

Figure 1: Typographical correction made in registered PDD, section D.4

D.4. Qualitative explanation of how quality control (QC) and quality assurance (QA) procedures are undertaken:

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EAAB has implemented a quality control program with one (1) specific procedure related to power generation (MA0407P) and several technical instructive (MA0407I01, MA0407I02, MA0407I03 and MA0407I04) which are applicable to the activity. ~~21 procedures~~ designed to monitor electricity generation at multiple levels and other matters, its delivery to the grid, and cross checking with electricity purchaser, regional distributor and UPME. This quality control program was recommended by the DOE and is being carried out specifically for the purpose of supporting the CDM project activity.

ICONTEC during the onsite visit and by reviewing the corrections proposed by PP in the updated version of the PDD /2/ could verify that those corrections accurately reflect both the actual roles and responsibilities of EAAB's professionals with the monitoring of the project and the correct number of procedures for maintenance and operation currently approved.

4.3. Changes to the start date of the crediting period

It does not apply.

4.4. Permanent changes from the registered monitoring plan or monitoring methodology

It does not apply.

4.5. Changes to the project design of a registered project activity

It does not apply.

4.6. Dates of changes

The changes occurred during the 7th monitoring period and they were approved by ICONTEC on November 27th 2013, dated when was approved the action plan reported for CL 12 and FAR 1.

4.7. Reasons for Changes Taking Place

The reasons for the changes were the identification of a typographical mistake in section D.4 of the registered PDD and an update in the roles of responsibility in EAAB, related with the monitoring.

4.8. Impact of changes

4.8.1. Additionality of the project activity

It does not apply.

4.8.2. Scale of the project activity

It does not apply.

4.8.3. Applicability and application of approved baseline methodology under which the project activity has been registered or the later version of the applied methodology

It does not apply.

4.8.4. The compliance of the monitoring plan with applied monitoring methodology

It does not apply.

4.8.5. The level of accuracy of the monitoring compared with the requirements contained in the registered monitoring plan

It does not apply.

5. CONCLUSION OF VALIDATION ASSESSMENT

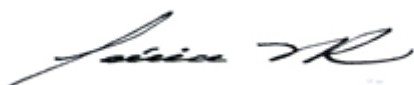
ICONTEC can confirm that the changes on PDD, version 03.0, dated on 29/11/2013, described on the Section 4 of this document corresponds to:

- The channels of authority and responsibility for project monitoring according to the new operational structure
- Typographical correction of the procedure related to power generation (MA0407P) and several instructive (MA0407I01, MA0407I02, MA0407I03 and MA0407I04) which are applicable to all energy generation and distribution activities

ICONTEC deems that the above mentioned corrections, accurately reflect the actual project information and that the corrected issues reflect the application of the applied methodology and/or monitoring plan.

CDM project:	Santa Ana Hydroelectric Plant
Registration date:	11/05/2006
Registered PDD date and version	PDD version 02, dated on 10/01/2006
Revised PDD and version:	Revised PDD, version 03, dated on 29/11/2013
Baseline emissions:	20,642 tCO ₂ e
Project emissions:	0 tCO ₂ e
Leakage:	0 tCO ₂ e
Emission reductions over the crediting period:	206,424 tCO ₂ e

Bogotá D.C., 23/12/2013



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