EcoSecurities International Ltd.

CDM Monitoring Report

Incomex Hydroelectric Project

Project CDM ID: 0968

Project registration date: April, 27th 2007

Crediting period renewal: October, 23rd 2009

Monitoring period: 01/02/2008 - 30/09/2009

Date monitoring report and version nr. 03/11/2009 V1

1. Project background

Incomex Hydroelectric Project has been registered as CDM project by the UNFCCC on April, 27th 2007 under reference 0968. Its crediting period has been renewed on October 23rd 2009.

Further background on this project can be found in the PDD and associated documents, which are available on the UNFCCC website: http://cdm.unfccc.int/Projects/DB/DNV-CUK1172478016.18/view.

Parties involved are Brazil (Host Country) and the United Kingdom of Great Britain and Northern Ireland, and Switzerland (Annex 1 Parties). The Project Participants are Incomex – Indústria, Comércio e Exportação Ltda, Grupo Cassol Energia (Project Developer and Operator), EcoSecurities Ltd and EcoSecurities Group plc (CO2 Advisor).

2. Project implementation in relation to registered PDD

The project is implemented and operated as per registered PDD.

2.1. Implementation status

The project activity comprises three small run-of-river hydroelectric plants with a total installed capacity of 14.5 MW. These are: SHP Rio Branco (6.9 MW), located in Alta Floresta d'Oeste municipality (Rondônia state); SHP Monte Belo (4.8 MW), located in Alta Floresta d'Oeste municipality (Rondônia state); and SHP Cabixi II (2.8 MW), located in Comodoro municipality (Mato Grosso state). All plants are located in remote regions in the north and mid-west regions of Brazil, and supply electricity to the Rondônia-Acre isolated grid.

The Project improves the supply of electricity with clean, renewable hydroelectric power while contributing to the regional/local economic development.

2.2. Operation of the project

SHP Monte Belo commenced operation in February 2001. SHP Cabixi II commenced operation in August 2002. SHP Rio Branco commenced operation in February 2005. "Operational" in this context includes downtime due to maintenance or technical issues.

2.3. Forecasted emission reductions versus actual emission reductions

The annual average over the crediting period of estimated reductions in the PDD is 85,788 tCO_2 per year. Based on the PDD, the total forecasted value for this monitoring

period is 140,273 tCO2e[1]. The actual emission reductions over the monitoring period (608 days) were 141,102 tCO_2e.

The emission reductions over the monitoring period are slightly higher than forecasted in the PDD. This slight increase (0.59%) is a consequence of the inclusion of the rainy season (February 2008 to May 2008 and December 2009 to May 2009) in the monitoring period. It is noted that the estimated value in the PDD was determined using a year average figure which did not consider the seasonality of the weather in the project's location.

3. Compliance of the monitoring plan with the monitoring methodology

This project has been registered under the methodology AMS-I.D version 13. The project has not sought revision or deviation to the monitoring plan in the previous monitoring period. The validated monitoring plan is therefore in accordance with the approved methodology applied to the CDM project activity.

4. Compliance of monitoring with the monitoring plan

Monitoring has been carried out in accordance with the monitoring plan contained in the registered PDD.

4.1. Monitoring period

The monitoring period covers 01/02/2008 00:00 to 30/10/2009 24:00. The starting date is later than the registration date [27/04/2007] and the last day of the last monitoring period [31/01/2008]. The ending date is before the end of the crediting period [31/01/2015].

4.2. Monitoring parameters

Data/parameter:	EG_y
Data unit:	MWh
Description:	Net electricity delivered to the grid
Source of data used:	Project developer and Energy buyer (CERON) monitoring system
Value for this monitoring period:	140,127.60
Description of measurement methods and	The electricity generation was measured by a cumulative meter (located on each site) and recorded monthly. These meters are owned

[1] The grid emission factor is different for two periods in the monitored period, see Annex I for more information

procedures applied:	by CERON (grid operator). The readings are used as the amount that is invoiced.
QA/QC procedures applied:	The accuracy of the meters is assured by the grid operator (i.e. CERON), as the meters were installed by them and remain their property.
Comments:	Data will be archived at least for two years after crediting period or the last issuance of CERs, whichever occurs later.

