CLEAN DEVELOPMENT MECHANISM
PROJECT DESIGN DOCUMENT FORM (CDM-PDD)
Version 03 - in effect as of: 28 July 2006

CONTENTS

SECTION A. General description of project activity

A.1. Title of the project activity:

Queluz and Lavrinhas Renewable Energy Project
Version 03
28 September 2009

A.2. Description of the project activity:

The "Queluz and Lavrinhas Renewable Energy Project" project activity is developed by Alusa Group and WZarzur Group. The first one is a Brazilian engineering group founded in 1940 and specialized in energy and telecommunication sectors. And the other one is a Brazilian engineering group as well, founded in 1948 and specialized in the sector of comercial, residencial and energetic constructions.

The Alusa group is committed to the local social and environmental problems, supporting several child education institutions, encouraging culture and digital inclusion as well as promoting the access to energy in poor regions. More information is available at the website: www.alusa.com.br and www.wzarzur.com.br.

The project activity consists in the construction of two new small hydroelectric plants (SHP) connected to the Interconnected National System grid. The total installed capacity is 60MW and it is expected the generation of up to 374,928 MWh each year. Both plants are located at the same river, reducing the environmental impacts and exploiting the most from the river's potential.

The Queluz and Lavrinhas SHPs are run-of-river plants, both of them don't have flooded areas and therefore do not contribute to GHG emissions. The installed capacity is 30MW for each one and both are located at Paraíba do Sul River. The project will deliver renewable energy to the national grid, displacing fossil fuel consumption from fossil fuel thermal plants that would be running in the absence of the project activity. The expected date to start the operations of Queluz SHP is 30/10/2009 and Lavrinhas SHP is 15/01/2010.

The project activity helps Brazil to fulfil its goals by promoting sustainable development, specially in two small towns as Queluz and Lavrinhas with an estimated population of 11,000 and 7,000 habitants, respectively. The main impacts are:

- Increasing employment opportunities in the area where the project is located, either for the implementation work or for the operation of the new facilities;
- Using clean, renewable and efficient technologies; and
- Increasing the offer of renewable energy in a developing country.

A.3. Project participants:

Table 1 – project participants

Name of party involved (*) ((host) indicates a host party)	Private and/or public entity(ies) Project participants (*) (as applicable)	Kindly indicate if the party involved wishes to be considered as project participant (Yes/No)
Brazil (host)	Usina Paulista Queluz de Energia S.A.	No
	Usina Paulista Lavrinhas de Energia S.A	No
	AMBIO Participações Ltda.	No

(*) In accordance with the CDM modalities and procedures, at the time of making the CDM-PDD public at the stage of validation, a Party involved may or may not have provided its approval. At the time requesting registration, the approval by the Party(ies) involved is required.

A.4. Technical description of the project activity:

A.4.1. Location of the project activity:

A.4.1.1. Host Party(ies):

Brazil

A.4.1.2. Region/State/Province etc.:

Queluz and Lavrinhas SHPs are both located in the Southeast region, State of São Paulo.

A.4.1.3. City/Town/Community etc.:

Queluz, municipality of Queluz.
Lavrinhas, municipality of Lavrinhas.

A.4.1.4. Details of physical location, including information allowing the unique identification of this project activity:

Located at the Paraíba do Sul River, São Paulo - Brazil

Geographical coordinates:
Queluz SHP - 22º33'S and 44º48'W
Lavrinhas SHP - 22º34'S and 44º52'W

A.4.2. Category(ies) of project activity:

The category applicable for this project according to Annex A of the Kyoto Protocol is the Sectoral **Scope 1 - Energy industries** (renewable - / non-renewable sources) and category "Renewable electricity generation for a grid".

A.4.3. Technology to be employed by the project activity:

Queluz and Lavrinhas Small Hydroelectric Plants (SHP) have total installed capacity of 60MW (30MW each) and the technology/ equipments descriptions are detailed below:

Table 2 - Technical turbines description		
	Queluz SHP	**Lavrinhas SHP**
Installed Capacity (MW)	2x15.0	2x15.0
Type	Kaplan	Kaplan
Rotation (rpm)	600	600
Efficiency (%)	98	98

Turbines Kaplan are better used in high-flow and low-head conditions for power production.

Table 3 - Technical generators description		
	Queluz SHP	**Lavrinhas SHP**
Type	Alstom	Alstom
Quantity	2	2
Frequency (Hz)	60	60
Nominal tension (kV)	6.9	6.9
Installed Capacity (MW)	15.0	15.0
Power Factor (%)	95	95

Run-of-river projects are defined as "the projects where the river's dry season flow rate is the same or higher than the minimum required for the turbines" (Eletrobrás, 1999). In addition, run-of-river schemes do not include significant water storage, and must therefore make complete use of the water flow.

Both Power Plants are Small Hydroeletric Plants, by legal definition of the Brazilian Power Regulatory Agency (Agência Nacional de Energia Elétrica – ANEEL), resolution #652, issued on December 9th, 2003, small hydro in Brazil must have installed capacity greater than 1MW but not more than 30MW and with reservoir area less than 3km^2.

