CLEAN DEVELOPMENT MECHANISM
PROJECT DESIGN DOCUMENT FORM (CDM-SSC-PDD)
Version 03 - in effect as of: 22 December 2006

CONTENTS

Annexes

Revision history of this document

Version Number	Date	Description and reason of revision
01	21 January 2003	Initial adoption
02	8 July 2005	• The Board agreed to revise the CDM SSC PDD to reflect guidance and clarifications provided by the Board since version 01 of this document. • As a consequence, the guidelines for completing CDM SSC PDD have been revised accordingly to version 2. The latest version can be found at <http://cdm.unfccc.int/Reference/Documents>.
03	22 December 2006	• The Board agreed to revise the CDM project design document for small-scale activities (CDM-SSC-PDD), taking into account CDM-PDD and CDM-NM.

SECTION A. General description of small-scaleproject activity

A.1 Title of the small-scale project activity:

>>
Los Santos Wind Power Project
Version: 3.6
Date: 23 / 04 / 2012

A.2. Description of the small-scale project activity:

>>
The project consists of fifteen 850kW GAMESA wind power turbines which will be installed in Cooperativa de Electrificación Rural Los Santos' (COOPESANTOS) concession area in El Guarco and Desamparados, Costa Rica. The project requires a total investment of approximately US$ 38 million for an installed capacity of 12.75 MW which is expected to generate a minimum of 42 GWh per year as per guarantee provided by the turbine supplier in the turbine purchase contract. The project has secured all necessary permits for all project sites. The following table summarizes the most important milestones in the project timeline.

Date	Milestone
Cooperativa de Electrificación Rural Los Santos (COOPESANTOS) Board of Directors decision to proceed with LSWPP as a CDM activity	October 4, 2007
Environmental Impact Assessment approval	February 10, 2009 (Expanded EIA including both sites)
Final feasibility study approval	March, 2009
Final stakeholder consultation workshop	March 25, 2009
CDM development contract	November 17, 2009
WTG Purchase contract	May 5, 2010
Construction contract	May 27, 2010.
ERPA	June 16, 2010
Start of commercial operation	November 11, 2011

This will be the first wind power project to be developed in Costa Rica by a rural electrification cooperative.

The most likely scenario that would take place if Los Santos is not built would be that Cooperativa de Electrificación Rural Los Santos (COOPESANTOS)would have to continue purchasing the necessary energy from ICE, the national utility company. Therefore, Los Santos will displace the emissions which would be generated by the national electrical grid which has tripled its thermal generation over the last 3 years and is looking at even further investment in diesel generation plants.

The major benefits of the project include:

- Improved stability in the National Grid by reducing the dependency on imported oil-based fuels.
- Due to the limited ground space necessary for the deployment of the turbines, other activities such as agriculture can be carried out on the site.
- Minimal impact due to the previous use of the Project site, which means there is no need to clear forests or engage in other activities which disrupt the local flora and fauna.
- The protected forest areas in the vicinity of the project will receive additional protection from the project developer.
- By helping build additional capacity necessary to meet Costa Rica's growing need for electricity, Cooperativa de Electrificación Rural Los Santos (COOPESANTOS)will carry some of the burden that ICE would otherwise have to assume and thereby shielded itself as well as other ratepayers from some, though not all, of the need to increase ICE's tariffs.
- Reduced dependency on ICE for energy supply which alleviates some of the pressure on ICE and helps Cooperativa de Electrificación Rural Los Santos (COOPESANTOS)guarantee a stable energy supply for their clients.
- Development of rural tourism aimed at people interested in the wind power project.
- Support for local community development through the Comunal Participation Program (Programa de Participacion Comunal), which is made up of Coordination Committees comprised of inhabitants from each of the communities and which will be advising the Program on the needs and support opportunities of each community as well as being tasked with supervising the deployment of the agreed upon activities. Activities include support for local infrastructure, education and sustainability development initiatives.
- Direct and indirect job creation.