Data/parameter:	**$EF_{grid,CM,y}$**
Data unit:	tCO_2/MWh
Description:	Baseline Emission Factor
Source of data used:	Calculated ex post as the average of $EF_{grid,OM,y}$ (determined ex post) and $EF_{grid,BM,y}$ (determined ex ante)

Value for this monitoring period:

Grid Name	Period	Value (tCO_2/MWh)
Rondônia-Acre	01/02/2008 30/04/2008	1.0388
Cone Sul	01/02/2008 30/04/2008	0.1667
Rondônia-Acre	01/05/2008 30/09/2009	1.0213

Description of measurement methods and procedures applied:	The Baseline Emission Factor calculation consists of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the "Tool to calculate the emission factor for an electricity system" and AMS-I.D.
QA/QC procedures applied:	Not applicable, as this data is calculated based on OM and BM.
Comments:	

Data/parameter:	**$EF_{grid,OMsimple,y}$**
Data unit:	tCO_2/MWh
Description:	Operating Margin Emission Factor
Source of data used:	Calculated ex post from $EG_{m,y}$, $FC_{i,m,y}$, $EF_{CO2,i,y}$ and $NCV_{i,y}$

Value for this monitoring period:

Grid Name	Period	Value (tCO_2/MWh)
Rondônia-Acre	01/02/2008 30/04/2008	0.9441
Cone Sul	01/02/2008 30/04/2008	0.5870
Rondônia-Acre	01/05/2008 30/09/2009	0.9415

Description of measurement methods and procedures applied:	The Operating Margin Factor calculation was performed according to option (a) of the "Tool to calculate the emission factor for an electricity system". Data are acquired by governmental companies that control the electricity grid.
QA/QC procedures applied:	The governmental companies responsible for the collection of data are also responsible for guaranteeing the quality of data. The calculation will be verified by the DOE, or another competent party, in order to assure and guarantee quality.
Comments:	This data was calculated ex-post using the most recent year of data available. For Brazilian isolated electricity grids, the governmental companies responsible for the data are difficult to reach and data is not regularly published. If at any time of the crediting period, the grid configuration changes, the OM will be calculated for the electric system that best represents the Project baseline.

4.3. Management and operational system

The responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan on page 29-30 of the PDD.

4.4. Quality assurance and quality control

The accuracy of the monitoring results are in conformity with calibration requirements, recording frequency and quality assurance and quality control procedures stated in the monitoring plan.

4.4.1. Calibration of monitoring equipment

The site uses power meters for the measurement of exported electricity to the grid. All meters used for the calculation of emission reductions were duly calibrated by accredited agencies. As the isolated grids in Brazil do not have any required periodicity for calibration of meters, the guidance provided in the "Indicative Simplified Baseline and Monitoring Methodologies for Selected Small-Scale CDM Project Activity Categories", v12.1, para 12(c) applies.

4.4.1.1. SHP Monte Belo

Meter	Nr	Certificate Number	Certificate Date
Alpha A1RAL	4852954	CCR 225/07	04/05/2007
Alpha A1RAL	4852954	015/2009	14/07/2009
Alpha A3RBR*	HCJ09600321	-	-

4.4.1.2. SHP Rio Branco

Meter	Nr	Certificate Number	Certificate Date
Alpha A2RL	14829	CCR 226/07	04/05/2007
ELO 2113	HFB05500509	E0652/2007	25/09/2005[2]
ELO 2113	HFB05500509	016/2009	13/07/2009
Alpha A3RBR*	HCJ09400322	-	-

4.4.1.3. SHP Cabixi II

Meter	Nr	Certificate Number	Certificate Date
Alpha A1R[3]	231000090	52600.042740/2009	09/09/2009
Alpha A3RBR*	HCJ09700309	-	-

* As these three meters are new, they have only the initial calibration available onsite.

[2] Meter calibrated in 2005, but was kept with the manufacturer without being installed until 2007, when it was sold to CERON and installed in the plant. Therefore, the certificate was issued in 2007 (as can be seen under "certification number"). As the meter was not installed, it did not lose its calibration.