Both Queluz and Lavrinhas uses water from Paraíba do Sul River, with annual average flow rate 217 m^3/s with a dam level of 29.6m and 28.4m, respectively. The head level for Queluz is 12.8m and for Lavrinhas is 13.0m.

The expected lifetime of equipments are over 30 years, according to national standards and small hidroeletric plants already operational.

A.4.4. Estimated amount of emission reductions over the chosen crediting period:

Table 4 – Estimated emission reduction

Years	Annual estimation of emission reductions over the chosen crediting period
2010	110,679
2011	116,673
2012	116,673
2013	116,673
2014	116,673
2015	116,673
2016	116,673
Total estimated reductions (tonnes of CO_2e)	810,717
Total number of crediting years	**7**
Annual average over the crediting period of estimated reductions (tonnes of CO_2e)	**115,817**

A.4.5. Public funding of the project activity:

The project has not received Official Development Assistance (ODA) and any public funding from Parties included in Annex I of the UNFCCC.

SECTION B. Application of a baseline and monitoring methodology

B.1. Title and reference of the approved baseline and monitoring methodology applied to the project activity:

The proposed project activity falls under ACM0002 - Consolidated baseline methodology for grid-connected electricity generation from renewable sources, Version 09, 27 February 2009.

B.2. Justification of the choice of the methodology and why it is applicable to the project activity:

According to the sectoral scope list presented by UNFCCC, the project is related to sectoral scope 1: Energy industries (renewable - / non-renewable sources) and is the most characteristic methodology for large scale – this methodology is applicable to grid-connected renewable power generation project activities that involve additional electricity capacity.

The following tools are used:

- Tool to calculate the emission factor for an electricity system, Version 01.1, approved by the CDM Executive Board and published in Annex 12 of the EB 35 Report.
- Tool for the demonstration and assessment of additionality, Version 05.2, agreed by the CDM Executive Board and published in Annex 10 of the EB 39 Report.
- Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion, Verion 02, approved by the CDM Executive Board and published in Annex 11 of the EB 41 Report.

The project activity is applicable to this methodology as detailed below:

- The project activity is the installation of two run-of-river hydro power plants;
- The project activity results in new reservoirs and the power density is greater than 4 W/m²;
- The geographic and system boundaries for the relevant electricity grid is clearly identified and information on the characteristics of the grid is available;
- Queluz and Lavrinhas SHPs have installed capacity of 30MW (each).

B.3. Description of the sources and gases included in the project boundary:

This project contemplates a clean and renewable source of power and has no associated emissions.

Table 5 - Sources of Baseline emissions

Source	Gas	Justification / Explanation
Electricity Generation	CO_2	Included. Emissions from fossil fuel power plant connected to the national grid.

Table 6 - Sources of Project Activity Emissions

Source	Gas	Justification / Explanation
For hydro power plant emissions of CH_4 from the reservoir.	CO_2	Excluded. There is no increase of fossil fuel or electricity consumption due to the project activity.
	CH_4	Excluded. There is no reservoir included in this project.
CO2 emissions from backup power generation	CO_2	Included. There is a possibility of burning fossil fuel in emergency cases.

All other sources were assumed as minor emission source by the methodology ACM0002 and were not included.

The project boundary for baseline encompasses the physical and geographical location of the project power plants and all power plants physically connected to the electricity system.

B.4. Description of how the baseline scenario is identified and description of the identified baseline scenario:

The baseline scenario was established with reference in the applicable methodology for the project activity ACM0002.

The project activity consists in a construction of two new connected-grid renewable power plants connected to the National Interconnected System.

The baseline scenario is identified as the continuation of the current situation of eletricity generation by the operation of grid-connected power plants and by the addition of new generation sources that partly uses fossil fuel, as reflected in the combined margin (CM) calculations.

The project activity reduce the emissions of greenhouse gas (GHG), by reducing the eletricity generation by fossil fuel sources, which would be emitted in the absence of the project.

B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity (assessment and demonstration of additionality):

In 2006, the ANEEL (national agency that regulates the electrical sector) transferred the concession to the project developers and in 04/2007 they considered the possibility of carbon credits for the project, asking a consultancy proposal from a CDM company. In 08/2007 the project developers received from UNIBANCO (brazilian bank) a proposal to elaborate a business plan, this proposal already considered the CDM as a source of revenues and a volume of CERs was estimated.

Up to this moment, the decision of going ahead with the project had not been taken, since it was depending on the price of energy auction. This is documented based on a Memorandum of Understanding signed by the parties.

The project developers failed to subscribe to PROINFA (incentives program for renewable energy) and the new energy auction. The project activity received an authorization 5 days before the starting date of the auction. So, they had to comercialize the energy on the free-market, signing a power purchase agreement with Perdigão in 10/2007. The financial analysis shows that the returns from the project was below the intended benckmark, without CDM revenues. In 12/2007, they bought from Alstom the turbo-generators. This was the firs real commitment to develop the project.