A.3. 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)**
Costa Rica (Host Party)	Cooperativa de Electrificación Rural Los Santos (COOPESANTOS) (PrivateEntity)	No
The Netherlands	B.V. Mabanaft (Private Entity)	No

A.4. Technical description of the small-scaleproject activity:

A.4.1. Location of the small-scaleproject activity:

>>

A.4.1.1. Host Party(ies):

>>
Costa Rica

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

>>
Cartago

A.4.1.3. City/Town/Community etc:

>>
The sites are located in the districts of San Isidro and San Cristóbal, on kilometer 40 of the Interamericana Sur highway.

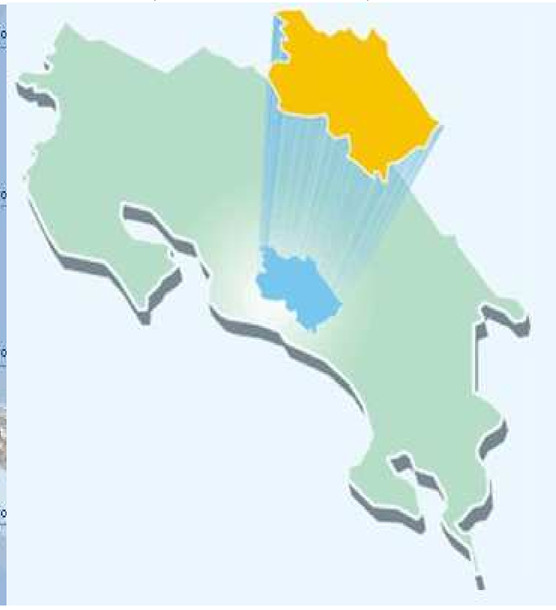
A.4.1.4. Details of physical location, including information allowing the unique identification of this small-scaleproject activity :

>>

The project is located in the
Cooperativa de Electrificación Rural Los Santos (COOPESANTOS)
concession; specifically near the villages of La Paz y Casamata in Costa Rica, Central America.

Figures 1: Location of Costa Rica

Figure 2: Cooperativa de Electrificación Rural Los Santos (COOPESANTOS) concession area



The following table and accompanying map detail the exact location of each of the Wind Turbine Generators(WTGs) that make up the Los Santos Wind Power Project:

Table 1: LSWPP WTG Location

Los Santos WPP WTG location per WGS-84 in Decimal Degrees		
WTG	**POINT X**	**POINT Y**
1	-83.9885898	9.789753111
2	-83.9886097	9.788363483
3	-83.9894565	9.787312364
4	-83.9947281	9.780450124
5	-83.9950511	9.77956023
6	-83.9951443	9.778594054
7	-83.9953917	9.777811965
8	-83.9957289	9.777068665
9	-83.9891239	9.776567852
10	-83.9887975	9.775685129
11	-83.9786575	9.759992632
12	-83.9790184	9.759236338
13	-83.9789441	9.755217609
14	-83.9770491	9.754077072
15	-83.9771615	9.753203467

Figure 3: LSWPP WTG Locations

A.4.2. Type and category(ies) and technology/measure of the small-scaleproject activity:

>>

Type and category

Main Category: **Type I – Renewable energy projects.**
Sub Category: **D – Grid connected renewable electricity generation.** Version 17, Scope 1, EB 61,03th June 2011.

.

The project is a small scale project activity and falls under the category I.D as per the Appendix B of the

Simplified Modalities and Procedures for Small-Scale CDM project activities.

The installed capacity will be 12.75 MW and this is below the 15MW benchmark making this project eligible as small-scale project as referred in clause I of Annex II FCCC/KP/CMP/2005/8/Add.1.

Technology/measure

The project activity utilizes 15 horizontal axis GAMESA G52-850 WTGs with a rated capacity of 850 kW each. Table A.1. shows the detail specifications of the turbines . The turbine lifetime according to the detailed datasheets for the GAMESA G52-850 is of 20 years.