[3] The meter is currently under calibration process. The number and date are therefore related to the calibration process protocol.

4.4.2. *Monitoring frequency*

The parameters to be monitored were read with the frequency indicated in section 4.2 of this document. This corresponds with the requirements from the approved methodology and the validated monitoring plan.

4.4.3. *Monitoring system*

Monitoring organisation

A monitoring organization has been set up. This involved setting up an organization and the development of procedures for

a) CDM staff training

b) CDM data and record keeping arrangements

c) Data collection

d) CDM data quality control and quality assurance

e) Equipment maintenance

f) Equipment calibration

g) Equipment failure

CDM staff training has taken place and this can be proven by training records which are available on site. Procedures for data collection, archiving, data quality assurance and quality control, and equipment maintenance, failure and calibration were agreed between the project developer and the carbon advisor. All monitoring procedures and data acquired were checked by the carbon advisor.

Monitoring equipment and installation

The meters were installed by qualified technicians and the proper functioning thereof has been proven during calibration [see section 4.4.1 above].

During the monitoring period no failure of meters occurred. Failure is proven when zero readings occur when project activities take place or when cross checks show deviations from expected values. Meter failures are registered in the log book.

Data records and management

Data records are filed electronically each month and kept for 2 years until the end of the crediting period. The monthly monitoring data are sent to the carbon advisor for analysis and back-up of data.

Internal audits

The implementation of the monitoring as described in the PDD is checked regularly by EcoSecurities during field visits and/or the consistency and plausibility of the data which are processed each month.

4.4.4. *Forward Action Requests*

No forward action requests remain from previous verifications.

5. Calculation of emission reductions

Calculation of emission reductions took place on the basis of a complete set of cross checked data, applying the approved methodology. Calculations are summarized in Annex A.

5.1. Data completeness

All data were monitored according to the frequency indicated in the validated monitoring plan. A complete set of data was used in the calculation of emission reductions.

5.2. Cross checks of monitoring data

Events like meter failure or shut down of the project activity, if occurred, are registered in the log book. The data acquired for CDM are regularly checked by the carbon advisor. The grid operator (i.e. CERON) constantly checks the data for payment purposes. The data is also compared to the contracted electricity amount and significant deviations are formally reported to CERON. Moreover, a technician from the grid operator accompanies the data reporting and signs off the report where the data used in the invoice are sent to the grid operator.

5.3. Calculation of emission reductions

Emission reductions have been calculated on the basis of the formulas provided by the validated PDD and the approved methodology. The calculations are shown in Annex A of this document.

5.4. Assumptions in emission calculations

No assumptions were required when calculating the emission reductions over the monitoring period.

5.5. Application of emission factors, IPCC default values and other reference values

The emission factor used in the calculation of the emission reductions is the combined margin grid emission factor. The calculation and proposed monitoring of the emission factor is described in the PDD and validated. No IPCC default values or other reference values were required in the calculation of emission reductions of this project. For the emission factor calculation, the vintage of 2005 were used as there is no accessible newer data. The grid operator (i.e. CERON) did not make the data available. This fact was foreseen in the PDD (page 29) and equally described in section 4.1 of this monitoring report.

6. Summary

The CDM project activity Incomex Hydroelectric Project, CDM reference 0968 has reduced 141,102 **tCO2eq** in the period 01/02/2008 00:00 to 30/10/2009 24:00. The emission reduction has been calculated as set out in the validated PDD and the approved methodology. The project activity is implemented as set out in the validated PDD. The validated monitoring plan is in accordance with the approved methodology. Monitoring has been carried out as per validated monitoring plan.

