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:

Osório Wind Power Plant Project 2 (OWPPP2)
Version 02
25/07/2011

A.2. Description of the project activity:

The Osório Wind Power Plant Project 2 is a greenfield project located in the municipality of Osório, state of Rio Grande do Sul, Brazil. The project will generate electricity by using a clean and renewable source of energy, the wind, avoiding CO2 emissions from electricity generation by fossil fuel power plants. Prior to the project implementation, there was no power generation at the project site.

OWPPP2 consists of 50 ENERCON 2 MW wind turbines with hub heights of 110 m, for a total installed capacity of 100 MW, and is sub-divided into the following 4 wind farms:

Table 1 - Wind farms description

Wind Farm	Installed Capacity (MW)	Power Purchase Agreement (PPA) Date	Commercial Operation Date (COD) [1]
Osório 2	24	25/08/2010	01/06/2012
Osório 3	26	26/08/2010[2]	01/10/2012
Sangradouro 2	26	05/11/2010	01/04/2012
Sangradouro 3	24	05/11/2010	01/04/2012

OWPPP2 will deliver energy to the Brazilian National Interconnected System (SIN) and it will sell energy on the *Câmara de comercialização de Energia Elétrica* (CCEE), through the four mentioned Power Purchase Agreements (PPAs).

The project activity involves the development, design, engineering, procurement, financing, construction, operation, maintenance and monitoring of the OWPPP2 plants.

The baseline scenario is presented in section B.4, i.e.: *Electricity delivered to the grid by the project would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system".*

[1] EPC due dates

[2] The PPA is not signed yet but the auction date is available (http://www.aneel.gov.br/aplicacoes/editais_geracao/documentos/072010_Resultado%20do%20Leil%C3%A3o_Produto%20Disponibilidade.pdf)

The average capacity factor of the project will be approximately 39.8%, resulting in a projected average generation (P50) of 349 GWh/year[3]. As a consequence, it will achieve an estimated emission reduction of 69, 915 tCO2 per year.

The developer of the Osorio 2 and Osorio 3 wind farms is Ventos do Litoral Energia S.A., and the developer of the Sangradouro 2 and Sangradouro 3 wind farms is Ventos da Lagoa Energia S.A. These companies are registered in compliance with brazilian regulation since february 2010, with the specific purpose of generating energy from their wind farms.

OWPPP2 contributes to the sustainable development of the region by:

- Improving the local infrastructure (roads and electric grid);
- Generating employment and improving of income and working conditions of the population in the area: the project is expected to create jobs during its construction phase, which includes the construction of roads, electric infrastructure, installation of the wind turbines and the control building, where the equipments and the staff responsible for controlling and operating the wind farm are located. Estimates show the generation of up to 480 direct jobs during this phase in Brazil, of which 150 are in Osório, around 80 in Rio Grande do Sul and around 250 in other Brazilian regions. Furthermore during the life time of the project, around 20 direct qualified Jobs for Brazilian employees are guaranteed in maintenance and operation of the wind farm;
- Providing technical training to employees through specific programs on different issues related to wind generation and maintenance of equipment;
- Increasing local resources, through revenues from the lease of the land for the construction of the wind farm. Rural owners will have a rental income for 20 years. Moreover, a lot of services will be required for the new activity, such as: equipments rental, hotel and meal services, etc;
- Allowing continued agricultural activities on the site, which is therefore not affected by the project activity;
- Developing educational, technical, social and environmental programs to be maintained throughout project operation;
- Enhancing tourism activities in the project region encouraging ecological tourism;
- Transferring advanced technology from industrialized countries to increase building capacities in Brazil and support the development of this industry based on renewable energy from the wind, which is uncommon in this country. OWPPP2 will contribute to the technology transfer process and foster the manufacturing of wind turbines and related equipment in Brazil;
- Increasing the share of renewable power generation at both the regional and national levels;
- Reducing GHG emissions compared to a business-as-usual scenario.

[3] DEWI wind studies for each wind farm (This value is the sum of all the 4 wind farms)

A.3. Project participants:

Name of party involved (*) ((host) indicates a host Party)	Private and/or public entity(ies) project participants	Kindly indicate if the party involved wishes to be considered as project participant (Yes/No)
Brazil (host)	• Enerfin do Brasil - Sociedade de Energia LTDA.	No
Brazil (host)	• Ventos do Litoral Energia S.A.	No
Brazil (host)	• Ventos da Lagoa Energia S.A.	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 of 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.:

Rio Grande do Sul

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

Osório

A.4.1.4. Details of physical location, including information allowing the unique identification of this project activity (maximum one page):

OWPPP2 is located in the Osório municipality, 90 km east of Porto Alegre city, the capital of the state of Rio Grande do Sul, and 18 km west of the Atlantic Ocean. The state of Rio Grande do Sul state is the southernmost state of Brazil, bordering the north of Uruguay and the northeast of Argentina.

Map 1 - Location of OWPPP2 (Rio Grande do Sul, Brazil) (Source: Google Earth)

Map 2 – OWPPP2 layout (Source: Google Earth)

Geocoordinates: X=568081.714 Y=6685194.102 (the project will be installed around these coordinates).

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

Sectorial Scope 1: Energy industries – renewable/non renewable sources;

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

This is a Greenfield project formed by fifty E-82 ENERCON wind energy converters (WECs), disposed to take maximum advantage of the wind as a clean source of energy.

Table 2 - Technology to be employed by OWPPP2

WEC manufacturer	ENERCON (1)
Model	E-82 (1)
Total capacity	2000 kW each (1)
Capacity factor (P50)	39.8 % (2)
Quantity of WECs	50 (1)
Lifetime	20 years (3)
Rotor diameter	82 m (2)
Hub Height	110 m
(1) WEC Purchase agreement (EPC Wobben – serial number: W-05904-V02, W-05903-V01) (2) Wind Study (DEWI September 17th, 2010) (3) Design Assessment (ENERCON manual)	

These WECs are known for their multi-pole synchronous generator, which makes it possible to connect it directly to the rotor hub as a fixed unit without a gearbox. This system has many advantages: minimizes the noise, eliminates the use of gearbox lubricant, reduces environmental impact, reduces the number of rotating elements in the turbine, increases the lifetime of the turbine and diminishes probability of failure.
ENERCON converters are modular and parallel connected, which increases the WEC´s availability and flexibility.

Also, ENERCON WECs are operated with a special storm control feature. This system enables reduced turbine operation in the event of extremely high wind speeds, and prevents the otherwise frequent shutdowns and resulting yield losses.

A SCADA remote controlling system is used to monitor the operation parameters from an onsite control room, as explained in section B.7.

To interconnect the wind farms to the grid, an enlargement of the existing substation, Eléctrica Lagoa dos Barros 34.5/230kV is planned. A 230 kV transmission line, which currently transmits the energy from the 150 MW wind farms of Ventos do Sul, will link the OWPP2 to the Osorio 2 substation, connected to the national grid.

Considering the P50 capacity factor of 39.8% as determined by the German Wind Energy Institute - DEWI, a wind energy consultancy contracted by the project participant, the expected average net power supplied to the grid is 349 GWh/yr.

The baseline scenario for the proposed project activity is the continuation of the current practice, electricity generation from grid connected power plants in the Brazilian electricity grid, which is identical to the scenario existing prior to the start of the project activity.

The proposed project activity will displace electricity generation at the system´s margin, i.e. this CDM project will displace electricity that is produced by marginal sources (mainly fossil fueled thermal plants) which have higher electricity dispatching costs than base-load sources and are solicited only over the hours that base-load sources (low cost or must-run sources) cannot supply the grid when the demand exceeds base-load capacity.

In line with the methodology (ACM0002), the greenhouse gasses accounted for are CO2 emissions from electricity generation in fossil fuel fired power plants that is displaced due to the proposed project activity.

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

A fixed crediting period was selected for this project activity.

Table 3 - Annual estimation of emissions reductions

Years*	Annual estimation of emission reductions in tonnes of CO_2e
2012	41,560
2013	71,655
2014	71,655
2015	71,655
2016	71,655
2017	71,655
2018	71,655
2019	17,913
Total estimated reductions (tonnes of CO_2e)	**489,403**
Total Number of crediting years	7
Annual average over the crediting period of estimated reductions (tonnes of CO_2e)	69,915

* From 01/04/2012 to 31/03/2019

A.4.5. Public funding of the project activity:

There is no public funding from any Annex I Party for this project

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:

- Methodology used for baseline calculations and monitoring: ACM 0002 – "*Consolidated baseline methodology for grid-connected electricity generation from renewable sources*" Version 12.1;
- "*Tool to calculate the emission factor for an electricity system*" Version 02;
- "*Tool for the demonstration and assessment of additionality*" Version 05.2.

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

The approved baseline methodology ACM0002 is applicable to grid-connected renewable power generation project activities that: (a) install a new power plant at a site where no renewable power plant was operated prior implementation of the project activity (greenfield plant); (b) involve a capacity addition; (c) retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).

As a Greenfield wind power project, the project fulfills the following methodology condition:

"The project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant / unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit."

In addition, the project does not involve:

- fossil fuel switch to renewable energy sources at the site of the project activity;
- Biomass fired power plants;
- Hydro power plants that result in new reservoirs or in the increase in existing reservoirs where the power density of the power plant is less than $4W/m^2$.

The "Tool to calculate the emission factor for an electricity system" is applicable to the project activity as the project will supply electricity to the grid.

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

According to the methodology, the spatial extent of the project boundary includes the project site and all power plants connected physically to the electricity system that the OWPPP2 will be connected to.

Electricity system: The National Interconnected System (SIN) is the defined electricity system for the project activity. It is controlled and operated by the National System Operator (*ONS – Operador Nacional do Sistema*) and all power plants connected to it are included in the project boundary.

OWPPP2: The project site where OWPPP2 is installed is included in the project boundary.