The project feasibility study calculated a plant load factor of 42.68% and the turbine supply contract guarantees a minimum of 42 GWh per year.

Table 2 – WTG Specifications

Parameter	**Specification**
Operating Data	
Rated power	850 kW
Cut-in wind speed	4 m/s
Rated wind speed	13 m/s
Cut-off wind speed	25 m/s
Rotor	
Type	3 Blades, Upwind / Horizontal axis
Diameter	52 m
Rotational speed at rated power	14.6 to 30.8 rpm
Swept area	2,124 m^2
Gearbox	
Type	1 planetary stage / 2 helical stages
Ratio	1: 74.5
Nominal Load	850 kW
Generator	
Type	Double feed generator
Speed at rated power	1.320:2.340 rpm
Rated power	850 kW
Rated voltage	690 V AC (phase to phase)
Frequency	60 Hz

The project includes transfer of technology from Annex I countries, as the wind turbines are produced in Spain and delivered to Costa Rica. Furthermore, during construction of the wind farm a special crane will be imported from USA.

A.4.3 Estimated amount of emission reductions over the chosen crediting period:

>>

Years	Estimation of annual emission reductions (tCO2e)
2012-2013	14,934
2013-2014	14, 934
2014-2015	14, 934
2015-2016	14, 934
2016-2017	14, 934
2017-2018	14,934
2019-2020	14,934
Total estimated reductions (tonnes of CO_2 e)	104,538
Total number of crediting years	7
Annual average of estimated reductions over the crediting period (tonnes of CO_2e)	14,934

A.4.4. Public funding of the small-scale project activity:

>>
There is no public funding involved in the project activity from Parties included in Annex I.

A.4.5. Confirmation that the small-scale project activity is not a debundled component of a large scale project activity:

A proposed small-scale project activity shall be deemed to be a debundled component of a large project activity if there is a registered small-scale CDM project activity or an application to register anothersmall-scale CDM project activity:

• *with the same project participants*
• *in the same category and technology/measure; and*
• *registered within the previous 2 years and*
• *whose project boundary is within 1 km of project boundary of the proposed small scale project activity at the closest point*

The proposed small scale project activity does not satisfy any of the conditions mentioned. Therefore, it is not a debundled component of a large project activity.

SECTION B. Application of a baseline and monitoring methodology

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

>>
The selected Approved Baseline and Monitoring Methodology for this project are as follows:

Type (i): Renewable energy projects
Category D. Electricity generation for a system
Methodology: AMS ID - "Grid connected renewable electricity generation", Version 17, Scope 1, EB 61, 03th June, 2011.
Reference:
- Appendix B of the simplified modalities and procedures for small-scale CDM project activities

"Indicative simplified baseline and monitoring methodologies for a selected small scale CDM project activity".
- Annex 19 of EB 63, Methodological Tool (Version 2.2.1) "Tool to calculate the emission factor for an electricity system".

Reference for the aditionality requirements:
- Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities: "Indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories"
- Annex 34 of EB35 Report: "Non-binding best examples to demonstrate additionality for SSC project activities"

B.2 Justification of the choice of the project category:

>>
The project category is applicable to the project, as the project meets all the applicability criteria stated in the methodology:

- The project is a renewable energy generation unit (wind) with no thermal component, that supplies electricity to a grid that is supplied by at least one fossil fuel fired generating unit.

- The project will install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant).

- The project is not a hydro power plant and is therefore not subject to reservoir or power density limitations.

- Electricity to a grid that is supplied by at 12.75 MW and therefore does not exceed the 15 MW limit.

- This is not a co-generation project.

Hence the project qualifies for category I.D. (clause I of Annex II FCCC/KP/CMP/2005/8/Add.1)

- The project will remain under the limits of small-scale project activity every year of the crediting period.

B.3. Description of the project boundary:

>>
As referred to methodology AMS-.I-D Grid connected renewable electricity generation, the spatial extent of the project boundary includes the power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to.