Finally, in 06/2008, Ambio was contracted to develop the CDM project, starting the project cycle in a way that the CDM project would be registered at the same time the SHP construction is finished. In 08/2008 the EB 41 Annex 46 was published and in 10/2008 Ambio notified the Brazilian DNA and the Executive Board that would be developing the project and proposals from DOEs was requested.

Considering all explanation above, the project developers clearly considered the benefits from the CDM in an early stage and took continuous actions with the intention to register this CDM project acitivity.

Table 7 – Project timeline

Date	Event / Issue
03/10/2006	ANEEL Authorizations - Resolutions numbers 715 (Queluz) and 716 (Lavrinhas), transfering previous authorizations from Empreendimentos Patrimoniais Santa Gisele Ltda. to Usina Paulista Queluz de Energia S.A. and Usina Paulista Lavrinhas de Energia S.A.
28/08/2007	Environmental Licenses: Queluz No.00290 Lavrinhas No. 00289
10/04/2007	Proposal from a CDM consultancy company to develop a CDM project to the project developer group, ALUSA Engineering.
30/08/2007	Proposal from the financial institution UNIBANCO - União de Bancos Brasileiros S.A. (economical-financing assessment of the project activity and commercialization of carbon credits) to “Usinas Paulista Lavrinhas and Queluz de Energia S/A”.
16/10/2007	Power Purchase Agreements / QUELUZ-Contract 090/2007 with Perdigão Agroindustrial S.A., dated 16/10/2007 (energy supply-contracted from 01/11/2009 to 31/12/2024). LAVRINHAS-Contract 115/2007 with Perdigão Agroindustrial S.A.,

	dated 16/10/2007 (energy supply-contracted from 01/11/2009 to 31/12/2024).
01/12/2007	Contract with Alstom Hydro Energia Brasil Ltda (Turbines-Generators).
13/02/2008	First payment invoices (QUELUZ invoice No.937 and ALUSA invoice No.938) from the company responsible for construction, Alusa Engenharia Ltda (work order of the 1st and 2nd construction's phases - construction job site/bed)
26/05/2008	National Water Agency (Agência Nacional de Águas - ANA) / Hidric resources use permits: QUELUZ-Resolution No. 303 and LAVRINHAS-Resolution No. 304.
18/06/2008	Communication between project participant and CDM consultancy company AMBIO.
14/10/2008	Communication from project participants with Brazilian DNA and UNFCCC.
15/10/2008	Validation proposal solicitated to RINA
12/11/2008	Validation contract signed with RINA
11/12/2008	PDD made publicly available through the CDM website

The identified baseline used as reference the "Tool for demonstration and assessment of additionality" version 5.2.

Step 1 - Identification of alternatives to the project activity consistent with current laws and regulation

Sub-step 1A - Define alternatives to the project activity

Scenario 1: Continuation of the current situation, where the electricity generation occurs partly in large hydros or in fossil fuel thermal units.

Scenario 2: The proposed project activity undertaken without being registered as a CDM project activity.

Sub-step 1B - Consistency with mandatory laws and regulations

Both alternatives comply with all relevant regulations, not excluding any scenario.

Step 2 – Investment Analysis

Sub-step 2B Option III. Apply benchmark analysis
The Internal Rate Return (IRR) of the project was compared to government bound rate. When attractiveness of the project activity without CDM revenues is compared to the SELIC rate, which has lower risk compared to investing on a new SHP, it is clearly demonstrated that the project developer would look for better opportunities at the financial market, such as fixed interest rates.

The costs included to the construction of each power plant are listed below:

Table 8 - Investment costs	**QUELUZ** (thousand R$)	**LAVRINHAS** (thousand R$)
Land and environmental actions	-3,100	-2,643
Engine room	-10,174	-9,429

Dam construction	-57,075	-46,843
Turbine and Generator	-44,860	-44,860
Electrical equipments	-15,138	-21,370
Engineering	-27,879	-28,311
TOTAL	**-158,226**	**-153,456**

All this tasks were responsible for an investment of R$ 311.6 million. The amount of energy that will be exported is almost 375 GWh/year and the net revenues from the energy selling is R$ 36.9 million per year (considering taxes) and the operational cost is R$ 5.1 million, resulting in a net income of R$ 31.7 million by year.

The IRR for this project without carbon revenues are presented in the table below, lower than the 13.6% rate from SELIC. This rate is used as reference in the Host country as treasury boundsrisk free rate. This SELIC is the average from the last 2 years (2006 and 2007). The data used is presented in a excel file that will be public available for consultation (the website http://www.bcb.gov.br/?SELICDIA can be consulted as well for more information). Considering the Carbon revenues, the IRR for Queluz SHP was 11.2% and for Lavrinhas 11.6%.