Table 4 - Emissions sources included or excluded from the project boundary

	Source	Gas	Included?	Justification/Explanation
Baseline	CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity.	CO_2	Yes	Main emission source.
		CH_4	No	Minor emission source.
		N_2O	No	Minor emission source.
Project activity	For geothermal power plants, fugitive emissions of CH_4 and CO_2 from non-condensable gases contained in geothermal steam	CO_2	No	This is not a geothermal project activity
		CH_4	No	This is not a geothermal project activity.
		N_2O	No	This is not a geothermal project activity
Project activity	CO_2 emissions from combustion of fossil fuels for electricity generation in solar thermal power plants and geothermal power plants	CO_2	No	This is not a solar or geothermal project activity.
		CH_4	No	This is not a solar or geothermal project activity.
		N_2O	No	This is not a solar or geothermal project activity.
Project activity	For hydro power plants, emissions of CH_4 from the reservoir	CO_2	No	This is not a hydro power plant project activity.
		CH_4	No	This is not a hydro power plant project activity.
		N_2O	No	This is not a hydro power plant project activity.

Since project activity is a wind farm project, no project emissions are accounted for OWPPP2, as demonstrated in the table above. This assumption is in accordance with the ACM0002 requirements.

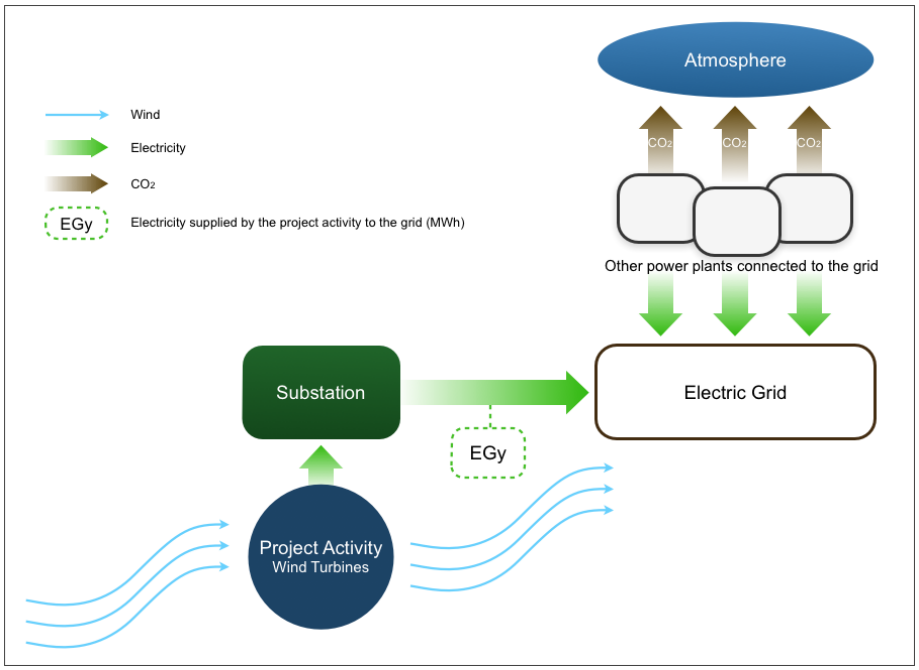

Figure 1 - Flow diagram project boundary

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

The project activity involves the installation of a new grid-connected power plant/unit. It does not modify or retrofit an existing electricity generation facility. Therefore, the baseline scenario is the following:

Electricity delivered to the grid by the project would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "tool to calculate the emission factor for an electricity system".

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):

The approved methodology ACM0002 requires the use of the latest version of the "Tool for the demonstration and assessment of additionality" agreed by the Executive Board. The latest version (05.2) was used.

The project owner has notified the UNFCCC and the Brazilian DNA its intention to develop this project activity under the CDM framework on 08/06/2010.

Step 1. Identification of alternatives to the project activity consistent with current laws and regulations

Step 1a. Define alternatives to the project activity:

Outcome of Step 1a:

a) Alternative 1: The proposed project activity is not undertaken as a CDM project.
b) Alternative 2: The continuation of the current situation, i.e. the power generated under the project would be generated in existing and new grid-connected power plants in the electricity system;

Step 1b. Consistency with mandatory laws and regulations:

Outcome of Step 1b:
All above mentioned alternatives are in compliance with all mandatory applicable legal and regulatory requirements of Brazil.

Step 2. Investment analysis

The "Tool for the demonstration and assessment of additionality" (Version 05.2) states that the project participants may choose to apply step 2 (investment analysis) or step 3 (barrier analysis) to demonstrate additionality of the project.

Accordingly, the investment analysis shall determine whether the proposed project activity is not:

(a) The most economically or financially attractive; or
(b) Economically or financially feasible, without the revenue from the sale of certified emission reductions (CERs)

To conduct the investment analysis, the following steps are used:

Sub-step 2a: Determine appropriate analysis method

The additionality tool lists three analyse methods: Simple Cost Analysis (Option I), Investment Comparison Analysis (Option II) and Benchmark Analysis (Option III).

The Option I, is not applicable to the Project as the Project will generate benefits from the sales of electricity as well as CDM-related income. Option II is not applicable as there is only one investment option
Outcome of Step 2a: Project participants are opting for the benchmark analysis (Option III).

Sub-step 2b: Option III. Apply benchmark analysis

For the purpose of this investment analysis, the IRR was considered the most suitable indicator for comparing all the scenarios under analysis. The appropriate benchmark comparison as presented below was defined according to the "Tool for the demonstration and assessment of additionality" (Additionality Tool) and in line with the "Guidance on the Assessment of Investment Analysis" (Guidance on Investment Analysis).

The benchmark parameter used for this comparison analysis was the government bond rates increased by a suitable risk premium, calculated as follows:

Table 5 - Benchmark calculation method

A	Brazilian Government Bond Rate NTN-B, maturity 2035 (maturity similar to the project lifetime, real terms)
B	Market Risk Premium (S&P 500 - T-Bonds)
C	Unlevered Beta (electricity utilities)
D = A + B x C	**Benchmark - Real Terms**
E	Inflation rate (IPCA)
D = A + B x C + E	**Benchmark - Nominal Terms**

Brazilian Bond Rate

The government bond rate chosen is the Brazilian Bond NTN-B 2035, with a similar tenor of the project activity. The yield is based on the inflation rate (*IPCA - Indice Nacional de Preços ao Consumidor Amplo*) increased by a fixed rate at the moment of the acquisition.[4] The fixed rate used for the benchmark calculation was based on the average of the 3 years prior to the project investment decision (i.e. 2007, 2008 and 2009[5]), resulting in 6.89%. The inflation rate was considered in this analysis, as the investment analysis is done in real terms. The detail of the calculation of the Brazilian Bond NTN-B 2035 is as follows:

Table 6 - Brazilian Bond Rate calculation

Year	Average
2007	6,71%
2008	7,24%
2009	6,72%
Average of the three years	**6,89%**

Market Risk Premium

In order to calculate this spread, the project participants used the risk premium calculated by the average historical difference between the US T-bonds and the S&P 500. This would result in a Market risk premium of 6.03%.[6]

Unlevered Beta

To estimate the risk in investing in a power generation project, the project participants have adopted the beta of all utilities (0.48)[7] rather than the beta of companies with the same risk profile (such as public held companies with the same portfolio), because this would result in a complex comparison (data gathering, calculation, referencing and so on). Additionally this approach is deemed conservative as most of the utilities operate with widely known technologies, less risky than wind power projects.

[4] Source: http://www.tesouro.fazenda.gov.br/tesouro_direto/consulta_titulos/consultatitulos.asp, accessed on 04 January 2011.

[5] Source: http://www.tesouro.fazenda.gov.br/tesouro_direto/historico.asp, accessed on 04 January 2011

[6] http://www.stern.nyu.edu/~adamodar/pc/datasets/histretSP.xls

[7] http://www.stern.nyu.edu/~adamodar/pc/datasets/totalbeta.xls

The details of the calculation of the Unlevered Beta for all the utilities are as follows:

Table 7 - Unlevered Beta calculation

Industry Name	*Number of Firms*	*Unlevered Beta corrected for cash*
Electric Util. (Central)	23	0,46
Electric Utility (East)	25	0,49
Electric Utility (West)	14	0,49
	Average	**0,48**

Inflation rate (IPCA)
In order to calculate the benchmark in nominal terms, the project participants added the country inflation rate or IPCA to the benchmark in real terms. The IPCA is a rise in the general level of prices of goods and services in a Brazilian economy over a period of time; this 4.60% value is provided by the Brazilian Institute of Geography and Statistics (IBGE).

With these input data, the benchmark was calculated as follows:

Table 8 - Benchmark value

Benchmark OWPPP2		
A	Brazilian Government Bond Rate NTN-B, maturity 2035 (maturity similar to the project lifetime, real terms)	6.89%
B	Market Risk Premium (S&P 500 - T-Bonds)	6.03%
C	Unlevered Beta (electricity utilities)	0.48
D = A + B x C	**Benchmark - Real Terms**	9.78%
E	Inflation rate (IPCA)	4.60%
D = A + B x C + E	**Benchmark - Nominal Terms**	14.38%

However, the version 04 of "Guidelines on the assessment of investment analysis" presents in its appendix the default values for the return on equity for all countries. For Brazil, the project host country, this guideline classifies this country within the Baa3 level in Moody's rating for bonds scale. Additionally the project activity is included in group 1 of this assessment for be included in the Energy generation industry.

Considering all these premises, the return on equity in real terms for this project activity is 11.75% but considering this value in nominal terms with an inflation rate of +4.6%, the return on equity reaches the value of 16.35%.

Given that this tool was not available when the project participants took the decision to start the project; this option had not been taken into consideration. However, project participants consider appropriate to maintain the old value of 14.38% with the intention of having a more conservative approach, as it is in fact less than 16.35%, calculated with this new tool.

Outcome of Step 2b: The benchmark for this project is 14.38%.

Sub-step 2c: Calculation and comparison of financial indicators

This analysis is based on confidential information and its details have only been made available to the Designated Operational Entity.

