MONITORING REPORT
Version 1.0 – Date 08/02/2011

COTE SMALL SCALE HYDROPOWER PLANT
CDM Registration Number: 0251
Monitoring Period Nº2: April 1st, 2006 through March 31st, 2010

SECTION A. General description of the project activity

A.1. Brief description of the project activity:

The purpose of the project is renewable electricity generation to be supplied to Costa Rica's national electric grid named National Interconnected System ("*NIS*"). The project's installed capacity and projected yearly average generation are 6.786 Megawatts ("MW") and 13.2[1] Gigawatts hours ("GWh"), respectively.

The project takes advantage of the infrastructure already installed to divert water from Cote Lake[2] to the Rugama Creek which flows into the *Instituto Costarricense de Electricidad*[3] ("*ICE*") Arenal Reservoir[4]. In particular the project uses the existing water intake structure (a tunnel of 389 meter-length and a damn). The project takes water from the Cote River and transports it by way of a conducting tunnel and underground pressure pipe until the power house, where the water is turbinated and delivered in unalterated conditions to the Rugama Creek which flows into the Arenal Reservoir[5]. The project has an 87.79 meters ("m") net head; with nominal water flow of 8.4 m^3/s.

The project supplies electricity to the *NIS* through its own 200 meters ("m") – 34.5 Kilovolts ("KV")[6] transmission line which connects to the closest distribution line that belongs to *ICE*. *ICE* is the distributor of the closest-to-the-project distribution system named Tilarán-Guatuso distribution circuit. Such distribution line owned by *ICE* will transport the electricity generated by the project until the Substation Arenal[7], which belongs to *NIS*. Substation Arenal will transform the energy from 34.5 KV to 120 KV and 240 KV. The state owned distributor *Compañía Nacional de Fuerza y Luz* ("*CNFL*")[8] is the project's sponsor ("the sponsor"). The

[1] Taken from the project's feasibility study.
[2] Costa Rica's largest natural lake.
[3] A stated owned vertically integrated utility that manages the power sector being the only power purchaser in the country.
[4] Built in 1982. The infrastructure purpose was to convert the Cote Lake into and hydropower plant regulating reservoir, which would be used for the Arenal hydroelectric project.
[5] As the structure built in 1982 did as well.
[6] The Project counts with its own substation that transform the project's electricity generated up to 34.5 KV.
[7] Owned by *ICE*.
[8] Largest electricity distributor in Costa Rica and which also has the distribution in San José (the capital), the largest local market. The sponsor has been in operation since 1941.

project is in compliance with all Costa Rican regulations for hydropower plants generation activities[9].

Sustainable development Indicators:

According to the registered PDD, the sponsor monitored local environmental and social positive impacts through a Sustainable Development Monitoring Plan ("SDMP"). The monitored sustainable development indicators during the operational period 2006-2007, 2007-2008 and 2005-2006 are as follows:

- ***Monitoring Period 2006-2007***

Sustainable Development Indicators

Sub-Project Name:	Cote Hydro-Power Project					
Year:						
Performance indicator	Performance indicator (unit)	Monitoring schedule	2006	2007	Project performance (unit)	Net performance (unit, yes/no)
Environmental indicators						
Reforestation and revegetation	Regetated/reforested area as % of the total area devegetated/ deforested	During first 4 years of operation	50 trees planted	100 trees planted	250 trees planted in 3500m2 (0,35 ha)	Yes
Minimum ecological flow	m3/s	Annually during operation	N.A	N.A		
Water quality	BOD, TSS, DO	Annually during operation	November**	March and November	2 seasonal monitoring per year	Yes
Biodiversity	Number of key bioindicator species, frequency of sightings	Annually during operation	December**	May and December	2 seasonal monitoring per year	Yes
Payment for environmental services to protect watershed forests	US$ payments	During first 10 years of operation	$23523,5	$23523,5	US$20,020/ year ($40/ha for 500,5ha)	Yes
Socio-economic indicators						
Economic activity	Number of permanent jobs created by the project	Annually during operation	14	14	14	Yes
Infrastructure	Quality of access ways and roads maintained by SP	Annually during operation	Good conditions	Good conditions	Good	Yes
Signature / Date:						

*Includes legal expenses payed to Financiamiento Forestal (FONAFIFO)
**In 2005 rainny season monitoring are restarted por a 3 year additional period.

[9] The Project would be primarly operating under Law 7554 (Environmental Organic Law of 1995), Law 449 that legally allocates to *ICE* (98.6% shareholder of the sponsor) the responsibility of the development of electricity generation projects and regulated under Law 7593, which created the regulatory entity called *Autoridad Reguladora de Servicios Públicos* ("*ARESEP*"). The sponsor does not require water concessions, generation permits, etc., required by private projects, as it is a state owned company.