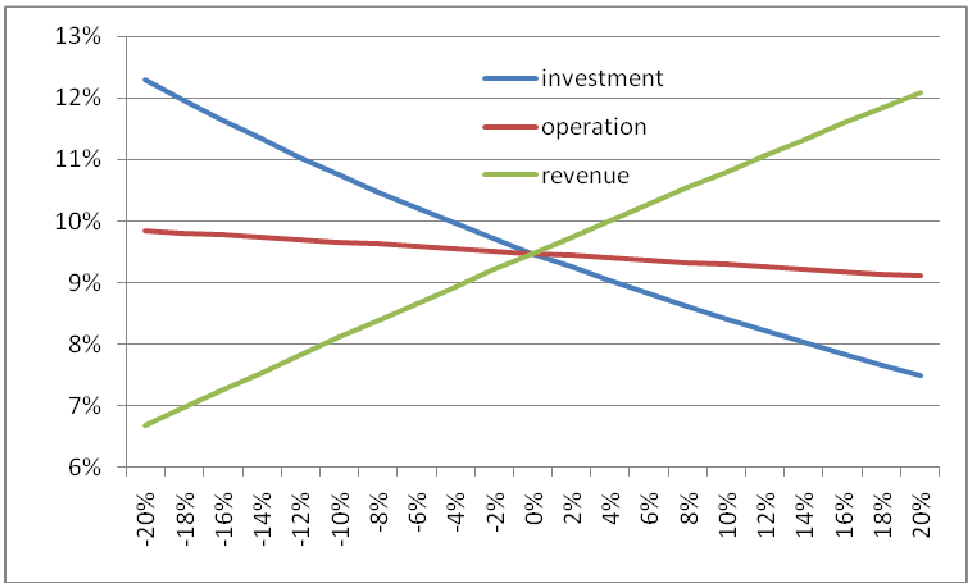
Table 9 – Investment Results	Queluz SHP	Lavrinhas SHP
IRR	9,48%	9,84%
NPV without carbon (1000 R$)	-42.947	-38.177

Sensitivity analysis – The cash flow was reassessed to determine the necessary variation so the NPV would be equal to zero. The results are presented in a table below.

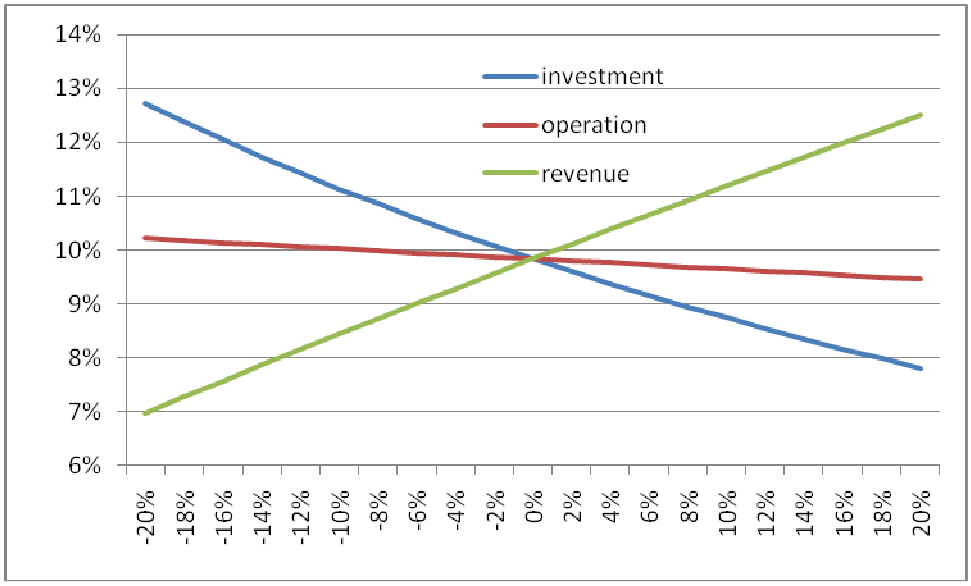
Table 10 – Sensitivity analysis	Queluz SHP	Lavrinhas SHP
Investment	-27%	-25%
Operational Cost	No impact	No impact
Revenues & taxes	+32%	+29%

Investments cannot be 25% lower since the contract with the company responsable for the construction was determined at a fixed price. No significant impact is expected in investment costs. Operational costs would not make the NPV reach zero, even if no costs were considered. The impact of net revenues would need to be superior to 29% to make Lavrinhas SHP feasible. It is not expected to occur in a short and mid-therm since a power purchase agreement is fixed until 2024.

Graph 1 - SHP Queluz



Graph 2 - SHP Lavrinhas



Step 3 – Barrier Analysis

Not applicable.

Step 4. Common practice analysis

Sub-step 4A - Analyze other activities similar to the proposed project activity:

Hydroelectric projects can differ significantly from each other considering the region to be executed, climate, topography, availability of transmissions lines, river flow regularity, etc. For those reasons alone it is extremely difficult and not reasonable to compare different hydropower potential and plants.