The project boundary is defined by the wind turbines installation and the control station of the Los Santos Wind Power Project and the National Interconnected System (NIS), the defined electricity system for the project activity. Only CO2 emission in the boundary will be considered. All data used to determine baseline emissions can be located in Annex 3.

B.4. Description of baseline and its development:

>>
The baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid.
(AMS I.D. / Version 17).

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 small-scaleCDM project activity:

>>
The starting date of the project activity is defined in the "Guidelines for completing the Project Design Document" (V07, EB41) as "the earliest of the date(s) on which the implementation or real action of a project activity begins". The established date of May 25, 2010 meets this definition as it precedes both the construction contract and the ERPA and as such establishes the first concrete and irreversible (real) implementation action of the LSWPP.

Previous consideration of the CDM

As per Annex 46 of EB-41 "Guidance on the demonstration and assessment of prior consideration of the CDM" the LSWPP "project participant must inform a Host Party DNA and/or the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status". LSWPP fulfilled this requirement via email on September 23, 2010 well within the established 6 month period after beginning project operation.

Furthermore, the following chronology of events demonstrates that continuing and real actions were taken to secure CDM status by the project participants.

Date	Milestone
Cooperativa de Electrificación Rural Los Santos (COOPESANTOS) Board of Directors decision to proceed with LSWPP as a CDM activity	October 4, 2007
Initial CDM representation agreement between Anaconda Carbon (AC) and CS	April 24, 2008
Environmental Impact Assessment approval	February 10, 2009 (Expanded EIA including both sites)
Final feasibility study approval	March, 2009
Final stakeholder consultation workshop	March 25, 2009
AC CDM development contract	November 17, 2009
Mabanaft Term Sheet signature	March 26, 2010
WTG Purchase	May 25, 2010
Construction contract	May 27, 2010.
ERPA	June 16, 2010
Start of commercial operation (estimated)	November 11, 2011

Barrier Analysis

In accordance with Attachment A of Appendix B of the Simplified Modalities and Procedures for the Small-Scale CDMProject Activities, a barrier analysis could be carried out in order to demonstrate project additionally, as described bellow

"*Project participants shall provide an explanation to show that the project activity would not have occurred anyway due to at least one of the following barriers:*

(a) *Investment barrier: a financially more viable alternative to the project activity would have led to higher emissions;*
(b) *Technological barrier: a less technologically advanced alternative to the project activity involves lower risks due to the performance uncertainty or low market share of the new technology adopted for the project activity and so would have led to higher emissions;*
(c) *Barrier due to prevailing practice: prevailing practice or existing regulatory or policy requirements would have led to implementation of a technology with higher emissions;*
(d) *Other barriers: without the project activity, for another specific reason identified by the project participant, such as institutional barriers or limited information, managerial resources, organizational capacity, financial resources, or capacity to absorb new technologies, emissions would have been higher.*[1]"

The LSWPP faced a variety of barriers and challenges which make it unique. Of particular importance is the insignificant penetration of wind power within the Costa Rican grid which constituted a considerable prevailing practice barrier for the project, especially as it relates to securing financing. It will be demonstrated that the overall reticence against wind power projects has meant that all wind power plants in Costa Rica, which constitute less than 3% of the Costar Rican grid, have been compelled to seek carbon financing in some form to secure financial closure.

Barrier due to prevailing practice

The Costa Rican electrical sector is run exclusively by the Instituto Costarricense de Electricidad (ICE), which is an autonomous state institution with the legal mandate of providing electricity to the Costa Rican society requires for its development. It was created by the "Decreto-Ley No.449" of April 1949 which established amongst its duties the development of the plans for the electrical development of the country. These plans are summarized in the "Plan de Expansion de la Generacion" (Generation Expansion Plan, PEG from its Spanish acronym); the most current of these was published on September 2009 covers the years 2010-2021[2].