The following assumptions were made for the purpose of the calculation of the financial indicators:

Table 9 - Financial values and taxes for OWPPP2

	Sangradouro 2	Sangradouro 3	Osorio 2	Osorio 3
Electricity tariff [BRL/MWh]	149.99	149.99	149.99	137.79
PPA length [years]	20	20	20	20
Installed capacity [MW]	26	24	24	26
Net electricity generation [MWh]	90,760	82,544	84,196	91,428
Operational lifetime [years]	20	20	20	20
Load Factor [%]	39.8	39.3	40	40.1
Taxes (PIS/Cofins)	9.25%	9.25%	9.25%	9.25%
Taxes (Income / CSSL)	34%	34%	34%	34%
TJLP[8]	6%	6%	6%	6%
Financial spread	2%	2%	2%	2%
IPCA (Brazilian inflation rate)	Avg 4.6%	Avg 4.6%	Avg 4.6%	Avg 4.6%
Eurozone inflation	Avg 1.5%	Avg 1.5%	Avg 1.5%	Avg 1.5%
Equity share	35%	35%	35%	35%
Debt share	65%	65%	65%	65%
Crediting Period [years]	7	7	7	7
Total static investment [R$]	115,390,191	106,730,863	110,567,891	116,671,704
O&M [R$/MWh]	17	17	17	17
TUST[9] [R$/MW]	16,824	16,824	16,824	16,824
Other expenses [% Revenue]	7.04%	7.04%	7.04%	7.04%
CDI%	9.27%	9.27%	9.27%	9.27%

BNDES financing conditions for alternative energy projects, which include wind projects, are: *TJLP + BNDES remuneration (0.9%) + Credit Risk (up to 3.57%)*, as stated in http://www.bndes.gov.br/SiteBNDES/bndes/bndes_pt/Institucional/Apoio_Financeiro/Produtos/FINEM/energias_alternativas.html. PPs have considered 2% for credit risk (much lower than 3.57%). The value presented is conservative.

Based on these values, the following financial analysis was made:

[8] TJLP(Lon-term interest rate)

[9] TUST (tax due to the use of the transmission system)

Table 10 - Cashflow for OWPPP2

Results demonstration	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total revenue	-	-	**32.960.573**	**58.840.051**	**61.487.854**	**64.254.807**	**67.146.273**	**70.167.856**	**73.325.409**	**76.625.053**	**80.073.180**
PIS/COFINS (lucro Real)	-	0	-2.485.520	-4.429.360	-4.628.682	-4.835.624	-5.053.227	-5.280.622	-5.518.250	-5.766.571	-6.026.067
Net revenue	-	-	**30.475.053**	**54.410.691**	**56.859.172**	**59.419.183**	**62.093.047**	**64.887.234**	**67.807.159**	**70.858.481**	**74.047.113**
Power MW		0,0	58,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Energy MWh		0	201.943	348.910	348.910	348.910	348.910	348.910	348.910	348.910	348.910
TUST	-	-	-1.071.712	-1.932.778	-2.019.753	-2.026.086	-2.117.259	-2.144.036	-2.240.518	-2.341.341	-2.446.702
O&M	-	-	-3.770.489	-6.814.202	-7.120.841	-7.441.279	-7.776.137	-8.126.063	-8.491.736	-8.873.864	-9.273.187
Other variable costs	-	-	-2.319.602	-4.140.872	-4.327.211	-4.536.515	-4.740.658	-4.953.988	-5.176.917	-5.409.878	-5.653.323
Operational costs	-	-	**-7.161.803**	**-12.887.852**	**-13.467.805**	**-14.003.879**	**-14.634.054**	**-15.224.087**	**-15.909.171**	**-16.625.083**	**-17.373.212**
EBITDA	-	-	**23.313.250**	**41.522.839**	**43.391.367**	**45.415.304**	**47.458.993**	**49.663.147**	**51.897.988**	**54.233.398**	**56.673.901**
Depreciation		-	-13.462.526	-23.243.366	-23.243.366	-23.243.366	-23.243.366	-23.243.366	-23.243.366	-23.243.366	-23.243.366
EBIT	-	-	**9.850.724**	**18.279.473**	**20.148.001**	**22.171.938**	**24.215.626**	**26.419.781**	**28.654.622**	**30.990.032**	**33.430.535**
Financial expenses	-	-	-13.170.184	-24.902.112	-23.246.570	-21.591.028	-19.935.486	-18.279.944	-16.624.402	-14.968.860	-13.313.318
Financial revenues	-	-0	990.522	1.813.721	1.690.024	1.929.699	2.369.910	2.952.289	3.681.942	4.298.743	4.717.213
Capital interests		-	-	-	-	-1.142.327	-3.025.773	-5.046.917	-7.149.034	-9.245.561	-9.574.139
Financial result	-	**-0**	**-12.179.663**	**-23.088.391**	**-21.556.546**	**-20.803.656**	**-20.591.349**	**-20.374.572**	**-20.091.494**	**-19.915.678**	**-18.170.244**
LAIR	-	**-0**	**-2.328.939**	**-4.808.918**	**-1.408.545**	**1.368.282**	**3.624.277**	**6.045.209**	**8.563.128**	**11.074.354**	**15.260.290**
IR e CS	-	-	-	-	-	-465.216	-1.232.254	-2.055.371	-2.911.464	-3.765.280	-5.188.499
Net profit	-	**-0**	**-2.328.939**	**-4.808.918**	**-1.408.545**	**903.066**	**2.392.023**	**3.989.838**	**5.651.665**	**7.309.073**	**10.071.792**
EBITDA	-	-	**23.313.250**	**41.522.839**	**43.391.367**	**45.415.304**	**47.458.993**	**49.663.147**	**51.897.988**	**54.233.398**	**56.673.901**
Deferral of revenue collection	-	-	-2.746.714	-2.156.623	-220.650	-230.579	-240.956	-251.799	-263.129	-274.970	-287.344
Deferral of PIS/COFINS payment	-	-	207.127	161.987	16.610	17.245	18.134	18.950	19.802	20.693	21.625
Deferral of expenses payment		-	596.817	477.171	48.329	44.673	52.515	49.169	57.090	59.659	62.344
Cashflow operations	-	-	**21.370.479**	**40.005.374**	**43.235.656**	**45.246.642**	**47.288.685**	**49.479.467**	**51.711.752**	**54.038.780**	**56.470.526**
Interests collection	-	-0	990.522	1.813.721	1.690.024	1.929.699	2.369.910	2.952.289	3.681.942	4.298.743	4.717.213
Investments	-44.767.100	-224.309.401	-180.284.147	-	-	-	-	-	-	-	-
Taxes over EBT	-	-	-	-	-	-465.216	-1.232.254	-2.055.371	-2.911.464	-3.765.280	-5.188.499
Financial activities cash flow	**-44.767.100**	**-224.309.401**	**-157.923.146**	**41.819.095**	**44.925.681**	**46.711.126**	**48.426.341**	**50.376.386**	**52.482.230**	**54.572.243**	**55.999.240**
Initial cash	-	-	-	22.361.001	7.598.495	8.997.215	12.694.595	17.879.286	24.648.420	30.151.666	33.747.756
Capital expenditures	15.668.485	78.508.290	63.099.451	-	-	-	-	-	-	-	-
Debt expenditures	29.098.615	145.801.111	117.184.695	-	-	-	-	-	-	-	-
Cash before Debt Service	-	-	22.361.001	64.180.096	52.524.176	55.708.341	61.120.936	68.255.672	77.130.650	84.723.909	89.746.996
Debt Service	-	-	-	-45.596.388	-43.940.846	-42.285.304	-40.629.762	-38.974.220	-37.318.678	-35.663.136	-34.007.594
Alocation in saving account	-	-	-	-10.985.212	413.886	413.886	413.886	413.886	413.886	413.886	413.886
Free cash after service debt (in	-	-	**22.361.001**	**7.598.495**	**8.997.215**	**13.836.922**	**20.905.059**	**29.695.337**	**40.225.857**	**49.474.659**	**56.153.287**
Shareholders distribution	-	-	-	-	-	-1.142.327	-3.025.773	-5.046.917	-10.074.191	-15.726.903	-18.663.635
Final cash	-	-	**22.361.001**	**7.598.495**	**8.997.215**	**12.694.595**	**17.879.286**	**24.648.420**	**30.151.666**	**33.747.756**	**37.489.653**
Total distribution to shareholde	-	-	-	-	-	**1.142.327**	**3.025.773**	**5.046.917**	**10.074.191**	**15.726.903**	**18.663.635**
Capital Expenditures	-15.668.485	-78.508.290	-63.099.451	0	0	0	0	0	0	0	0
Salvage value	-	-	-	-	-	-	-	-	-	-	-
Cash flow to Equity	-15.668.485	-78.508.290	-63.099.451	-	-	1.142.327	3.025.773	5.046.917	10.074.191	15.726.903	18.663.635
FCFE	-15.668.485	-78.508.290	-63.099.451	-	-	1.142.327	3.025.773	5.046.917	10.074.191	15.726.903	18.663.635

Continuing….