Moreover, hydro-power plants cannot be optimally placed (near load centers and transmission lines) and easily transferred (moved to a new region where a better tariff is offered) as, for example, modular fossil-fuel-fired (diesel, natural gas) power plants. Differences may be even larger if no big water storage is possible, as in the case of run-of-river small hydropower plants.

Since 2006 there are 24 SHPs, with installed capacity over than 10MW and started operations, where 22 received some kind of incentives (CDM or Proinfa). Its forecast for more 20 SHPs starts operations in the next years and 11 of them already received the incentives, as found in tables in **Annex 3**.

From this result, it is clearly demonstrated that to implement a SHP in Brazil it is necessary external incentives. PROINFA (Program for the Incentive of Electric Energy from alternative sources) incentive has been a decisive factor for new business enterprises. Excluding the SHPs that have PROINFA incentives, most of them have CDM incentives. Through numbers presented above, it can be proved that it is required a strong incentive to promote the construction of renewable energy projects in Brazil, where it includes SHPs.

Sub-step 4B - Discuss any similar options that are occurring

According to the National Agency for Eletrical Energy (ANEEL), only 2.3% of the installed capacity of the overall operational Brazilian plants are represented by SHPs, while Large Hydros are 73.44% and 21.91% are Thermal plants.

This project activity is not the business-as-usual scenario in the country where large hydro with large reservoirs and natural gas fired thermal power projects represent the majority of new installed capacity. With the financial benefit derived from the CERs, it is anticipated that other project developers would benefit from this new source of revenue and then would decide to develop such projects. CDM has made it possible for some investors to set up their small hydro plants and sell their electricity to the grid.

According to the tool used, if sub-steps 4a and 4b are satisfied, then the proposed project activity is **additional.**

B.6. Emission reductions:

B.6.1. Explanation of methodological choices:

According to the methodology ACM0002, the emission reductions are calculated as follows:

$$ER = BE - PE - LE$$

Where:

ER	Emission reductions (tCO_2e).
BE	Baseline emissions (tCO_2e).
PE	Project emissions (tCO_2e).

LE Leakage emissions (tCO_2e).

Baseline emissions include only CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity, calculated as follows:

$$BE = (EG - EG_{baseline}) \cdot EF_{grid,CM}$$

Where:

BE Baseline emissions (tCO2).

EG Electricity supplied by the project activity to the grid (MWh).

$EG_{baseline}$ Baseline electricity supplied to the grid (MWh).

$EF_{grid,CM}$ Combined margin CO_2 emission factor for grid connected power generation (tCO_2e/MWh).

The power density of the project activity 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_B Installed capacity of the hydro power plant before the implementation of the project activity (W).

A_{PJ} Area of the reservoir after the implementation of the project activity (m^2).

A_{BL} Area of the reservoir before the implementation of the project activity (m^2).

Considering the choices and assumptions below:

- Leakage emissions will not be considered since it is not expected the emissions from the reservoir, the equipments are not transferred from another activity;
- The project activity is the installation of new grid-connected renewable power plants and baseline electricity supplied to the grid ($EG_{baseline}$) is not considered;
- The grid selected is the National Interconnected System (Sistema Interligado Nacional – SIN);
- The EF_{grid} will be calculated *ex-post*. Using the Dispatch data analysis method and for the period (year - 1). The build and operation margin will be made publicy available by the Brazilian DNA.
- The dispatch analysis method was used to calculate the *ex-ante* emission reduction.The information made publicity available by the Brazilian DNA CIMGC was used.

Project emissions included CO_2 emisisons from burning fossil fuel in backup situations. The project emissions of CH_4 from reservoirs is not considered once the power density is above 10 W/m^2;

$$PE = PE_{FC} = FC \cdot COEF$$

Where:

PE_{FC} CO_2 emissions from fossil fuel combustion (tCO_2);

FC Quantity of fuel combusted (mass or volume unit);

COEF Emission factor for each fuel combusted (in tCO_2/fuel unit)

The *ex-ante* estimations not considered the fuel consumption since it would possibily occur in very execpcional cases.

The emission reduction calculation can be summarised as follow:

$$ER = BE - PE = EG \cdot EF_{grid,CM} - FC \cdot COEF$$

B.6.2. Data and parameters that are available at validation:

Data / Parameter:	A_{BL}
Data unit:	m^2
Description:	Area of the reservoir
Source of data used:	Engeering plants. There was no reservoir before project activity.
Value applied:	Lavrinhas: 0 Queluz: 0
Justification of the choice of data or description of measurement methods and procedures actually applied :	
Any comment:	Paramenter used to determine emissons from reservoir.

Data / Parameter:	Cap_{BL}
Data unit:	MW
Description:	Installed Capacity
Source of data used:	No equipments were installed before the project activity.
Value applied:	Lavrinhas: 0 Queluz: 0
Justification of the choice of data or description of measurement methods and procedures actually applied :	No equipments were installed before the project activity.
Any comment:	Paramenter used to determine emissons from reservoir.