- ***Monitoring Period 2007-2008***

Sustainable Development Indicators

Sub-Project Name:	Cote Hydro-Power Project						
Year:			Project performance (unit)				
Performance indicator	Performance indicator (unit)	Monitoring schedule	Project expectation (unit)	2007	2008	Project performance (unit)	Net performance (unit, yes/no)
Environmental indicators							
Reforestation and revegetation	Regetated/reforested area as % of the total area devegetated/ deforested	During first 4 years of operation	250 trees in first 4 years of operation	50 trees planted	100 trees planted	250 trees planted in 3500m2 (0,35 ha)	Yes
Minimum ecological flow	m3/s	Annually during operation	Not applicable	N.A	N.A		
Water quality	BOD, TSS, DO	Annually during operation	2 times per year (dry and rainny season)	November**	March and November	2 seasonal monitoring per year	Yes
Biodiversity	Number of key bioindicator species, frequency of sightings	Annually during operation	2 times per year(dry and rainny season) fauna bentónica, ictiofauna, zooplancton y fitoplancton	December**	May and December	2 seasonal monitoring per year	Yes
Payment for environmental services to protect watershed forests	US$ payments	During first 10 years of operation	US$36,000/year ($40/ha for 900ha)*	$23523,5	$23523,5	US$20,020/ year ($40/ha for 500,5ha)	Yes
Socio-economic indicators							
Economic activity	Number of permanent jobs created by the project	Annually during operation	20	14	14	14	Yes
Infrastructure	Quality of access ways and roads maintained by SP	Annually during operation	Good	Good conditions	Good conditions	Good	Yes
Signature / Date:							

*Includes legal expenses payed to Financiamiento Forestal (FONAFIFO)
**In 2005 rainny season monitoring are restarted por a 3 year additional period.

- ***Monitoring Period 2008-2009***

Sustainable Development Indicators

Sub-Project Name:	Cote Hydro-Power Project						
Year:	2006-2009		Project performance (unit)				
Performance indicator	Performance indicator (unit)	Monitoring schedule	Project expectation (unit)	2008	2009	Project performance (unit)	Net performance (unit, yes/no)
Environmental indicators							
Reforestation and revegetation	Regetated/reforested area as % of the total area devegetated/ deforested	During first 4 years of operation	250 árboles en los primeros 4 años	Este proceso ya fue finalizado	Este proceso ya fue finalizado	100 árboles	si
Water quality	BOD, TSS, DO	Annually during operation	2 monitoreos anuales (época seca y lluviosa) de calidad de agua, ictiofauna, zooplancton y fitoplancton	Mayo y Octubre	El monitoreo realizado se encuentra fuera del período de monitoreo de este reporte	2 monitores estacionales al año	si
Biodiversity	Number of key bioindicator species, frequency of sightings	Annually during operation	2 monitoreos anuales (época seca y lluviosa) de fauna bentónica,	Mayo y Noviembre	El monitoreo realizado se encuentra fuera del período de monitoreo de este reporte	2 monitores estacionales al año	si
Payment for environmental services to protect watershed forests	US$ payments	During first 10 years of operation	US$36,000/year ($40/ha for 900ha)*	$23523,8	$43133,50	US$20,020/ año ($40/ha for 500,5ha)	si
Socio-economic indicators							
Economic activity	Number of permanent jobs created by the project	Annually during operation	20	15	15	14	si
Infrastructure***	Quality of access ways and roads maintained by SP	Annually during operation	Good	Buenas condiciones	Buenas condiciones	Bueno	si
Signature / Date:							

*Incluyen gastos legales pagados al Fondo de Financiamiento Forestal (FONAFIFO)
*** El mantenimiento de la carretera principal de comunicación utilizada por la Planta la provee el Ministerio de Obras Públicas y Transportes por ser una carretera nacional.

- ***Monitoring Period 2009-2010***

Sustainable Development Indicators							
Sub-Project Name:	**Cote Hydro-Power Project**						
Year:	2009-2010		Project performance (unit)				
Performance indicator	Performance indicator (unit)	Monitoring schedule	Project expectation (unit)	2009	2010	Project performance (unit)	Net performance (unit, yes/no)
Environmental indicators							
Reforestation and revegetation	Regetated/reforested area as % of the total area devegetated/ deforested	During first 4 years of operation	250 árboles en los primeros 4 años	Este proceso ya fue finalizado	Este proceso ya fue finalizado	100 árboles	si
Water quality	BOD, TSS, DO	Annually during operation	2 monitoreos anuales (época seca y lluviosa) de calidad de agua, ictiofauna, zooplancton y fitoplancton	marzo-junio-octubre	El monitoreo realizado se encuentra fuera del período de monitoreo de este reporte	2 monitores estacionales al año	si
Biodiversity	Number of key bioindicator species, frequency of sightings	Annually during operation	2 monitoreos anuales (época seca y lluviosa) de fauna bentónica,	mayo-diciembre	El monitoreo realizado se encuentra fuera del período de monitoreo de este reporte	2 monitores estacionales al año	si
Payment for environmental services to protect watershed forests	US$ payments	During first 10 years of operation	US$36,000/year ($40/ha for 900ha)*	$43133,50**	$40913,50**	US$20,020/ año ($40/ha for 500,5ha) por las 370 has se giran en el primer año $53/ha	si
Socio-economic indicators							
Economic activity	Number of permanent jobs created by the project	Annually during operation	20	15	15	14	si
Infrastructure***	Quality of access ways and roads maintained by SP	Annually during operation	Good	Buenas condiciones	Buenas condiciones	Bueno	si
Signature / Date:							

*Incluyen gastos legales pagados al Fondo de Financiamiento Forestal (FONAFIFO)
** Para el año 2009 se realizó el primer pago de 370 hectáreas adicionales, correspondientes al nuevo proyecto de BABELO S.A. por un monto el primer año de 53 dólares por hectárea que se giraron al FONAFIFO en el primer pago anual. En el año 2010 se pagarán en el mes de diciembre por las 870.5 hectáreas un monto de 47 dólares por hectárea
*** El mantenimiento de la carretera principal de comunicación utilizada por la Planta la provee el Ministerio de Obras Públicas y Transportes por ser una carretera nacional.