2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
83.676.473	**87.441.914**	**91.376.800**	**95.488.756**	**99.785.751**	**104.276.109**	**108.968.534**	**113.872.118**	**118.996.364**	**124.351.200**	**129.947.004**	**56.227.076**
-6.297.240	-6.580.616	-6.876.743	-7.186.197	-7.509.576	-7.847.507	-8.200.644	-8.569.673	-8.955.309	-9.358.298	-9.779.421	-4.221.066
77.379.233	**80.861.299**	**84.500.057**	**88.302.560**	**92.276.175**	**96.428.603**	**100.767.890**	**105.302.445**	**110.041.055**	**114.992.902**	**120.167.583**	**52.006.009**
100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	42,0
348.910	348.910	348.910	348.910	348.910	348.910	348.910	348.910	348.910	348.910	348.910	146.968
-2.556.803	-2.671.860	-2.792.093	-2.917.737	-3.049.036	-3.186.242	-3.329.623	-3.479.456	-3.636.032	-3.799.653	-3.970.637	-1.742.713
-9.690.481	-10.126.553	-10.582.247	-11.058.449	-11.556.079	-12.076.102	-12.619.527	-13.187.406	-13.780.839	-14.400.977	-15.049.021	-6.624.184
-5.907.722	-6.173.570	-6.451.381	-6.741.693	-7.045.069	-7.362.097	-7.693.391	-8.039.594	-8.401.376	-8.779.438	-9.174.512	-3.969.741
-18.155.007	**-18.971.982**	**-19.825.721**	**-20.717.879**	**-21.650.183**	**-22.624.442**	**-23.642.541**	**-24.706.456**	**-25.818.246**	**-26.980.067**	**-28.194.170**	**-12.336.639**
59.224.226	**61.889.317**	**64.674.336**	**67.584.681**	**70.625.992**	**73.804.161**	**77.125.348**	**80.595.989**	**84.222.809**	**88.012.835**	**91.973.413**	**39.669.371**
-23.243.366	-23.243.366	-23.243.366	-23.243.366	-23.243.366	-23.243.366	-23.243.366	-23.243.366	-23.243.366	-23.243.366	-23.243.366	-9.780.840
35.980.860	**38.645.950**	**41.430.970**	**44.341.315**	**47.382.625**	**50.560.795**	**53.881.982**	**57.352.623**	**60.979.442**	**64.769.469**	**68.730.046**	**29.888.531**
-11.657.776	-10.002.233	-8.346.691	-6.691.149	-5.035.607	-3.380.065	-1.724.523	-241.433	-	-	-	-
5.148.096	5.595.780	6.060.797	6.543.702	7.045.074	7.565.517	8.105.662	9.133.121	2.963.572	3.055.738	3.153.025	1.561.573
-9.633.077	-9.701.256	-9.778.945	-9.866.427	-9.963.995	-10.071.954	-10.190.625	-10.320.341	-5.173.636	-3.797.168	-2.421.517	-1.046.717
-16.142.757	**-14.107.710**	**-12.064.840**	**-10.013.874**	**-7.954.528**	**-5.886.502**	**-3.809.486**	**-1.428.653**	**-2.210.064**	**-741.430**	**731.509**	**514.855**
19.838.103	**24.538.241**	**29.366.130**	**34.327.440**	**39.428.098**	**44.674.293**	**50.072.496**	**55.923.970**	**58.769.378**	**64.028.038**	**69.461.555**	**30.403.386**
-6.744.955	-8.343.002	-9.984.484	-11.671.330	-13.405.553	-15.189.260	-17.024.649	-19.014.150	-19.981.589	-21.769.533	-23.616.929	-10.337.151
13.093.148	**16.195.239**	**19.381.646**	**22.656.111**	**26.022.544**	**29.485.033**	**33.047.847**	**36.909.820**	**38.787.790**	**42.258.505**	**45.844.626**	**20.066.235**
59.224.226	**61.889.317**	**64.674.336**	**67.584.681**	**70.625.992**	**73.804.161**	**77.125.348**	**80.595.989**	**84.222.809**	**88.012.835**	**91.973.413**	**39.669.371**
-300.274	-313.787	-327.907	-342.663	-358.083	-374.197	-391.035	-408.632	-427.020	-446.236	-466.317	6.143.327
22.598	23.615	24.677	25.788	26.948	28.161	29.428	30.752	32.136	33.582	35.094	-463.196
65.150	68.081	71.145	74.346	77.692	81.188	84.842	88.660	92.649	96.818	101.175	-1.321.461
59.011.699	**61.667.226**	**64.442.251**	**67.342.152**	**70.372.549**	**73.539.314**	**76.848.583**	**80.306.769**	**83.920.574**	**87.696.999**	**91.643.364**	**44.028.041**
5.148.096	5.595.780	6.060.797	6.543.702	7.045.074	7.565.517	8.105.662	9.133.121	2.963.572	3.055.738	3.153.025	1.561.573
-	-	-	-	-	-	-	-	-	-	-	-
-6.744.955	-8.343.002	-9.984.484	-11.671.330	-13.405.553	-15.189.260	-17.024.649	-19.014.150	-19.981.589	-21.769.533	-23.616.929	-10.337.151
57.414.840	**58.920.003**	**60.518.564**	**62.214.524**	**64.012.070**	**65.915.571**	**67.929.596**	**70.425.741**	**66.902.557**	**68.983.204**	**71.179.461**	**35.252.462**
37.489.653	41.376.412	45.412.122	49.601.042	53.947.616	58.456.476	63.132.453	70.524.258	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
94.904.493	100.296.416	105.930.685	111.815.566	117.959.686	124.372.047	131.062.049	140.949.998	66.902.557	68.983.204	71.179.461	35.252.462
-32.352.052	-30.696.510	-29.040.968	-27.385.425	-25.729.883	-24.074.341	-22.418.799	-10.588.571	-	-	-	-
413.886	413.886	413.886	413.886	413.886	413.886	2.957.557	2.647.143	-	-	-	-
62.966.326	**70.013.792**	**77.303.603**	**84.844.026**	**92.643.688**	**100.711.591**	**111.600.807**	**133.008.570**	**66.902.557**	**68.983.204**	**71.179.461**	**35.252.462**
-21.589.914	-24.601.670	-27.702.561	-30.896.411	-34.187.212	-37.579.138	-41.076.549	-133.008.570	-66.902.557	-68.983.204	-71.179.461	-35.252.462
41.376.412	**45.412.122**	**49.601.042**	**53.947.616**	**58.456.476**	**63.132.453**	**70.524.258**	-	-	-	-	-
21.589.914	**24.601.670**	**27.702.561**	**30.896.411**	**34.187.212**	**37.579.138**	**41.076.549**	**133.008.570**	**66.902.557**	**68.983.204**	**71.179.461**	**35.252.462**
0	0	0	0	0	0	0	0	0	0	0	0
-	-	-	-	-	-	-	-	-	-	-	-
21.589.914	24.601.670	27.702.561	30.896.411	34.187.212	37.579.138	41.076.549	133.008.570	66.902.557	68.983.204	71.179.461	35.252.462
21.589.914	24.601.670	27.702.561	30.896.411	34.187.212	37.579.138	41.076.549	133.008.570	66.902.557	68.983.204	71.179.461	35.252.462

Post Tax Equity IRR	**9.99%**

The investment analysis shows that the CDM project activity has a less favorable indicator (IRR= 9.99%, excluding CER revenue) than the defined benchmark (14.38% p.a.). As a result, the CDM project activity cannot be considered the most economically or financially attractive.

Outcome of Step 2c: The post tax equity IRR for this project is 9.99%.

Sub-step 2d: Sensitivity analysis

A sensitivity analysis was conducted by altering the following parameters:

- Variation of Capital Expenditures (CapEx);
- Variation of Operational Expenses (OpEx);
- Project revenue (Revenue).

These variables were subjected to both negative and positive variations of the same magnitude because they are likely to fluctuate over time, and constitute more than 20% of either total project costs or total project revenues.

Sensitivity analysis was performed by first changing each of these parameters by +/-10%, and assessing the impact on the equity IRR. The results and the assessment of the likelihood of varying each parameter are presented below:

Table 11 - Sensitivity analysis

	Variation	IRR Equity
CapEx	-10%	12.57%
	10%	8.29%
OpEx	-10%	10.54%
	10%	9.44%
Revenue	-10%	7.54%
	10%	12.21%
Base Case	0%	9.99%

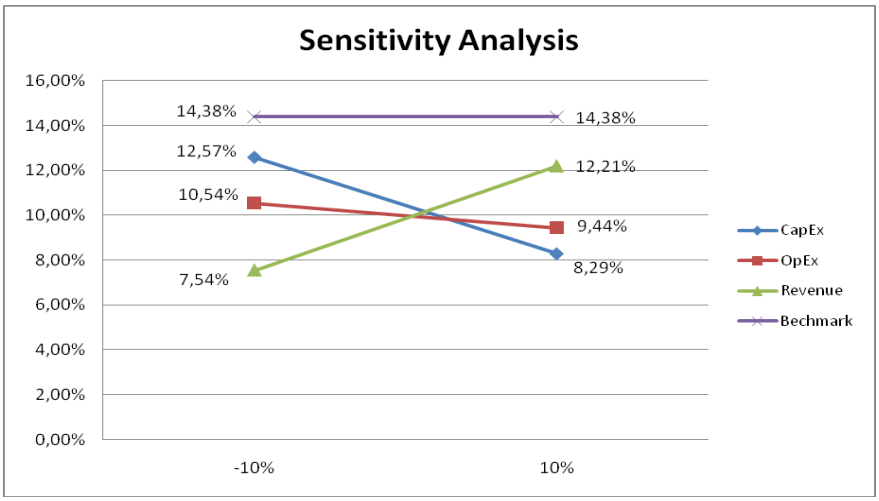

Figure 2 - Sensitivity analysis

As per the data presented above, this project is not deemed financially attractive, as the IRR does not reach the benchmark, even with the variation of 10% of the main value drivers.

The IRR would only reach the benchmark if:

- Revenues were significantly increased to BRL 39.6 million (2012 value) (Revenue increased due to inflation only). As the energy price is fixed by the PPA, this is only possible if the power generation reaches 418.8 GWh/y, which is 21% more than the greatest value presented by the wind study of DEWI (P50 – 349 GWh/y). Additionally, the uncertainty in energy yield is 10% as stated in the wind survey[10] so even enhancing this sensitivity variation up to 20% due to the uncertainty, the project is still far from the benchmark. Consequently, it is not a reasonable assumption that this generation volume will be reached on a regular basis.