Data / Parameter:	PE_{FC}
Data unit:	MW
Description:	Installed Capacity
Source of data used:	No equipments were installed before the project activity.
Value applied:	Lavrinhas: 0 Queluz: 0
Justification of the choice of data or description of measurement methods and procedures actually applied :	No equipments were installed before the project activity.
Any comment:	Paramenter used to determine emissons from reservoir.

B.6.3. Ex-ante calculation of emission reductions:

$$PD_{LAVRINHAS} = (30 * 10^6 - 0) / (1.27 * 10^6 - 0) = 24 \text{ W/m}^2$$
$$PD_{QUELUZ} = (30 * 10^6 - 0) / (0.76 * 10^6 - 0) = 39 \text{ W/m}^2$$

The power densities for both plants are higher than 10 W/m² and project emissions from the reservoir are not considered.

The $EF_{grid,CM}$ will be determined *ex-post*, but for the purpose of estimating the emission reductions prior to validation, the most recent data, from the year of 2008, will be used.

$$EF_{grid,OM,2007} = 0.4766\ tCO_2e/MWh$$
$$EF_{grid,BM,2007} = 0.1458\ tCO_2e/MWh.$$
$$EF_{grid,CM,2007} = 0.5 \times 0.4766 + 0.5 \times 0.1458 = 0.3112\ tCO_2e/MWh$$

Table 11 - Estimated energy generation

Energy	**Queluz**	**Lavrinhas**	**TOTAL**	**Baseline**
Unit	MWh	MWh	**MWh**	**tCO_2e**
2010	187,464	168,204	**355,668**	110,679
After 2011	187,464	187,464	**374,928**	116,673

* Considering a load factor of 71% based on installed capacity and the start operation date of each turbine.

B.6.4 Summary of the ex-ante estimation of emission reductions:

Table 12 – Ex-ante estimation of emission reduction

Years	**Estimation of project activity emissions (tonnes of CO2 e)**	**Estimation of baseline emissions (tonnes of CO_2e)**	**Estimation of leakage (tonnes of CO_2e)**	**Estimation of overall emission reductions (tonnes of CO_2e)**
2010	0	110,679	0	110,679
2011	0	116,673	0	116,673
2012	0	116,673	0	116,673
2013	0	116,673	0	116,673
2014	0	116,673	0	116,673
2015	0	116,673	0	116,673
2016	0	116,673	0	116,673
Total (tonnes of CO2)	0	810,717	0	810,717

B.7. Application of the monitoring methodology and description of the monitoring plan:

B.7.1 Data and parameters monitored:

Data / Parameter:	EG
Data unit:	MWh
Description:	Electricity supplied by the project activity to the grid.
Source of data to be used:	Monthly reports
Value of data applied for the purpose of calculating expected emission reductions in section B.5	374,928

Description of measurement methods and procedures to be applied:	Hourly measurement and monthly recording
QA/QC procedures to be applied:	Electricity supplied by the project activity to the grid. Cross checked by receipt of sales.
Any comment:	Each small hydro will prepare its own monthly report. EG is the sum of both reports.

Data / Parameter:	$EF_{grid,CM}$
Data unit:	tCO_2/MWh
Description:	Combined margin CO_2 emission factor for grid connected power generation
Source of data to be used:	CIMGC – Brazilian DNA
Value of data applied for the purpose of calculating expected emission reductions in section B.5	0.3112
Description of measurement methods and procedures to be applied:	The Brazilian DNA made available the operating margin emission factor calculated using option c – Dispatch data analysis OM.
QA/QC procedures to be applied:	Public data available on the internet
Any comment:	Calculated as $EF_{grid,OM}$ x 0.5 + $EF_{grid,BM}$ x 0.5, using the data made publicy available by the Brazilian DNA for the year (y-1), considering the Interconnected National System (Sistema Interligado Nacional – SIN in portuguese).

Data / Parameter:	A_{PJ}
Data unit:	m^2
Description:	Area of the reservoir
Source of data to be used:	Preliminary license #666 and #667 issued by the local environmental agency
Value of data applied for the purpose of calculating expected emission reductions in section B.5	Lavrinhas: $1.27 * 10^6$ Queluz: $0.76 * 10^6$
Description of measurement methods and procedures to be applied:	If any changes occurs it will be documented.
QA/QC procedures to be applied:	Based on topographic survey prepared by a third company
Any comment:	

Data / Parameter:	Cap_{PJ}
Data unit:	MW
Description:	Installed Capacity
Source of data to be used:	Preliminary license #666 and #667 issued by the local environmental agency
Value of data applied for the purpose of calculating expected emission reductions in section B.5	Lavrinhas: 30 Queluz: 30
Description of measurement methods and procedures to be applied:	Installed capacity according to installed manual equipments

QA/QC procedures to be applied:	Based on equipments to be installed at the project sites.
Any comment:	