Electrical generation is carried out by five public service companies (the LSWPP would make Cooperativa de Electrificación Rural Los Santos (COOPESANTOS) the sixth of these) and 28 private generators. The public service companies are the ICE, the Compañía Nacional de Fuerza y Luz (CNFL, a subsidiary of ICE), the Junta Administradora del Servicio Eléctrico de Cartago (JASEC), the Empresa de Servicios Públicos de Heredia (ESPH), the Cooperativa de Electrificación de San Carlos (COOPELESCA) and the Cooperativa de Electrificación Rural de Guanacaste (COOPEGUANACASTE).

The sum of these public service companies, the private generators and their respective distribution grids make up the National Interconnected System (NIS) which, as of December 2008 (latest date for which

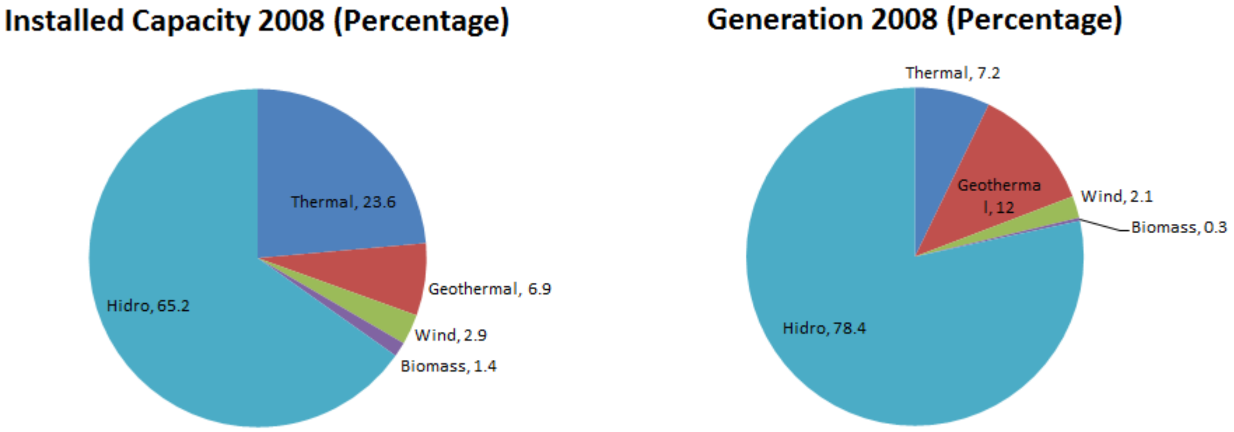
---

[1] http://cdm.unfccc.int/EB/041/eb41_repan46.pdf

[2] http://www.grupoice.com/esp/ele/planinf/docum/plan_expansion_generacion_09.pdf

official statistics have been published) had an effective installed capacity of 2,313 MW and generated a total of 9,413 GWh. The following figure illustrates the composition of that installed capacity and the actual generation per source for the same year.

Figure 4 – Installed capacity and generation by energy source



Source: ICE PEG 2010-2021

As is clear from the preceding graphs hydroelectric power is the basis of the NIS accounting for 65.2% of the installed capacity and 78.4% of the generated energy, while wind power makes up 2.9% of the installed capacity of the NIS and generates only 2.1% of the total energy. This heavy underrepresentation of wind power in a country with an estimated 600 MW of gross wind power potential is due in no small measure to ICE's strong and documented distrust of wind power as substantial component of the NIS. This negative outlook on wind power articulated in the current PEG, which states *"Although the usable potential is extremely interesting, the intermittence which characterizes wind makes it impossible to significantly increase its participation without establishing important backups within the system. It has been determined that the best way is to gradually increase the wind power penetration to control and compensate the side effects which it causes in the system"*.[3]

This institutionalized distrust in wind power within the Costa Rican electrical sector is even more evident amongst the rural electrification cooperatives which do not own any of the existing wind power plants.

The World Bank's "Costa Rica Competitiveness Diagnosis and Recommendations"[4] ranked Costa Rica as number 117 of 180 countries in terms of business climate and described the electricity sector as financially and technically unsuitable due to lack of investments and complexity and lack of clarity in the prevailing regulations. The negative effect of the public distrust of wind power projects on the perceived risk of these types of projects has been of great impact to the Project Activity.