- The Capex were reduced to BRL 38.1 million, a variation of -14.79%. As the main expenditure is the purchase of the WECs and their price has not significantly changed since the project starting date, the reduction of 14.79% from the budgeted capital expenditures is not a reasonable assumption. On the contrary, it is always possible and quite common that the Capital Expenditures increase due to cost overruns.

- O&M costs were reduced 84.90%. As the main cost is the maintenance of the WECs and their price has not significantly changed since the project starting date, the reduction of 84.90% from the budgeted maintenance costs is not a reasonable assumption.

These results show that only with highly unrealistic and very favourable circumstances it would be possible to reach the equity IRR benchmark. In reality, circumstances are typically more unfavourable than projected and the IRR would decrease even further away from the benchmark.
Outcome of Step 2d: It is concluded that the IRR is lower than the benchmark for a realistic range of assumptions for the input parameters of the sensitivity analysis, and therefore that the Project "is unlikely to be financially/economically attractive" as defined by the Additionality Tool.

Step 3. Barrier analysis

Sub-step 3a: Identify barriers that would prevent the implementation of the proposed CDM projects activity:

Outcome of Step 3a: The Project Participants have decided not to present a Barrier Analysis since an Investment Analysis has been already presented in Step 2.

Step 4. Common practice analysis

In accordance with the "Tool for the demonstration and assessment of additionality", Projects are considered similar to the project activity if they are in the same country/region and/or rely on a broadly

[10] DEWI-GER-WP10-00563-01 01_v04_PDF.pdf

similar technology, are of similar scale and take place in a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing, etc.

Sub-step 4a: Analyse other activities similar to the proposed project activity:

The "Tool for the demonstration and assessment of additionality" clearly states that common practice analysis shall include "*any other activities that are operational and that are similar to the proposed project activity*." Therefore, the project activity will be compared to all 51 wind farms in operation in Brazil.

According to ANEEL, there are currently 51[11] wind farms operating in Brazil, 18 under construction, and 97 with licenses but not under construction yet. The fifty one projects in operation have a total installed capacity of 924,5 MW, which represents only 0.76% of the country's electricity supply.

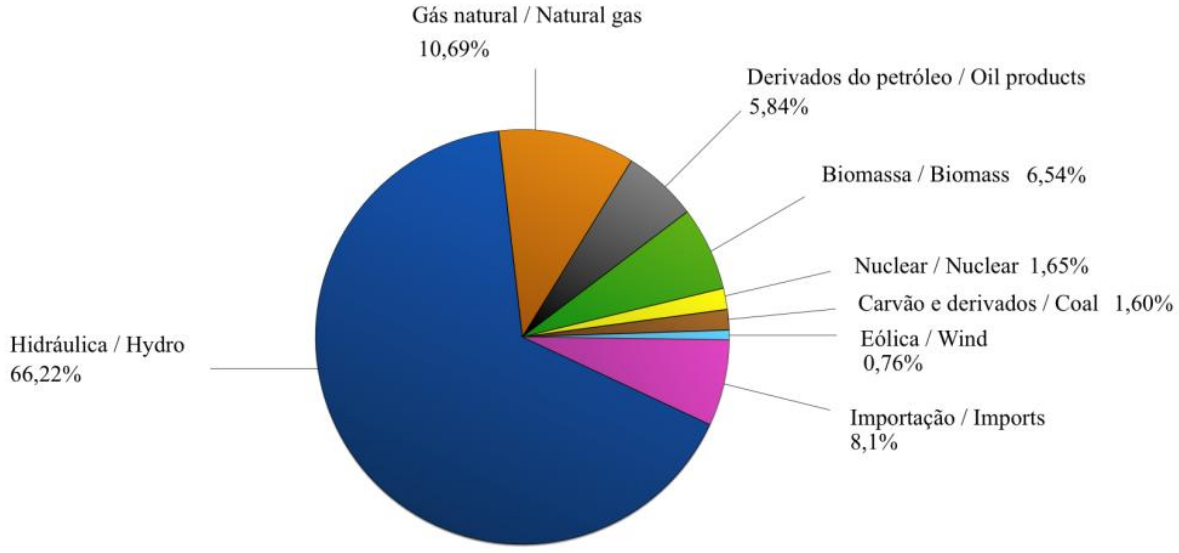

Figure 3 - Electricity supply sources in Brazil (Source: ANEEL)

The table below lists all wind projects in operation in Brazil today.

Table 12 - List of projects in operation

Plant	Installed capacity (MW)	State of Brazil	PROINFA	CDM	CDM Status
Praia Formosa	104.4	CE	YES[1]	YES[2]	Validation
Canoa Quebrada	57	CE	YES[1]	YES[3]	Validation
Eólica Icaraizinho	54.6	CE	YES[1]	YES[2]	Validation
Parque Eólico de Osório	50	RS	YES[1]	YES[6]	Registered

[11] http://www.aneel.gov.br/aplicacoes/capacidadebrasil/GeracaoTipoFase.asp?tipo=7&fase=3

Parque Eólico Sangradouro	50	RS	YES[1]	YES[6]	Registered
Parque Eólico dos Indios	50	RS	YES[1]	YES[6]	Registered
Parque Eólico de Palmares	8	RS	NO	YES	Prior consideration
Bons Ventos	50	CE	YES[1]	NO	-
Alegria I	51	RN	YES[1]	NO	-
RN – Rio do Fogo	49.3	RN	YES[1]	NO	-
Volta do Rio	42	CE	YES[1]	NO	-
Parque Eólico Enacel	31.5	CE	YES[1]	NO	-
Eólica Praias de Parajuru	28.804	CE	YES[1]	NO	-
Praia do Morgado	28.8	CE	YES[1]	NO	-
Gargaú	28.05	RJ	YES[1]	YES[7]	Validation
Parque Eólico de Beberibe	25.6	CE	YES[1]	NO	-
Foz do Rio Choró	25.2	CE	YES[1]	YES[2]	Validation
Eólica Paracuru	23.4	CE	YES[1]	YES[2]	Validation
Pedra do Sal	18	PI	YES[1]	NO	-
Taíba Albatroz	16.5	CE	YES[5]	NO	-
Eólica canoa Quebrada	10.5	CE	YES[1]	NO	-
Millennium	10.2	PB	YES[1]	NO	-
Eólica de Prainha	10	CE	NO	NO	-
Eólica Água Doce	9	SC	YES[1]	YES[5]	Registered
Eólica de Taíba	5	CE	NO	NO	-
Pirauá	4.95	PE	YES[1]	NO	-
Xavante	4.95	PE	YES[1]	NO	-
Mandacaru	4.95	PE	YES[1]	NO	-
Santa Maria	4.95	PE	YES[1]	NO	-
Gravatá Fruitrade	4.95	PE	YES[1]	NO	-
Parque Eólico do Horizonte	4.8	SC	NO	YES	Registered
Vitória	4.5	PB	YES[1]	NO	-
Presidente	4.5	PB	YES[1]	NO	-
Camurin	4.5	PB	YES[1]	NO	-
Albatroz	4.5	PB	YES[1]	NO	-
Coelhos I	4.5	PB	YES[1]	NO	-
Coelhos II	4.5	PB	YES[1]	NO	-
Coelhos III	4.5	PB	YES[1]	NO	-
Coelhos IV	4.5	PB	YES[1]	NO	-
Atlântica	4.5	PB	YES[1]	NO	-
Caravela	4.5	PB	YES[1]	NO	-
Mataraca	4.5	PB	YES[1]	NO	-
Lagoa do Mato	3.23	CE	YES[1]	YES[3]	Validation
Eólio – Eletrica de Palmas	2.5	PR	NO	NO	-
Mucuripe	2.4	CE	NO	NO	-
Macau	1.8	RN	NO	YES[4]	Registered
Eólica de Bom Jardim	0.6	SC	YES[1]	NO	-
Eólica de Fernando de Noronha	0.225	PE	NO	NO	-
Eólica Olinda	0.225	PE	NO	NO	-
Alhandra	2.1	PB	YES[1]	NO	-
IMT	0.0022	PR	NO	NO	-

1 – Eletrobras site, PROINFA approved projects: http://www.eletrobras.gov.br/ELB/services/eletrobras/ContentManagementPlus/FileDownload.ThrSvc.asp?DocumentID={9B6832B3-F317-4BF6-A663-E466A250B8A7}&ServiceInstUID={9C2100BF-1555-4A9D-B454-2265750C76E1}&InterfaceInstUID={18F15ED9-1E73-4990-8CC6-F385CE19FF17}&InterfaceUID={72215A93-CAA7-4232-A6A1-2550B7CBEE2F}&ChannelUID={B38770E4-2FE3-41A2-9F75-DFF25AF92DED}&PageUID={ABB61D26-1076-42AC-8C5F-64EB5476030E}&BrowserType=IE&BrowserVersion=6 (Accessed 10 December 2010).
2 – CDM project - Icaraí Wind Energy Project: http://cdm.unfccc.int/Projects/Validation/DB/HSLJUUZ9G0RMHT1A6S1F14IMVIZ45B/view.html (Accessed 10 December 2010).
3 – CDM project - Rosa dos Ventos Wind Energy Project: http://cdm.unfccc.int/Projects/Validation/DB/HMOI5ZUNC27YH7DVBYBCFCRPUZWQ09/view.html (Accessed 10 December 2010).
4 – CDM project – Horizonte Wind Power Generation Project: http://cdm.unfccc.int/Projects/DB/SGS-UKL1151534607.76/view (Accessed 10 December 2010).
5 – CDM project – Água Doce Wind Power Generation Project: http://cdm.unfccc.int/Projects/DB/SGS-UKL1156244716.38/view (Accessed 10 December 2010).
6 – CDM project – Osório Wind Power Plant Project: http://cdm.unfccc.int/Projects/DB/DNV-CUK1158843861.54/view (Accessed 10 December 2010).
7 – CDM project – Gargaú Wind Power Plant: http://cdm.unfccc.int/Projects/Validation/DB/J6EQPTU2VOQJKGG6LHWEERQVH5Z72F/view.html (Accessed 10 December 2010).