Data / Parameter:	FC
Data unit:	Ton
Description:	Quantity of fuel combusted
Source of data to be used:	Fuel receipts
Value of data applied for the purpose of calculating expected emission reductions in section B.5	0
Description of measurement methods and procedures to be applied:	The fuel consumption will be controlled by purchase bills
QA/QC procedures to be applied:	
Any comment:	

Data / Parameter:	COEF
Data unit:	tCO_2e/fuel unit
Description:	Emission factor of fossil fuel
Source of data to be used:	IPCC and national default values
Value of data applied for the purpose of calculating expected emission reductions in section B.5	This data was not considered in *ex-ante* estimations
Description of measurement methods and procedures to be applied:	The data used is internationaly recognised
QA/QC procedures to be applied:	The data used is internationaly recognised
Any comment:	

B.7.2. Description of the monitoring plan:

The energy generated will be monitored by a calibrated ION 8000 series or similar metering device. Reading will be registered continuously by the supervisory system. All information will be cross checked by the energy invoices, that uses the concessionaire monitoring equipments. The project developer will be responsible for the operation, for the monitoring plan, training the operators and data collection.

Data monitored are required for verification and issuance will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.

B.8. Date of completion of the application of the baseline study and monitoring methodology and the name of the responsible person(s)/entity(ies):

The baseline study and the monitoring methodology were concluded on 05/12/2008 and AMBIO Participações Ltda. was the responsible entity, represented by Luis Filipe Kopp - kopp@ambiosa.com.br and Mariana Knust – mariana@ambiosa.com.br.

SECTION C. Duration of the project activity / crediting period

C.1. Duration of the project activity:

C.1.1. Starting date of the project activity:

01/12/2007 – Contract with Alstom, buying the turbo-generators, which was the first commitment.

C.1.2. Expected operational lifetime of the project activity:

More than 30 years.

C.2. Choice of the crediting period and related information:

C.2.1. Renewable crediting period:

C.2.1.1. Starting date of the first crediting period:

01/01/2010 (but not earlier than registration)

C.2.1.2. Length of the first crediting period:

7 years

C.2.2. Fixed crediting period:

C.2.2.1. Starting date:

the section is left blank on purpose.

C.2.2.2. Length:

the section is left blank on purpose.

SECTION D. Environmental impacts

D.1. Documentation on the analysis of the environmental impacts, including transboundary impacts:

The project developer complies with all laws and regulations applicable. All applicable licenses were obtained and all conditions were followed. The State Environmental Authority is the Departament of Evaluation of Environmental Impact - DAIA (Departamento de Avaliação de Impacto Ambiental), i.e. Environmetal Agency of the State of São Paulo (Secretaria de Meio Ambiente do Estado de São Paulo), requests the Preliminary Environmental Report (RAP) for activities with potential to cause environmental impacts.

The Departament of Evaluation of Environmental Impact (DAIA) analyze the activities with potencial or effectively responsible for environmental impacts, that require licence, and act complementary in the license process to activities which cause small impacts, not contribute to pollution and located in small towns that has no resource to prosecute the licence process.

D.2. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party:

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SECTION E. Stakeholders' comments

E.1. Brief description how comments by local stakeholders have been invited and compiled:

According to Resolution #7 dated March 5th, 2008 from the Brazilian Inter-Ministerial Commission of Global Climate Change (Comissão Interministerial de Mudança Global do Clima - CIMGC), the project proponents must send a letter by mail containing a brief description of the project and an invitation for comments to the stakeholders involved, interested or affected by project activities under the Clean Development Mechanism. In this case, letters were sent on 05 December 2008 to the following local stakeholders:

Table 13 – List of stakeholders

City Hall of Queluz	Prefeitura Municipal de Queluz	Rua Prudente de Moraes, 100 – Centro CEP 12800-000 – Queluz - SP
City Hall of Lavrinhas	Prefeitura Municipal de Lavrinhas	Paço Municipal, 200 – Centro CEP 12760-970 – Lavrinhas - SP
Chamber of Deputy of Queluz	Câmara Municipal de Queluz	Praça Joaquim Pereira – S/Nº- Centro CEP 12800-000 – Queluz - SP
Chamber of Deputy of Lavrinhas	Câmara Municipal de Lavrinhas	Rua Manoel Machado, 82 – Centro CEP 12760-970 – Lavrinhas - SP
District Attorney of São Paulo*	Ministério Público do Estado de São Paulo	Rua Riachuelo, 115 - Centro CEP 01007- 904 – São Paulo - SP
Federal Attorney	Ministério Público Federal	SAF Sul Quadra 4 Conjunto C CEP 70050-900 - Brasília – DF
Environment agencies from the State and Local Authority	Secretaria do Meio Ambiente do Estado de São Paulo - SMA	Av. Prof. Frederico Hermann Júnior, 345- Alto de Pinheiros CEP 05459-010 - São Paulo - SP
Environment agencies from the State and Local Authority	CETESB - Companhia de Tecnologia de Saneamento Ambiental	Av. Prof. Frederico Hermann Júnior, 345- Alto de Pinheiros CEP 05459-010 - São Paulo - SP
Environment agencies from the State and Local Authority	DAIA - Departamento de Avaliação de Impacto Ambiental	Av. Prof. Frederico Hermann Júnior, 345- Alto de Pinheiros CEP 05459-010 - São Paulo - SP
Environment agencies from the State and Local	DAEE - Departamento de Águas e Energia Elétrica	Rua Butantã, 285 - Pinheiros CEP 05424-140 - São Paulo - SP