PERMANENT JOBS

The Cote H. P. was conceived to be a unattended hydroelectric central, nevertheless due CNFL's social compromise, it 15 jobs were created to carry out the work of the operation and maintenance of the generation equipment, administrative activities, as well as miscellaneous activities (maintenance of green areas, cleaning, cutting the grass, etc.), and 15 persons of the area were hired, which were trained to carry out the corresponding tasks of their positions and responsibilities, they also received the training in environmental matters during the CNFL's certification of the generation process, which resulted in the ISO 14001 certification of this Plant in December 2007.

Further details on the above can be reviewed in the detailed report prepared by the sponsor. The report will be presented to the DOE during the verification process.

This Monitoring Report is for the period starting from April 1, 2006 to 31st March 2010. The total emission reduction achieved in this monitoring period is 25,517 tCO_2e.

A.2. Project Participants

NAME OF PARTY INVOLVED	PRIVATE AND/OR PUBLIC ENTITY(IES) PROJECT PARTICIPANTS	KINDLY INDICATE IF THE PARTY INVOLVED WISHES TO BE CONSIDERED AS PROJECT PARTICIPANT (YES/NO)
Costa Rica (Host)	Compañía Nacional de Fuerza y Luz, S.A. ("CNFL")	No
Government of Finland	International Bank for Reconstruction and Development (IBRD) as the Trustee of the Prototype Carbon Fund (PCF)	Yes

A.3. Location of the project activity:

The project is a small hydropower plant located in Costa Rica, located over the Guanacaste and Alajuela Provinces, over the Tilatán (Guanacaste) and the Guatuso (Alajuela) Counties, over the Nuevo Arenal (in Tilarán) and Cote (in Guatuso) Districts.

The transmission line is located in Tilarán County. The project is approximately 3-km away from the closest population composed by the Nuevo Arenal District. The project is located approximately 4.5 hours driving from San José. The water intake is at 647.4 masl, the load chamber at 637.2 masl. and the discharge channel to the Rugama Creek at 539 masl.

The plant is located between the following coordinates:

- 10º34'29,26" North – 84º54'58,30" West.
- 10º32'51,62" North – 84º54'58,12" West.
- 10º32'51,74" North – 84º53'52,33" West.
- 10º34'29,38" North – 84º53'52,51" West.

For illustration purposes, the scheme of the project is presented in the following graphic (based upon the map sheet Arenal I3247 IV from the National Geographic Institute):

A.4. Technical description of the project

Aside from using the already built water intake constructed for the Arenal hydroelectric project in 1982, the project's technology contains an open channel, an additional conducting tunnel, an underground 789,35m – 1,8m diameter pressure pipe, a fore-bay, a powerhouse containing a 6.786 MW Francis Turbine (of horizontal axis and located at 547 masl), a substation located next to the powerhouse and a sluice leading to the Rugama Creek.

The powerhouse and substation will occupy an area of 18.5 ha. on land already highly disturbed and altered as a result of the construction of the Arenal hydroelectric project. The powerhouse is 9.4m wide, 15.4m length and 7m height.

The net head is 87.79m, nominal capacity losses are 3.66m, and the water flow is 8.4 m^3/s. All turbinated water is discharged back to the existing Rugama Creek in unaltered conditions.

A.5. Title, reference and version of the baseline and monitoring methodology applied to the project activity:

The applied baseline and monitoring methodology for the project is:

- **AMS I.D:** Renewable energy projects (version 7: Sectorial Scope 01).
- **Category D:** Renewable electricity generation for a grid.
- **Reference:**

  http://cdm.unfccc.int/methodologies/DB/Q3VOK1HPBFTLSP7ZXFMY8R8Y4BEVJX

The project conforms with this because it is a hydropower plant that supplies electricity to a grid. The project installed capacity is 6.786 MW and will not increase its capacity beyond 15 MW, complying with the limits for small-scale activities every year over the 21-year crediting period.

A.6. Registration date of the project activity:

The project activity was registered on March 3rd, 2006.

A.7. Crediting period of the project activity and related information (start date and choice of crediting period):

As per registered PDD crediting period of the project is from April 1st 2003 to March 31st 2010 (reneweable). The start date of the crediting period is 01/04/2003. No changes to the start date of the crediting period have been proposed post registration for the project.

The current monitoring period runs from April 1st, 2006, through March 31st, 2010.

A.8. Name of responsible person(s)/entity(ies):

Name of persons/entities completing the monitoring report:

- Eng. Walter Delgado Angulo
  Project Coordinator
  Generation Projects Engineering Department

- Lic. Vera Quesada Ramírez
  Environmental Management Coordinator
  Environmental Management Department

- Lic. Gina Rojas Chacón
  Social Management Coordinator
  Generation Projects Engineering Department

- MA. Andrés Pérez Sáenz
  International Cooperation Program Coordinator
  Generation Projects Engineering Department

Above persons and entity are not Project Participants.

SECTION B. Implementation of the project activity

B.1. Implementation status of the project activity

The Cote Hydro Power Plant entered commercial operation on April 1st, 2003, after a two years construction period. The construction and implementation of the project occurred basically in accordance with the project design established in the Feasibility Stage and as mentioned in the registered PDD, as far as power capacity and energy generation is concerned. However, there were some minor changes in the design of the powerhouse facility due to a land slide occurred in the early stages of the construction of the Cote Powerhouse. Due to this situation, it became necessary to relocate the arrival of the penstock and do some works to stabilize the slope behind the powerhouse.