ANNEX A

Monitored Data: 1 February 2008 to 31 December 2008

Data	*Units*	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Total**
Net electricity generated (CABIXI II)	MWh	1,596.91	541.00	699.62	1,371.85	992.34	806.66	689.04	624.25	644.74	681.58	1,100.20	9,748.19
Applicable EF	tCO2e/MWh	0.1667	0.1667	0.1667	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	-
Emission Reductions for the period	tCO2e	266.20	90.18	116.63	1,401.07	1,013.48	823.84	703.72	637.55	658.47	696.10	1,123.63	7,530.87
Net electricity generated (MONTE BELO)	MWh	2,961.00	3,015.00	3,132.00	3,222.00	2,448.00	1,710.00	1,629.00	1,548.00	1,899.00	2,547.00	2,781.00	26,892.00
Applicable EF	tCO2e/MWh	1.0388	1.0388	1.0388	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	-
Emission Reductions for the period	tCO2e	3,075.89	3,131.98	3,253.52	3,290.63	2,500.14	1,746.42	1,663.70	1,580.97	1,939.45	2,601.25	2,840.24	27,624.19
Net electricity generated (RIO BRANCO)	MWh	4,746.00	5,103.00	4,788.00	4,417.00	2,989.00	1,680.00	1,449.00	1,148.00	1,603.00	2,604.00	4,424.00	34,951.00
Applicable EF	tCO2e/MWh	1.0388	1.0388	1.0388	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	-
Emission Reductions for the period	tCO2e	4,930.14	5,301.00	4,973.77	4,511.08	3,052.67	1,715.78	1,479.86	1,172.45	1,637.14	2,659.47	4,518.23	35,951.60
Total	**MWh**	9,303.91	8,659.00	8,619.62	9,010.85	6,429.34	4,196.66	3,767.04	3,320.25	4,146.74	5,832.58	8,305.20	**71,591.19**
	tCO2e	8,272.24	8,523.16	8,343.92	9,202.78	6,566.28	4,286.05	3,847.28	3,390.97	4,235.07	5,956.81	8,482.10	**71,106.67**

Monitored Data: 1 January 2009 to 30 September 2009

Data	*Units*	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	**Total**
Net electricity generated (CABIXI II)	MWh	976.45	1,224.16	1,327.34	1,546.79	1,298.29	928.22	765.71	636.92	568.53	9,272.41
Applicable EF	tCO2e/MWh	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	-
Emission Reductions for the period	tCO2e	997.25	1,250.23	1,355.61	1,579.74	1,325.94	947.99	782.02	650.49	580.64	9,469.91
Net electricity generated (MONTE BELO)	MWh	3,087.00	2,799.00	3,087.00	3,015.00	3,123.00	3,023.00	2,537.00	2,365.00	1,917.00	24,953.00
Applicable EF	tCO2e/MWh	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	-
Emission Reductions for the period	tCO2e	3,152.75	2,858.62	3,152.75	3,079.22	3,189.52	3,087.39	2,591.04	2,415.37	1,957.83	25,484.50
Net electricity generated (RIO BRANCO)	MWh	4,585.00	4,228.00	5,138.00	5,068.00	5,117.00	3,708.00	2,673.00	2,108.00	1,686.00	34,311.00
Applicable EF	tCO2e/MWh	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	1.0213	-
Emission Reductions for the period	tCO2e	4,682.66	4,318.06	5,247.44	5,175.95	5,225.99	3,786.98	2,729.93	2,152.90	1,721.91	35,041.82
Total	**MWh**	8,648.45	8,251.16	9,552.34	9,629.79	9,538.29	7,659.22	5,975.71	5,109.92	4,171.53	**68,536.41**
	tCO2e	8,832.66	8,426.91	9,755.80	9,834.90	9,741.46	7,822.36	6,102.99	5,218.76	4,260.38	**69,996.24**

Total Monitored Data for Monitoring Period (1February 2008 to 30 September 2009)

Data	*Units*	**Monitoring Period Total**
Net electricity generated (CABIXI II)	MWh	**19,020.60**
Emission Reductions for the period	tCO2e	**17,000.79**
Net electricity generated (MONTE BELO)	MWh	**51,845.00**
Emission Reductions for the period	tCO2e	**53,108.69**
Net electricity generated (RIO BRANCO)	MWh	**69,262.00**
Emission Reductions for the period	tCO2e	**70,993.43**
Total	MWh	**140,127.60**
	tCO2e	**141,102.90**