Authority		
Environment agencies from the State and Local Authority	Comitê das Bacias Hidrográficas do Rio Paraíba do Sul	Largo Stª Luzia, 25 - Bairro Santa Luzia CEP 12010-510 – Taubaté - SP
Brazilian Forum of NGOs	Fórum Brasileiro de ONGs e Movimentos Sociais - FBOMS	SCS, Quadra 08, Bloco B-50, salas 133/135 Ed. Venâncio 2000 CEP 70.333-970 - Brasília – DF

* the permanent institution essential for legal functions responsible for defending the legal order, democracy and social/individual interests.
** no local association related to the project activity was found.

Local stakeholders were invited to raise their concerns and provide comments on the project activity for a period of 30 days after receiving the letter of invitation. The latest version of the PDD and other relevant documentation will also be published on the internet by the project participants until the project is registered.

E.2. Summary of the comments received:

To date no formal comments have been received from stakeholders.

E.3. Report on how due account was taken of any comments received:

Not applicable, given that no comments were received.

Annex 1

CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY

Organization:	Usina Paulista Queluz de Energia S.A.
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Organization:	AMBIO Participações Ltda.
Street/P.O.Box:	Rua Marques de São Vicente 225, 13A - Gávea
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Direct FAX:	
Direct tel:	
Personal e-mail:	ambio@ambiosa.com.br

Annex 2

INFORMATION REGARDING PUBLIC FUNDING

There is no public funding from Annex 1 party envolved in the project.

Annex 3

BASELINE INFORMATION

Tables of PCHs between 10MW and 30MW that are operating or that will start operations:

Started Operations in 2006					
	Name	State	Installed capacity (MW)	CDM	PROINFA
2006	Santa Edwiges I	GO	10,1	X	
2006	Santa Edwiges II	GO	13,0	X	
2006	São Bernardo	RS	15,0		X
2006	Piranhas	GO	18,0		X
2006	Esmeralda	RS	22,2		X
2006	Canoa Quebrada	MT	28,0		X
2006	Garganta da Jararaca	MT	29,3	X	
2006	Mosquitão	GO	30,0		X
2006	Sacre 2	MT	30,0	X	

Started Operations in 2007					
	Name	State	Installed capacity (MW)	CDM	PROINFA
2007	Braço Norte IV	MT	14,0	X	
2007	Santa Laura	SC	15,0		X
2007	Flor do Sertão	SC	16,5		X
2007	Primavera	RO	18,2	X	
2007	José Gelásio da Rocha	MT	23,7		X
2007	São João(Castelo)	ES	25,0	X	
2007	Rondonópolis	MT	26,6		X
2007	Buriti	MS	30,0	X	X

Started Operations in 2008					
	Name	State	Installed capacity (MW)	CDM	PROINFA
2008	Salto Buriti	PA	10,0	X	
2008	Salto Três de Maio	PA	15,0	*	*
2008	Planalto	GO/MS	17,0	*	*
2008	Cachoeirão	MG	18,0	*	*
2008	Pampeana	MT	28,0	X	
2008	Salto Curuá	PA	30,0	X	

Will Start Operations in 2009 or 2010

	Name	State	Installed capacity (MW)	CDM	PROINFA
2009	Ouro	RS	12,0	X	
2009	Capivari	SC	12,0	*	*
2009	Eng° Henrique Kotzian	RS	13,0	*	*
2009	Rodeio Bonito	SC	14,6	X	
2009	Pirapetinga	ES/RJ	15,7	X	
2009	Piedade	MG	16,0	*	*
2009	Retiro	SP	16,0	*	*
2009	Pedra do Garrafão	ES/RJ	16,5	X	
2009	Eng° Ernesto Jorge Dreher	RS	17,0	*	*
2009	Malagone	MG	19,0	*	*
2009	Nova Aurora	GO	21,0	*	*
2009	Santa Gabriela	MT/MS	24,0	*	*
2009	São Domingos II	GO	24,3	X	
2009	Sítio Grande	BA	25,0	X	
2009	Angelina	SC	25,0	X	
2009	Goiandira	GO	27,0	*	*
2009	Porto das Pedras	MS	28,0	*	*
2009	Santa Fé	ES	29,0	X	X
2009	Queluz	SP	30,0	X	
2010	Lavrinhas	SP	30,0	X	

* no information is available if the respective small hydro received or not any incentive.
Source: http://www.mme.gov.br/programs_display.do?prg=5 and www.aneel.gov.br accessed on 05/12/2008.

Annex 4

MONITORING INFORMATION

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