Sub-step 4b: Discuss any similar Options that are occurring:

Table 12 shows all wind power plants in operation, including those that received incentives from the PROINFA program. The PROINFA was created in April of 2002 by means of the law 10,438, which had the objective of increasing the development of renewable energy projects in Brazil. The project types considered in this program were hydro, biomass, and wind energy projects. This program guaranteed a 20-year power purchase agreement, with an initial price that was above market prices at the time. The PROINFA program is not expected to be expanded and the projects under development today do not enjoy similar benefits. Therefore, PROINFA projects cannot be considered similar to OWPPP2.

Furthermore, in accordance to the "Tool for the demonstration and assessment of additionality", "*other CDM project activities (registered project activities and project activities which have been published on the UNFCCC website for global stakeholder consultation as part of the validation process) are not included in this analysis*".
By removing the PROINFA and CDM projects from table 12, the list is reduced to the following projects in table 13:

Table 13 - List of projects in operation that are not PROINFA nor CDM projects

Plant	Installed capacity (MW)	State	Owner	Start of operation
Eólica de Prainha	10	CE	Wobben Wind Power Industria e Comercio Ltda.	1/1/1999
Eólica de Taíba	5	CE	Wobben Wind Power Industria e Comercio Ltda.	1/12/1998
Eólio – Eletrica de Palmas	2.5	PR	Centrais Eólicas do Paraná Ltda	1/1/1999
Mucuripe	2.4	CE	Wobben Wind Power Industria e Comercio Ltda.	1/1/2002
Eólica de Fernando de Noronha	0.225	PE	Centro Brasileiro de Energia Eólica - FADE/UFPE	1/1/2001
Eólica Olinda	0.225	PE	Centro Brasileiro de Energia Eólica - FADE/UFPE	1/1/1999
IMT	0.002	PR	Electra Power Geração de Energia Ltda	

Table 13 shows seven wind plants, which belong to four different entities. These plants totalize 20.352 MW, which represents 2.2% of the total wind power installed in Brazil, and 20.3% of OWPPP2:

- *Wobben Wind Power Industria e Comercio Ltda*[12] is a wind turbine manufacturer (ENERCON) which developed 4 projects in Brazil (17,4 MW). These projects were among the first developed in Brazil, and served to promote Wobben's products. Therefore, projects developed by Wobben cannot be considered similar to OWPPP2;

- *Centrais Eólicas do Paraná Ltda*[13] is owned 100% by COPEL, a state-owned utility, therefore its project cannot be compared to projects developed by private companies since state-owned companies may develop projects for other reasons other than financial return and their risk evaluation is considerably different. Also, its project was developed in 1999 and it is quite small (40 times smaller than OWPPP2);

- *Centro Brasileiro de Energia Eólica - FADE/UFPE* is a government entity related to a federal university. Therefore, its projects are demonstrative academic projects (400 times smaller than OWPPP2) and they are not relevant as wind generators;

- *Electra Power Geração de Energia Ltda*[14] *is a private company, but its wind project IMT is extremely small. It is a wind project was installed for R&D purposes only.*

[12] http://www.wobben.com.br/

[13] http://www.copel.com/hpcopel/root/nivel2.jsp?endereco=%2Fhpcopel%2Froot%2Fpagcopel2.nsf%2Fdocs%2F950F73FF30B18CD2032574020061FAB7

[14] http://www.electrapower.com.br/

All projects listed in Table 13 were developed by entities quite different from OWPPP2's developers and/or the projects are of much smaller scale when compared to OWPPP2.

Outcome of Step 4: Therefore, since no similar activities were observed, the proposed project activity is additional.

B.6. Emission reductions:

B.6.1. Explanation of methodological choices:

In order to calculate the ex-ante estimation of emission reductions for the first crediting period, estimated figures were used for parameters that are not available at validation or that will be monitored during the crediting period.

Project Emissions

$PE_y = PE_{FF,y} + PE_{GP,y} + PE_{HP,y}$

Where:

PE_y = Project emissions in year *y* (tCO_2e/yr);
PE_{FFy} = Project emissions from fossil fuel consumption in year y (tCO_2/yr);
$PE_{GP,y}$ = Project emissions from the operation of geothermal power plants due to the release of non-condenate gases in year y (tCO_2e/yr);
$PE_{HP,y}$ = Project emissions from water reservoirs of hydro power plants in year y (tCO_2e/yr);

PWPP is a wind power plant, without fossil fuel consumption. Consequently, $PE_{FF,y} = 0$ (no fossil fuel consumption), $PE_{GP,y} = 0$ (this project is not a geothermal power plant) and $PE_{HP,y} = 0$ (this project is not a hydro power plant).

Baseline emissions

Baseline emissions include only CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:

$BE_y = EG_{PJ,y} \cdot EF_{grid,CM,y}$

Where:

BE_y = Baseline emissions in year *y* (tCO_2/yr);
$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year *y* (MWh/yr);

$EF_{grid,CM,y}$ = Combined margin CO_2 emission factor for grid connected power generation in year *y* calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (tCO_2/MWh);

The calculation of $EG_{PJ,y}$ is different for (a) Greenfield plants, (b) retrofits and replacements, and (c) capacity additions. The project is a Greenfield plant; consequently option (a) will be used:

(a) Greenfield renewable energy power plants

If the project activity involves the installation of a grid-connected renewable power plant/unit at a site where no renewable power plant was operated prior to the implementation of the project activity, then:

$EG_{PJ,y} = EG_{facility,y}$

Where:

$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year *y* (MWh/yr);
$EG_{facility,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in the year *y* (MWh/yr)

Leakage

No leakage emissions are considered. The main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction processing, transport). These emissions sources are neglected.

Emission reductions

Emission reductions are calculated as follows:

$ER_y = BE_y – PE_y$

Where:
ER_y = Emission reductions in year y (tCO_2e/yr);
BE_y = Baseline emissions in year y (tCO_2/yr);
PE_y = Project emissions in year y (tCO_2e/yr);

As $PE_y = 0$, the emission reductions will be calculated as:

$ER_y = BE_y$

$BE_y = EG_{PJ,y} \cdot EF_{grid,CM,y}$

The baseline emission factor (EFgrid,CM,y) is calculated as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) factors. Calculations for this combined margin were based on data from an official source and made publicly available.

The emission reductions derived from the displacement of fossil fuels used for electricity generation from other sources are estimated for the Brazilian Interconnected System using the "Tool to Calculate the Emission Factor for an Electricity System" version 2, as follows.

Step 1. Identify the relevant electric power system

For determining the electricity emission factors, a project electricity system is defined by the spatial extent of the power plants that are physically connected through transmission and distribution lines to the project activity (e.g. the renewable power plant location or the consumers where electricity is being saved) and that can be dispatched without significant transmission constraints.

The Brazilian DNA published an official delineation of the project electricity system in Brazil, considering a national interconnected system.[15]

Step 2. Choose whether to include off-grid power plants in the project electricity system (optional)

The selection of Option I or Option 2 is not necessary, because both Build Margin and Operating Margin are calculated and made available by the Brazilian DNA. However, no information on inclusion or exclusion of off-grid plants is available.

Step 3. Select a method to determine the operating margin (OM)

The calculation of the operating margin emission factor ($EF_{grid,OM,y}$) is based on one of the following methods:

a) Simple OM, or
b) Simple adjusted OM, or
c) Dispatch data analysis OM, or
d) Average OM.

The Brazilian DNA is responsible for calculating the OM emission factor in Brazil. It uses the method c) Dispatch data analysis OM.

For the dispatch data analysis OM, it is necessary to use the year in which the project activity displaces grid electricity and to update the emission factor annually during monitoring.

Step 4. Calculate the operating margin emission factor according to the selected method

The dispatch data analysis OM emission factor ($EF_{grid,OM-DD,y}$) is determined based on the grid power units that are actually dispatched at the margin during each hour *h* where the project is displacing electricity. This approach is not applicable to historical data and, thus, requires annual monitoring of $EF_{grid,OM-DD,y}$.

The emission factor is calculated as follows:

[15] DNA Resolution n.8 was published on 26//05/2008 at http://www.mct.gov.br/index.php/content/view/14797.html, accessed on 25/11/2010.

$$EF_{grid,OM-DD,y} = \frac{\sum_{h} EG_{PJ,h} \times EF_{EL,DD,h}}{EG_{PJ,y}}$$

Where:

$EF_{grid,OM-DD,y}$	=	Dispatch data analysis operating margin CO_2 emission factor in year y (tCO_2/MWh)
$EG_{PJ,h}$	=	Electricity displaced by the project activity in hour h of year y (MWh)
$EF_{EL,DD,h}$	=	CO_2 emission factor for power units in the top of the dispatch order in hour h in year y (tCO_2/MWh)
$EG_{PJ,y}$	=	Total electricity displaced by the project activity in year y (MWh)
h	=	Hours in year y in which the project activity is displacing grid electricity
y	=	Year in which the project activity is displacing grid electricity

The $EF_{grid,OM,DD,y}$ is displayed on the Brazilian DNA website[16], for the year 2009.

In order to estimate the emissions reductions for the first crediting period, the $EF_{EL,DD,2009}$ was calculated as a mean average of the $EF_{grid,OM,DD,y}$.

Step 5. Identify the group of power units to be included in the build margin

The Brazilian DNA is responsible for calculating the BM emission factor in Brazil.

In terms of vintage of data, project participants can choose between one of the following two options:

Option 1: For the first crediting period, calculate the build margin emission factor ex-ante based on the most recent information available on units already built for sample group m at the time of CDM-PDD submission to the DOE for validation. For the second crediting period, the build margin emission factor should be updated based on the most recent information available on units already built at the time of submission of the request for renewal of the crediting period to the DOE. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used. This option does not require monitoring the emission factor during the crediting period.

Option 2: For the first crediting period, the build margin emission factor should be updated annually, ex-post, including those units built up to the year of registration of the project activity or, if information up to the year of registration is not yet available, including those units built up to the latest year for which information is available. For the second crediting period, the build margin factor shall be calculated ex-ante, as described in option 1 above. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used.