With respect to these works, the penstock was originally located above the slope in question, it was required to build a vertical shaft 3 meters in diameter and 40 meters in depth, as well as a 120 meters long tunnel to reach the powerhouse. A steel pipe was built within this underground excavation (a shielding that later was filled with concrete along the gap between the pipe and the excavation).

The powerhouse site, due to constructive needs, was slightly moved a few meters from its original position, but maintaining the structure and distribution unchanged, requiring an adjustment in the geometry of the discharge channel.

The slope stabilization works consisted in a tunnel 2.5 meters in diameter and 70 meters in length, used as a drainage gallery. In addition, it was necessary to restitute with concrete part of the slope, the placement of a riprap barrier and the construction of a ribbed structural screen anchored at the bottom.

In the upper part of the slope, a shotcrete treatment was applied along with anchorage bolts as a retaining wall for the main road located above the powerhouse area.

These entire works modified in some way the original designs of the Plant, but did not alter the installed hydro plant power capacity nor any of its technical specifications.

B.2. Revision of the monitoring plan

The monitoring plan of the project, as described in the registered CDM-PDD was not revised.

B.3. Request for deviation applied to this monitoring period

There is no deviation request proposed for the current monitoring period.

B.4. Notification or request of approval of changes

There is no request of approval of changes from the project activity as described in the registered CDM-PDD.

SECTION C. Description of the monitoring system

The monitoring methodology and plan for the project ("the MP") follows the methodology AMS-ID definition, which states that: "The monitoring shall consist of metering the electricity generated by the renewable energy technology".

The project's baseline calculation follows methodology AMS-ID baseline definition for a system where not all generators use exclusively fuel oil and/or diesel fuel.

ICE's electricity meter will be used to account for ERs and project's own meter will be used to double check accuracy of the project electricity generation registered by *ICE*'s meter. The calibration of this *ICE*'s meter follows standard procedures established for all of ICE's meters across the Costa Rican national territory. The calibration of the project own meter follows *CNFL* standard procedures, as well.

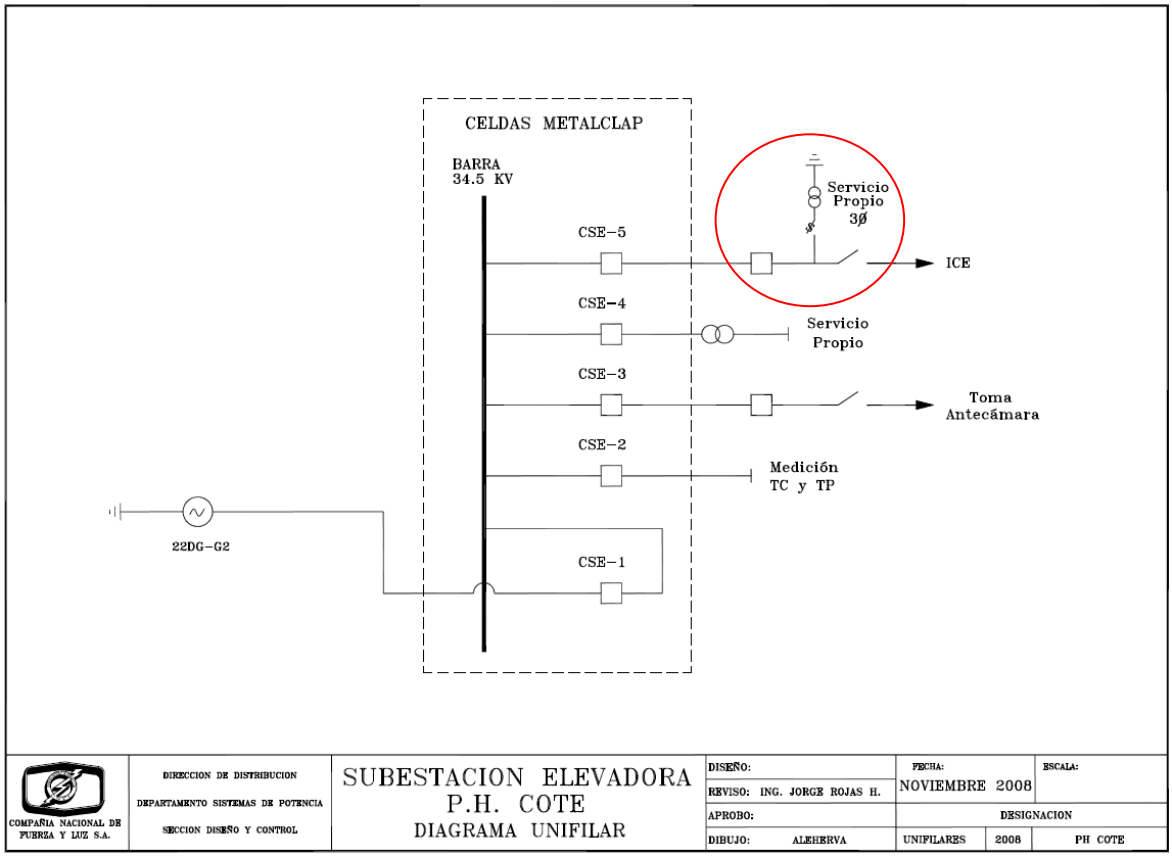
The project generation registered by *ICE*'s meter will be checked monthly against the project generation registered by the project's own meter in order to prevent failures in *ICE*'s meter – this procedure will be performed by the ERCP Manager as directed in the ERCP Quality Control Procedure36. If deviation is more than the usual deviation from one meter to another, the ERCP manager will inform *ICE* to repair its meter – after checking that the project's own meter is in good standing. If failure is confirmed by *ICE* then during the failure period, the project's own meter registered generation will be taken to account for ERs, until *ICE*'s meter is repaired. Evidence that *ICE*'s meter underwent repairance should be made available to the verifier (if this case happens).