Due to this situation there are only 4 wind power projects in operation in Costa Rica, the general characteristics of which are outlined below:

Table 1 – General Characteristics of WPPs in the NIS (December 2008)

[3] ICE, PEG 2010-2021, page 42. Translated by author.

[4] World Bank Report No. AAA39 – CR; Costa Rica Competitiveness Diagnosis and Recommendations, Volume 1,July 1, 2009

Name	Opertions Start	Installed Capacity (MW)	2008 Generation (GWh)	O&M ($/kW-year)	% of Installed Capacity
Tejona	2002	20	53	45.3	1%
Tilaran	1996	20	72	45.3	1%
Aeroenergia	1998	6	25	45.3	0%
Tierras Morenas	1999	20	48	45.3	1%
	Subtotal	66	198		3%

Source: ICE PEG 2010-2021

It should be noted that Tilarán, Aeroenergía and TierrasMorenas are privately owned and operated and were all developed as Activities Implemented Jointly under the Pilot Phase[5]. As such these projects had access to a wider array of financing sources from the private sector and also had access to non-commercial finance conditions and grants as a result of their being developed for the specific purpose of reducing emissions reductions for Annex I parties.

La Tejona, on the other hand, was built for ICE under the Build-Operate-Transfer (BOT) model and was registered as a CDM Project Activity in May 2007. The Proyecto Eolico Guanacaste, a 49.5 MW wind power project which is currently under construction is also being built for ICE under the BOT model and was also registered as a CDM on February 11, 2011.

As per Executive Board guidance similar activities developed as a CDM project activity is not to be included in the common practice; it follows that projects developed under the AIJ, a precursor of the CDM are to be excluded as well. It is therefore demonstrated that the LSWPP is not a business-as-usual activity and has faced a barrier due to prevailing practice which has historically required carbon-related-support to overcome.

Barrier due to access to financing

Cooperativa de Electrificación Rural Los Santos (COOPESANTOS) began searching for financing options for the LSWPP on April 16, 2009 and included national and international, public and private financial institutions. Despite several promising meetings with a variety of banks,
Cooperativa de Electrificación Rural Los Santos (COOPESANTOS)did not receive financing offers. Financing for the project was apparently secured with Chevalerie Institutions et Regles Catholiques via contract signed on September 4, 2009. Based on the assurances of the signed contract
Cooperativa de Electrificación Rural Los Santos (COOPESANTOS)initially contracted WTG-supplier GAMESA on December 30, 2009.

However, on January 18, 2010 Cooperativa de Electrificación Rural Los Santos (COOPESANTOS) received word from Chevalerie Institutionset Regles Catholiques that despite all assurances and a signed contract they would not be financing the LSWPP. Chevalerie Institutions et Regles Catholiques cited a judicial order to suspend activities as the reason for reneging on the financing agreement, leaving

[5] Activities Implemented Jointly (AIJ) represent a pilot phase of CDM and Joint Implementation based on the concept of "learn-by-doing" where Annex-I Parties implement emission reductions activities in other countries. AIJ are based on the development of „small-scale" projects with intensive financial aid from international organizations and/or Annex-I countries.

Cooperativa de Electrificación Rural Los Santos (COOPESANTOS)with a WTG supply contract it could no longer pay for. After being updated on the situation GAMESA agreed to suspend the supply contract until May 5, 2010 in order to give Cooperativa de Electrificación Rural Los Santos (COOPESANTOS) additional time to secure new financing.

A new search for financing was immediately undertaken and after brief negotiations, in May 2010 –just days from GAMESA's deadline-, the Banco Internacional de Costa Rica (BICSA) agreed to finance the LSWPP. BICSA is a Panama-based bank owned by Banco de Costa Rica and Banco Nacional, two of the Costa Rican banks that had previously declined to offer the LSWPP financing. The LSWPPs' commitment to the CDM is one of the key reasons BICSA was willing to finance the project despite its parent companies' previous refusal to do so.