The *Option 2* was chosen for the proposed project.

Step 6. Calculate the build margin emission factor

[16] Source: http://www.mct.gov.br/index.php/content/view/74689.html

The build margin emissions factor is the generation-weighted average emission factor (tCO_2/MWh) of all power units m during the most recent year y for which power generation data is available, calculated as follows:

$$EF_{grid,BM,y} = \frac{\sum_m EG_{m,y} \times EF_{EL,m,y}}{\sum_m EG_{m,y}}$$

This information is also available at the Brazilian DNA website.

Step 7. Calculate the combined margin emissions factor

The combined margin is calculated as follows:

$EF_{grid,CM,y} = w_{OM} * EF_{grid,OM,y} + w_{BM} * EF_{grid,BM,y}$

The default weights for Wind and Solar power generation project activities are as follows: $w_{OM} = 0.75$ and $w_{BM} = 0.25$, fixed for the first crediting period and for subsequent crediting periods.

The build margin CO_2 emission factor and operating margin CO_2 emission factor will be monitored ex-post. Therefore, the combined margin CO_2 emission factor will be ex-post.

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

Data / Parameter:	**$EF_{grid,CM,2009}$**
Data unit:	tCO_2 / MWh
Description:	Combined margin CO2 emission factor of the Brazilian grid in year 2009 using the latest version of the "Tool to calculate the emission factor for an electricity system"
Source of data used:	Calculated
Value applied:	0.2055
Justification of the choice of data or description of measurement methods and procedures actually applied :	This data will be achieved electronically and according to internal procedures, until 2 years after the end of the crediting period.
Any comment:	Calculated as weighted sum of the OM and BM emission factors, as explained in the next section.

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

The baseline emission factor (EFgrid,CM,y) is calculated as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) factors: EFgrid,OM,y and EFgrid,BM,y, respectively.

In order to calculate the ex-ante estimation of emission reductions for the first crediting period, government public data was used.

Table 14 - Operating Margin

Operation Margin [tCO_2/MWh]	
2009 ($EF_{grid,OM,y}$)	
January	0.2813
February	0.2531
March	0.2639
April	0.2451
May	0.4051
June	0.3664
July	0.2407
August	0.1988
September	0.1622
October	0.1792
November	0.181
December	0.194
Average OM	**0.2476**

Table 15 - Build Margin

Build Margin [tCO_2/MWh]	
2009 ($EF_{grid,BM,y}$)	0.0794

The Combined Margin Emission Factor is calculated as follows:

$$\mathbf{EF_{grid,CM,y}} = EF_{grid,BM,y} * w_{BM} + EF_{grid,OM,y} * w_{OM}$$

Table 16 - Emission Factor

Emission Factor		
w_{BM}	0.25	
w_{OM}	0.75	
$EF_{grid,CM,y}$	**0.2055**	**tCO_2/MWh**

The emission reductions are calculated as follows:

$$\mathbf{ER_y = EF_{grid,CM,y} * EG_{PJ,y}}$$

$$\mathbf{ER_y = 0.2055\ tCO_2/MWh * 348{,}648}^{17}\ \mathbf{MWh}$$

[17] The value 348,648 MWh is the sum of the values presented in each of the DEWI wind studies for the 4 wind farms

ER_y = 71,655 tCO_2

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

Table 17 - Ex-ante estimation of emission reduction

Year	Estimation of project activity emission (tCO_2e)	Estimation of the baseline emissions (tCO_2e)	Estimation of leakage (tCO_2e)	Estimation of emission reductions (tCO_2e)
2012	0	41,560	0	41,560
2013	0	71,655	0	71,655
2014	0	71,655	0	71,655
2015	0	71,655	0	71,655
2016	0	71,655	0	71,655
2017	0	71,655	0	71,655
2018	0	71,655	0	71,655
2019	0	17,913	0	17,913
Total (tonnes of CO_2e)	**0**	**489,403**	**0**	**489,403**

* From 01/04/2012 to 31/03/2019

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

B.7.1 Data and parameters monitored:

Data / Parameter:	**$EG_{PJ,y}$**
Data unit:	MWh
Description:	Electricity dispatched by the project activity to the grid
Source of data to be used:	Measured continuously at the project connection to the grid –CEEE (Companhia Estadual de Energia Elétrica) substation- and aggregated in hourly basis
Value of data applied for the purpose of calculating expected emission reductions in section B.5	348,648 MWh
Description of measurement methods and procedures to be applied:	Directly measured during the crediting period at the electrical substation "Osorio 2". This data will be filed electronically and according to the internal procedures, until 2 years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later. The measured information by CEEE meters is used to generate the invoices using

	the internal software of the manufacturer's energy meter. Each wind farm has an energy meter and backup meter inside "Lagoa dos Barros" substation. Meters calibration regulations and the accuracy class of 0.2% are according with ANEEL/ONS.
QA/QC procedures to be applied:	The electricity dispatched to the grid presented in the invoices could be crosschecked with each wind farm own meter, discounting transmission losses. If any previous month's reading of the main meter was inaccurate by more than the allowable error as specified in the meter data sheet for the accuracy class installed, or otherwise, functioned improperly, the electricity generated by the proposed project shall be determined by: • First, by checking the data from the backup meter, unless a test by either party reveals it is inaccurate; • If the backup meter is not within acceptable limits of accuracy or is otherwise performing improperly the proposed project owner and the electric power company CEEE shall jointly prepare an estimate of the correct reading.
Any comment:	The value 348,648 MWh is the sum of the values presented in each of the DEWI wind studies for the 4 wind farms

Data / Parameter:	**$EF_{OM,y}$**
Data unit:	tCO_2/MWh
Description:	Operating margin emission factor for the Brazilian interconnected grid in year y
Source of data to be used:	Calculated yearly during the crediting period by Brazilian DNA (CIMGC)
Value of data applied for the purpose of calculating expected emission reductions in section B.5	0.2476 tCO_2/MWh
Description of measurement methods and procedures to be applied:	Apply procedures in the "Tool to calculate the emission factor for an electricity system" Version 02.1
QA/QC procedures to be applied:	For more details about this information please refer to the following link: http://www.mct.gov.br/index.php/content/view/303076.html#ancora
Any comment:	--

Data / Parameter:	**$EF_{BM,y}$**
Data unit:	tCO_2/MWh
Description:	Build margin emission factor for the Brazilian interconnected grid in year y
Source of data to be used:	Calculated yearly during the crediting period by Brazilian DNA (CIMGC)

Value of data applied for the purpose of calculating expected emission reductions in section B.5	0.0794 tCO_2/MWh
Description of measurement methods and procedures to be applied:	Apply procedures in the "Tool to calculate the emission factor for an electricity system" Version 02.1
QA/QC procedures to be applied:	For more details about this information please refer to the following link: http://www.mct.gov.br/index.php/content/view/303076.html#ancora
Any comment:	--

B.7.2. Description of the monitoring plan:

1. Management Structure and Responsibility

Overall responsibility for daily monitoring and reporting lies with the project owner. A staff dedicated to the project will assure that the monitoring procedures will be followed correctly (data recording and archiving, quality assurance and quality control of the data, equipment's calibration, scheduled and unscheduled maintenances and adoption of corrective actions, if needed).

1.1 Management Structure

The manager of the proposed project will hold the overall responsibility for the monitoring process, including the follow-up of daily operations informed by the wind farm supervisor, definition of personnel involved with the monitoring work, revision of the monitored results/data, and quality assurance of measurements and the process of training new staff.

1.2 Responsibility of the personnel directly involved:

The personnel involved with monitoring will be responsible for carrying out the following tasks:

- Supervise and verify metering and recording of data, including power delivered to the grid;
- Collection of additional data, sales/invoices;
- Calibration of the metering instruments in accordance to ANEEL/ONS regulations and manufacturer specifications;
- Monitoring data archiving;
- Providing monitoring data to the DOE for the verification of the emission reductions.

1.3 Support and Third Parties Participation:

CDM consultants / experts (internal and/or external) will provide the following support to project staff:

- Prepare emission reduction calculations in electronic files;
- Follow-up of the monitoring plan and continuous advice;

- Compilation of the monitored data and preparation of the monitoring report;
- Review of monitoring reports;
- Coordination with DOEs for the preparation of periodical verifications.

2. Data Recording and Archiving

Measurements of the energy generated and provided to the grid will be electronically monitored and stored through the use of a Supervisory Control and Data Acquisition (SCADA). This system is used for data acquisition, remote monitoring, open-loop and closed-loop control for both individual wind turbines and the wind farm. It enables the project staff to monitor the operating state on a real time basis and to analyze saved operating data. Data monitored by this system will be kept legible, dated, and readily identifiable and be made accessible for audit purposes either in electronic files or physical documents.

Other physical document such as invoices, paper-based maps, diagrams and other relevant monitoring requirements will be collected and stored in a central place. In order to facilitate auditor´s reference of relevant literature relating to the project, documents and monitoring results will be indexed. All electronically and paper-based information will be stored by the project owner and kept at least for 2 years after the end of the crediting period.