Every month, the ERCP manager will receive the project's registered generation from two sources: ICE's meter and the project's own meter, and double check accuracy. The ERCP Manager should perform monthly calculation of accounted ERs to be ready for the verifier visit in any time of the year.

Responsibilities in the ERCP have been established in an ERCP Organizational Structure37, were a hierarchy is also established. The ERCP Quality Control Procedure38 establishes steps to be taken in order to minimize errors in the ERCP.

Metering location

The following diagram shows the meters located in the plant and are used to monitor the electricity generation and delivery to ICE:

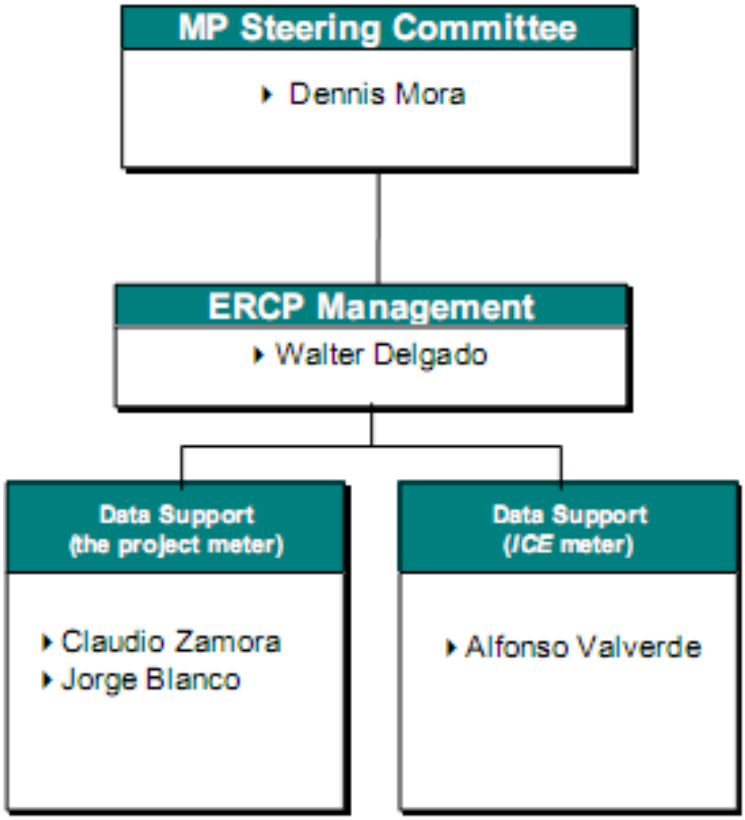


Organizational, Operational and Monitoring Obligations

A. Obligations of the Operator

Monitoring the project's performance in terms of ERs achievement requires the fulfillment of operational data collection and processing obligations from the operator. The operator has the primary obligation to calculate the project ERs based on the most recent available information, following the ERs Calculation Procedure ("ERCP") presented below and to abide to the ERCP Organizational Structure and the ERCP Quality Control Procedure presented in below.

ERCP Organizational Structure



Monitoring Plan (MP) – Emissions Reductions Calculation Procedure
ERCP Quality Control

	ICE Meter		The Project Meter
		• *Monthly recording* • *Check calibration of electricity meters, periodically* • *Make coordination with ICE to be able to implement this document* • *Only one person will be responsible for the ERCP: Mr. Walter Delgado*	
Data	• The project hourly generation that is registered by *ICE meter*		• The project hourly generation that is registered by the project meter
Quality of Data Collection	• Which data comes? All of the above • By what means does it come? By E-mail/ CD • How does it come? In Excel • How frequently does it come? Monthly • From whom does it come? From *ICE* meter • To whom does it comes? Mr. Walter Delgado		• Which data comes? All of the above • By what means does it come? By E-mail/ CD • How does it come? In Excel • How frequently does it come? Monthly • From who does it come? From the project meter • To whom does it comes? Mr. Walter Delgado
Quality of Data Processing	• Original Data • Organized Data • Entered Data • Processed Data • Result	• Monthly calculation involves 5 steps • All of it must be done in excel and documented with receipt of sales • Yearly consolidation of monthly calculation	• No processing needs to be made with this data, Except for when ICE meter fails.
Quality of Data Storage	• Prevent Excel versioning problem, by keeping "a new" Excel software package every year in PCs used for the ERs calculations • Keep all data for 2 years after the first crediting period (9 years) – assign a password to excel spreadsheets used for the ERCP • Save the document with the last date in which an alteration was made, so that old versions are kept in disk • Keep all written documentation in a folder that will be provided to the verifier together with the data in excel collected		
Quality of Data Delivery	• Provide to the Verifier e-mails /CD through which Data Providers delivered the original data • Provide to the Verifier all calculations made (all steps of Data Processing) by showing all preliminary versions of spreadsheets saved in disk • Double check if deviation from both meters is unusual and inform ICE to repair/recalibrate its meter – after the project own meter has been confirmed/checked to be in good conditions.		

The ERCP Organizational Structure aims at showing that the ERCP Manager will be responsible for performing the ERCP (monthly), and the MP Steering Committee will be responsible for supervising the ERCP Manager monitoring work (monthly). The ERCP Manager will report to the MP Steering Committee (monthly); and both the ERCP Manager and MP Steering Committee co-ordinately will report to the verifier (when the verification takes place), allowing for a successful verification of the project's accounted ERs.

The ERCP Quality Control aims at providing guidance on how to handle monitoring data as to ensure that sufficient and accurate information is made available to the verifier, allowing for a successful verification of accounted ERs. It is responsibility of the operator to enter into agreements with both sorts of data sources (*NIS*) to ensure that data is made available monthly to the ERCP Manager. To avoid conflict of interests, all data required for the MP will come from *ICE* through e-mail or CD.

It is believed that the MP approach presented here will result in an accurate, yet conservative calculation of ERs. However some uncertainties may lead to a deviation between monitored and verified ERs, especially errors in the data monitoring and processing system. The operator

is expected to prevent such errors and the verification audits are expected to uncover any possible errors. The Certified Emissions Reductions ("CERs") would be granted post-verification.

Monthly Data Collection – parties involved and monitoring responsibilities

I. ICE – (DATA PROVIDER)	- Shall provide the operator with written proof of the project's monthly generation registered by ICE's meter (through e-mail) Frequency: Monthly
II. THE OPERATOR (DATA PROCESSOR)	- Shall keep receipt of sales. - Shall perform monthly calculation of ERs following the ERCP. - Shall perform the annual report of ERs achieved to the verifier. - Shall establish the necessary agreements with *ICE* to assure that ICE provides (monthly) the project's hourly generation registered by its meter .

Emissions Reductions Calculation Procedure and Required Spreadsheets

The ERCP is the basic instrument for gathering, recording and processing information that will result in the measured ERs. The operator shall consider the project's ERCP as a manual. The ERCP should contain: i) data gathered from *ICE* meter, and ii) data processed by the operator. All data processing should be done in Excel. The ERCP is designed for monthly and yearly calculation, based on final monthly ICE *meter* reports. Filling data monthly in the required spreadsheets will provide time to review formulas, minimize errors and have data readily available for the verifier in any period of the year. There will be in only 1 spreadsheet to be reviewed by the verifier. The file is named Cote ERs at "yearly period in question".xls**.** However, as the verifier could require preliminary calculations, The ERCP responsible ("ERCP manager") should keep the name of the file and follow by the date at which the latest adjustment is made, every time he works on the file. This will allow saving old versions on disk and keeping them as a record to show to the verifier, if required.

When the ERs calculation for the month is completed, the file should be named Cote ERs at "month in question".xls, to allow differentiating scratch versions from the final monthly calculation. Likewise, after the calculation of the ERs of the last month of the year, the file should change its name to Cote ERs at "yearly period in question".xls.

The year for the MP will run from April 1st to March 31st. This monthly-filled file will be composed by 2 worksheets:

-Worksheet # 1: Original Data from ICE -(ICE's meter)

-Worksheet # 2: Organized Data, Processed Data and Result

1. Worksheet #1: Should contain data as it was handed in, by *ICE*, through email or CD, regardless of how it comes i.e. arranged in hours or every 15 minutes or the final monthly project's generation figure. The ERCP manager should not manipulate this data other than copy and paste it from the file it was handed in. The e-mail/CD through which data comes from provider should be kept as proof for the verifier.

2. Worksheet # 2: The ERCP manager should put in one column, the hourly generation or quarter of-hour generation of the month of the project and sum it up to obtain the monthly project generation. In this same Worksheet, the ERCP manager should calculate monthly ERs (measured in tCO_2) by multiplying the generation in KWh (or MWh) times 0.3204212 in $KgCO_2/KWh$ (or tCO_2/MWh), which is the baseline emission factor for the project and will be used for the second crediting period (7 years). No rounding needs to be made per month when calculating monthly ERs -as this is only done to measure progress. However, resulting yearly ERs must be rounded down to the nearest integer. At the end of the year[10], the ERCP manager should sum the resulting yearly ERs of the project to obtain the yearly project' ERs ready for verification. Once the yearly ERs calculation is completed in the Cote ERs at March.xls, this file should become Cote ERs at "yearly period in question".xls. Worksheet # 2 also allows the ERCP manager to calculate the cumulative generation and cumulative ERs along the year and be aware of the project's environmental benefits progresses regarding ERs.

Worksheet # 2 also allows the ERCP manager to calculate the cumulative generation and cumulative ERs along the year and be aware of the project's environmental benefits progresses regarding ERs.

SECTION D. Data and parameters

D.1. Data and parameters determined at registration and not monitored during the monitoring period, including default values and factors	
Data / Parameter:	CM
Data unit:	$kgCO_2e/kWh$
Description:	Combined margin emission factor
Source of data used:	
Value(s) :	0.48835 $kgCO_2e/kWh$

[10] For MP purposes: March 31st

Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Baseline emission calculations
Additional comment:	The baseline emission factor was determined *ex ante* and will be used throughout the first crediting period.