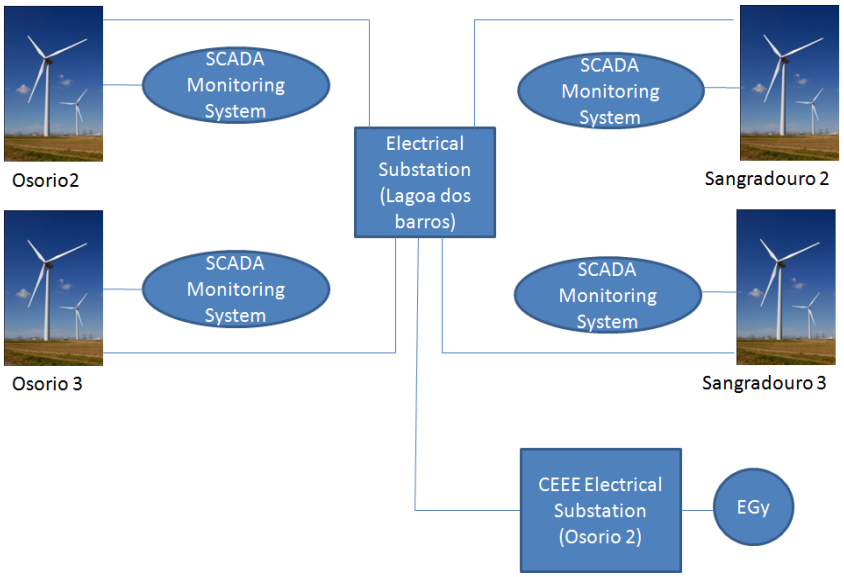

Figure 4 - Measuring data flow diagram

3. Quality Assurance and Quality Control

The project owner will keep a back-up meter installed that can be accessed in case of mal-functioning of the main meter, according to ONS procedures. The need for this additional meter will be adequately assessed by the project owner during the crediting period.

The measuring equipment for invoicing will be installed at the "Osorio 2 substation", which belongs to CEEE (*Companhia Estadual de Energia Elétrica*) and connects directly to the national grid. In addition, each wind farm will have a sealed meter that will be installed in the "Lagoa dos Barros substation", connected to Osorio 2, and will keep record of the electricity generated by each individual wind farm.

The data generated will be analyzed daily by the operational personnel and reviewed by the project manager on a monthly basis. In order to guarantee the accuracy of the data measured and used for calculating emission reductions, the project developer will cross-check this information with the amount of energy stated at the energy sales receipts (invoices).

All things considered, electricity generation of the project will be monitored through the use of on-site metering equipments at the project site; the wind farm will have a main meter in the Osorio 2 sub-station to monitor the net electricity supplied to the grid according to ONS procedures. The meter will be calibrated in accordance with local regulations and manufacturer specifications.

4. Periodical Maintenance and Calibration of Equipments

Periodical preventive maintenance inspections will be conducted by the operation personnel. Unscheduled maintenance activities may also be performed as a way to remedy any fault, defect, breakdown, deficiency and failure of the wind turbines and other related systems. If required, complementary preventive actions will be undertaken by the project owner as a way to guarantee the energy supply. Furthermore, corrective actions will also be defined and adopted if a problem is identified during both scheduled and unscheduled maintenance activities. Records of the periodical maintenance inspections will be kept by the project owners.

If any previous month's reading of the main meter was inaccurate by more than the allowable error as specified in the meter data sheet for the accuracy class installed, or otherwise, functioned improperly, the electricity generated by the proposed project shall be determined by:

- First, by checking the data from the backup meter, unless a test by either party reveals it is inaccurate;
- If the backup meter is not within acceptable limits of accuracy or is otherwise performing improperly the proposed project owner and the electric power company CEEE shall jointly prepare an estimate of the correct reading.

5. Verification and Monitoring Results

The verification of the monitoring results of the project is a mandatory process required for all CDM projects. The main objective of the verification is to independently verify that the project has achieved the emission reductions as reported and projected in the PDD.

The responsibilities for verification of the projects are as follows:

- Sign a verification service agreement with specific DOE and agree to a time framework for carrying out verification activities. The proposed project owner will make the arrangements for the verification and will prepare for the audit and verification process to the best of its abilities.

- The proposed project owner will facilitate the verification through providing the DOE with all required necessary information, before, during and, in the event of queries, after the verification.

- The proposed project owner will fully cooperate with the DOE and instruct its staff and management to be available for interviews and respond honestly to all questions from the DOE.

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 date of completion of the application of the methodology to the project activity study is 12/01/2011.

The person/entity determining the baseline is as follows:

Econergy Brasil Ltda, São Paulo, Brazil
Telephone: +55 (11) 3555-5700
Contact person: Mr. Gustavo Dorregaray Portilla
e-mail: gustavo.dorregaray@econergy.com.br

This person/entity is not a Project participant.

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:

14/12/2009, date of the auction.

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

20 years with 0 months.

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:

01/04/2012

C.2.1.2. Length of the first crediting period:

7 years with 0 months.

C.2.2. Fixed crediting period:

C.2.2.1. Starting date:

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C.2.2.2. Length:

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SECTION D. Environmental impacts

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

The possible environmental impacts associated with the construction and operation of OWPPP2 were identified and described in a report entitled Simplified Environmental Assessment Report (RAS). The RAS is the required environmental study for the licensing of wind power projects in the state of Rio Grande do Sul.

This Assessment was delivered in September 2007 to the State Foundation for Environmental Protection (FEPAM). FEPAM analyzed and approved the RAS and issued the Environmental Installation License (LI 469/2010-DL) on May 4th, 2010. The License will expire on May 3rd, 2014.

This license allows for the installation of OWPPP2 in accordance with many conditions and restrictions, such as:

- No wind generator, building, or any other installation shall be installed in permanent preservation areas (APPs), according to federal environmental legislation (CONAMA resolution n° 302 303/200, Federal Law 4771/65) and state environmental legislation (State Law 11520/2000).
- All WECs must be at least 400 meters from residential areas and public areas, considering the maximum noise limits allowed by norms NBR 10151/2000 and NBR 10152/2000.
- All WECs must be at least 600 meters from Lagoa dos Barros.
- A prevention plan shall be implemented to avoid leakages of fuel and lubricating oil in the collector substation.
- The felling of native trees is not permitted.
- The areas that were affected by the project construction must be restored after construction.
- Construction debris cannot be disposed near to water resources.
- The disposal of liquid waste in superficial and/or underground water resources is not allowed without a specific license from FEPAM.
- The use of agrochemicals for suppression of vegetation in roads and pathways is not permitted.

- The new project pathways must use water permeable materials.
- In case of any environmental damage, FEPAM must be informed immediately.
- Project developers shall notify the start of construction to FEPAM.

Also, in order to renew the Environmental License and/or to obtain the Operation License, the LI 469/2010-DL request several documents and studies to be presented, such as: fauna monitoring report, environmental plan, report proving that the environmental monitoring activities were completed as required.

It should be noted that previous environmental studies undertaken for wind farms in proximity to OWPPP2 (i.e, OWPPP, a 150MW wind farm registered as a CDM project) have shown low environmental impacts.

The ENERCON technology chosen for the OWPPP2 minimizes the use of lubricant (no gearbox) and the noise impact (no gearbox, geometry of the blade). Thus, ENERCON technology reduces the environmental impact.

There will be no transboundary impacts resulting from the construction and operation of OWPPP2. All the relevant impacts occur within Brazilian borders and have been mitigated to comply with the environmental requirements for the project's implementation. Therefore, this project will, by no means, affect any of Brazil´s neighbouring countries, save for a reduction in global pollution by GHG avoidance created by the implementation of the project activity.

OWPPP2 is in compliance with all the conditions and restrictions established by FEPAM.

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:

The RAS analysed the possible environmental impacts that could be generated by the OWPPP2 on the following natural resources: landscape, fauna, flora, noise, soil, hydro resources and historical resources.

Overlooking all the possible environmental impacts caused by the installation of the OWPPP2 (land movement, dust and noise that can disturb the local fauna), it should be noted that the OWPPP2 also yields important benefits, for example: diversification of the electric matrix of the country, generation of clean and renewable energy, technology transfer, employment generation and tourism development.

Thorough plans for the prevention, correction and monitoring have already been undertaken during the pre-construction phases of the project, and will continue throughout the subsequent construction and operation phases.

During the project construction, monitoring plans will be implemented in regards to the following: fauna, underground water, recovery of degraded areas, soil erosion, solid residuals as well as Environmental Supervision of the entire site area.

These plans will contribute to the prevention, control, minimization and recovery of the Impacts identified in the RAS.

It has been concluded that the project is feasible in legal, techno-environmental and economic terms and that OWPPP2 is in compliance with the current environmental legislation and the proposed corrective measures from the environmental programs suggested by FEPAM.

SECTION E. Stakeholders' comments

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

A Portuguese translation of the entire PDD and the "Anexo III" (a document describing the project's contribution to sustainable development, which is required by the Brazilian DNA) were made available to local stakeholder through an internet link. The local stakeholders were informed about the availability of these documents by registered mail.

The local stakeholder process started in March 24th, 2011.

Two letters have been received so far by regular mail, one from the "Lyons Clube de Osorio" (hereinafter LCO) and the other from the "Ordem de Advogados de Osorio" (hereinafter OAB). They praise the work done by the PP because of the positive development the project is bringing to the region.

E.2. Summary of the comments received:

During the Local stakeholder process, two letters were received from the LCO and the OAB. Both letters acknowledge the work done by the PP and emphasize the socioeconomic and environmental benefits that the project will bring to the region. The letter of the LCO was signed by its president, Valdir da Silva Fraga, and the letter of the OAB was signed by its president, Enri Endress Martins.

During the global stakeholder process, the PP received two comments from two different people identified by these e-mails: allwynmarry@gmail.com and zhongzhouli8@gmail.com.
All the questions and commentaries were responded and sent to them in 30/05/2011 and 09/06/2011 respectively. It is important to highlight that these questions were raised for other projects in other countries and for that reason the majority of them do not keep a comprehensive concordance with the proposed project, some questions also mentioned entities from India and were also questioned about procedures that are not applicable or not used in this project.

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

The PP considered every comment as welcome and was open to any criticism or suggestion to improve the project quality and its relationship with the local community and region . After the information received was thoroughly analyzed and the detailed responses for each comment were sent, the PP concluded that no additional action was needed and decided to proceed with the project as initially planned.

Annex 1

CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY

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Annex 2

INFORMATION REGARDING PUBLIC FUNDING

NOT APPILICABLE

Annex 3

BASELINE INFORMATION

All information available in section B.6.3.

Annex 4

MONITORING INFORMATION

The monitoring plan is described in B.7.2.