D.2. Data and parameters monitored	
Data / Parameter:	EGy
Data unit:	MWh
Description:	Net electricity supplied to the grid by the project
Measured /Calculated /Default:	Measured
Source of data:	ICE's electricity meter readings
Value(s) of monitored parameter:	52,252.559 MWh (for whole monitoring period. Please refer to Section E.1 for each year data)
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Baseline emission calculation
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	ICE'S METER • Type: FM10A ELSTER A3KLNQ-X • Serial No.: SCH ST – Q200 No.859258 • Accuracy class: 0.2 • Date of last calibration: March 5th, 2010. PROJECT METER'S OWN METER • Type: ION 8500 • Serial No.:AQ-306A048-03 • Accuracy class: 0.2 • Calibration frequency: Once a year if needed. • Date of last calibration: September 26th, 2008
Measuring/ Reading/ Recording frequency:	The electricity will be continuously measured and monthly recorded. Data will be archived for 2 years following the end of the last crediting period by means of electronic and paper backup.
Calculation method (if applicable):	Not applicable.
QA/QC procedures applied:	*ICE's* electricity meter will be used to account for ERs and project's own meter will be used to double check accuracy of the project electricity generation registered by *ICE*'s meter. The

	calibration of this *ICE*'s meter follows standard procedures established for all of ICE's meters across the Costa Rican national territory. The calibration of the project own meter follows *CNFL* standard procedures, as well. The project generation registered by *ICE*'s meter will be checked monthly against the project generation registered by the project's own meter in order to prevent failures in *ICE*'s meter – this procedure will be performed by the ERCP Manager as directed in the ERCP Quality Control Procedure. If deviation is more than the usual deviation from one meter to another, the ERCP manager will inform *ICE* to repair its meter – after checking that the project's own meter is in good standing. If failure is confirmed by *ICE* then during the failure period, the project's own meter registered generation will be taken to account for ERs, until *ICE*'s meter is repaired. Evidence that *ICE*'s meter underwent repairance should be made available to the verifier (if this case happens). Every month, the ERCP manager will receive the project's registered generation from two sources: ICE's meter and the project's own meter, and double check accuracy. The ERCP Manager should perform monthly calculation of accounted ERs to be ready for the verifier visit in any time of the year.

SECTION E. Emission reductions calculation

E.1. Baseline emissions calculation

The baseline emission factor is calculated *ex ante* as a Combined Margin (CM), consisting of the as the weighted average of Operating Margin (OM) emission factor and Build Margin (BM) emission factors where the weights of 50% for each emission factor (wOM = wBM = 0.5) as described in the registered PDD.

The CM was calculated as the simple average of both the resulting OM and the resulting BM. All margins expressed in $KgCO_2/KWh$. The formula used for the CM was:

CM = 0.5 x OM + 0.5 x BM

CM = O.5 x (0,96917) + 0.5 x (0,00753) = 0.48835 $KgCO_2/KWh$

The baseline emission factor, calculated *ex ante*, for the project activity is 0.48835 $kgCO_2/kWh$ and will remain throughout the first crediting period of the project activity.

According to the approved methodology used, the baseline emissions are calculated by multiplying the net electricity supplied by the project to the grid with the grid emission factor calculated as above.

MONITORING PERIOD		ELECTRICITY SUPPLIED TO THE GRID (MWH)	ELECTRICITY IMPORTED FROM THE GRID (MWH)	NET ELECTRICITY SUPPLIED TO THE GRID (MWH)
From	**To**	**Monitoring result after being doubled checked with sale receipts.**		
April 1st, 2006	April 30th, 2006	305.868	8.995	296.873
May 1st, 2006	May 31st, 2006	237.234	9.278	227.956
June 1st, 2006	June 30th, 2006	917.931	8.123	909.808
July 1st, 2006	July 31st, 2006	2,188.063	6.370	2,181.693
August 1st, 2006	August 31st, 2006	1,339.712	8.123	1,331.589
September 1st, 2006	September 30th, 2006	837.931	8.547	823.384
October 1st, 2006	October 31st, 2006	830.627	9.047	821.580
November 1st, 2006	November 30st, 2006	750.232	9.138	741.094
December 1st, 2006	December 31st, 2006	1,109.161	7.808	1,101.353
January 1st, 2007	January 31st, 2007	1,166.791	8.911	1,157.880
February 1st, 2007	February 29th, 2007	795.921	8.508	787.413
March 1st, 2007	March 31st, 2007	519.421	9.558	509.863
TOTAL		**10,998.892**	**102.406**	**10,896.486**

MONITORING PERIOD		ELECTRICITY SUPPLIED TO THE GRID (MWH)	ELECTRICITY IMPORTED FROM THE GRID (MWH)	NET ELECTRICITY SUPPLIED TO THE GRID (MWH)
From	**To**	**Monitoring result after being doubled checked with sale receipts.**		
April 1st, 2007	April 30th, 2007	340.722	9.548	331.174
May 1st, 2007	May 31st, 2007	679.336	9.198	670.138
June 1st, 2007	June 30th, 2007	784.340	8.718	775.622
July 1st, 2007	July 31st, 2007	1,523.403	7.347	1,516.056
August 1st, 2007	August 31st, 2007	1,318.905	7.571	1,311.334
September 1st, 2007	September 30th, 2007	1,944.411	6.528	1,937.883
October 1st, 2007	October 31st, 2007	1,443.547	7.556	1,435.991
November 1st, 2007	November 30st, 2007	1,372.025	7.630	1,364.395
December 1st, 2007	December 31st, 2007	2,421.003	6.181	2,414.822
January 1st, 2008	January 31st, 2008	1,530.739	7.203	1,523.536
February 1st, 2008	February 28th, 2008	718.585	8.274	710.311
March 1st, 2008	March 31st, 2008	171.133	9.754	161.379
TOTAL		**14,248.149**	**95.508**	**14,152.641**

MONITORING PERIOD		ELECTRICITY SUPPLIED TO THE GRID (MWH)	ELECTRICITY IMPORTED FROM THE GRID (MWH)	NET ELECTRICITY SUPPLIED TO THE GRID (MWH)
From	**To**	**Monitoring result after being doubled checked with sale receipts.**		
April 1st, 2008	April 30th, 2008	301.906	9.037	292.869
May 1st, 2008	May 31st, 2008	253.372	9.065	244.307
June 1st, 2008	June 30th, 2008	912.282	7.438	904.844
July 1st, 2008	July 31st, 2008	1,892.117	5.964	1,886.153
August 1st, 2008	August 31st, 2008	1,228.168	6.828	1,221.340
September 1st, 2008	September 30th, 2008	920.361	6.919	913.442
October 1st, 2008	October 31st, 2008	1,904.217	6.419	1,897.798
November 1st, 2008	November 30st, 2008	1,399.748	6.555	1,393.193
December 1st, 2008	December 31st, 2008	2,812.786	4.666	2,808.120
January 1st, 2009	January 31st, 2009	1,041.289	8.719	1,032.570
February 1st, 2009	February 28th, 2009	1,544.158	5.926	1,538.232
March 1st, 2009	March 31st, 2009	1,466.185	6.227	1,459.958
TOTAL		**15,676.589**	**83.763**	**15,592.826**

MONITORING PERIOD		ELECTRICITY SUPPLIED TO THE GRID (MWH)	ELECTRICITY IMPORTED FROM THE GRID (MWH)	NET ELECTRICITY SUPPLIED TO THE GRID (MWH)
From	To	Monitoring result after being doubled checked with sale receipts.		
April 1st, 2009	April 30th, 2009	499.181	6.857	492.324
May 1st, 2009	May 31st, 2009	565.856	7.532	558.324
June 1st, 2009	June 30th, 2009	588.903	7.185	581.718
July 1st, 2009	July 31st, 2009	1,178.139	6.548	1,171.591
August 1st, 2009	August 31st, 2009	1,477.294	6.275	1,471.019
September 1st, 2009	September 30th, 2009	860.139	6.678	853.461
October 1st, 2009	October 31st, 2009	936.712	6.930	929.782
November 1st, 2009	November 30st, 2009	1,710.167	5.651	1,704.516
December 1st, 2009	December 31st, 2009	1,138.291	6.916	1,131.375
January 1st, 2010	January 31st, 2010	1,590.113	6.156	1,583.957
February 1st, 2010	February 28th, 2010	470.635	7.123	463.512
March 1st, 2010	March 31st, 2010	669.582	0.555	669.027
TOTAL		**11,685.012**	**73.851**	**11,610.606**

Baseline emissions = 52,252.559 x 0.48835 tCO_2/MWh = 25,517.54 $tCO_2 \cong$ 25,517 tCO_2

E.2. Project emissions calculation

According to the approved methodology used for the project (AMS I.D Ver 7, no Project Emissions is to be counted by the Project.

E.3. Leakage calculation

Because the project's existing equipment is neither transferred to another activity nor it comes from another activity, leakage is zero and does not need to be monitored.

E.4. Emission reductions calculation / table

The calculated emissions reductions for the second Verification Period (from April 1st, 2006 to March 31st, 2010) using the *ex ante* emission factor according to the process described in the PDD (pages 16 through 21) are as given below.

COTE HYDROELECTRIC PROJECT CALCULATION OF EMISSIONS REDUCTION FIRST CREDITIG PERIOD: APRIL 1ST, 2003 – MARCH 31ST, 2006			
PERIOD	**ANNUAL VALIDATED GENERATION MWh**	**EMISSION FACTOR TOC CO_2/MWh**	**EMISSIONS REDUCTIONS TON CO_2**
April 1st, 2006 – March 31st, 2007	**10,896.486**	**0.48835**	**5,321.298**
April 1st, 2007 – March 31st, 2008	**14,152.641**	**0.48835**	**6,911.442**
April 1st, 2008 – March 31st, 2009	**15,592.826**	**0.48835**	**7,614.756**
April 1st, 2009 – March 31st, 2010	**11,610.606**	**0.48835**	**5,670.039**
TOTAL	**52,252.559**	**- - -**	**25,517.54**

From April 1st, 2006, to March 31st, 2010, the Cote Hydroelectric Plant has reduced 25,517 tones of CO_2 by using renewable resources for the generation of electrical energy.

Total baseline emissions: 25,517 tCO_2
Total project emissions: 0 tCO_2
Total leakage: 0 tCO_2
Total emissions reductions: 25,517 tCO_2

E.5. Comparison of actual emission reductions with estimates in the CDM-PDD

PERIOD	REGISTERED PDD		ACTUAL VALUES	
	MWH	TCO_2	MWH	TCO_2
April 1st, 2006 – March 31st, 2007	13,169	6,431	10,896.486	5,321.298
April 1st, 2007 – March 31st, 2008	13,169	6,431	14,152.641	6,911.442
April 1st, 2008 – March 31st, 2009	13,169	6,431	15,592.826	7,614.756
April 1st, 2009 – March 31st, 2010	13,169	6,431	11,610.606	5,670.039

Item	Values applied in ex-ante calculation of the registered CDM-PDD	Actual values reached during the monitoring period
Emission reductions (tCO_2e)	25,724	25,517

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

The actual emission reductions are less than the emission reductions projected in the registered PDD for all four years together. However, the emission reductions are slightly higher during 2007-08 and 2008-08 but are less than 10% of what was projected in the registered PDD. The variation is mainly due to varying levels of water availability.