The following table outlines the basic information on the entities and companies involved in financing and implementing the LSWPP (per audited reports, December 21, 2010).

	Coopesantos[6]	BICSA
Full Name	Cooperativa de Electrificación Rural Los Santos R.L	Banco Internacional de Costa Rica S.A.
Date of incorporation	January 17, 1965	May 10, 1976
Country	Costa Rica	Panama
Type	Rural Electrification Cooperative	Private company
Ownership	Cooperative, wholly owned by service users	51% Banco de Costa Rica 49% Banco Nacional de Costa Rica
Total Assets	US$ 57,177,382.06	US$ 1,063,795,438
Total Liabilities	US$ 26,065,956.25	US$ 946,449,369
Total Equity	US$ 31,111,425.81	US$ 124,349,279

On a letter dated October 13, 2010 BICSA Regional Manager Margarita Garcia de Paredes explicitly stated that the LSWPP "commitment to the environment, especially to the fight against climate change was an important factor weighed during the project evaluation" further noting that the "commitment to the environment is clearly proven in [Cooperativa de Electrificación Rural Los Santos (COOPESANTOS)'] work under the Clean Development Mechanism'. Of further significant value is the BICSA internal evaluation document dated April 2010 which references Costa Rica's goal of becoming carbon neutral by 2021 and the National Development Plan (PND from its Spanish acronym) put forth by the current Costa Rican government, recognizing these as important to positioning BICSA as the "green bank" for Costa Rican energy projects. The document specifies that "The Los Santos Wind Power Project, in that sense, constitutes a medium to achieve the ambitious targets of the PND" further noting that the project "emission reductions of approximately 9,000 tons a year" and that the project is already pursuing registration under the CDM with Anaconda Carbon while simultaneously negotiating a ERPA with B.V. Mabanaft.

In summary, the LSWPP faced a potentially preventative barrier in the form of access to financing which was caused by the high-risk-perception of wind power projects in Costa Rica. This high-risk-perception is so prevalent that no wind power project in Costa Rica has been developed without requiring preferential financing terms afforded to it by carbon-related mechanisms. Furthermore, the financial institution that

[6] Financial information converted from Costa Rican Colones to US Dollars using the sale exchange rate of the Costa Rican Central Bank for October 30, 2011 http://indicadoreseconomicos.bccr.fi.cr/indicadoreseconomicos/Cuadros/frmVerCatCuadro.aspx?CodCuadro=400

eventually funded the LSWPP has clearly and specifically stated that the CDM played a major role in its decision making process; a claim further evidenced by period documentation.

B.6. Emission reductions:

B.6.1. Explanation of methodological choices:

>>
The project is a 12.75MW wind farm and therefore small scale project methodologies are applicable. The AMS I.D. methodology "Grid connected renewable electricity generation" was applied for this project. The "Tool to calculate the emission factor for an electricity system" EB63- Annex 19, Methodological Tool (Version 2.2.1) was used for the calculation of the baseline scenario. Baseline emission factor was calculated as Combined Margin, consisting of a combination of a combination of Operating Margin (OM) and Build Margin (BM) factors. The detailed explanations for the equations and the options selected in this project are described above in section B.4.

The monitoring methodology includes all the parameters that need to be monitored in order to estimate the baseline emissions and leakage. Emissions reductions calculations are described in detail and in the section B.6.3. below.

Baseline emission (BE):

$BE_y = EG_{BL,y} * EF_{co2,grid,y}$
Where;
BE_y = Baseline emission in tCO2/MWh
$EG_{BL,y}$ = Electricity supplied per annum by the project activity in MWh
$\mathbf{EF_{co2,grid,y}}$ = Combined margin of NIS grid in tCO2/MWh

Project emissions (PE):

For most renewable energy project activities, *PEy*= 0. However, for the following categories of project activities, project emissions have to be considered following the procedure described in the most recent version of ACM0002.

• Emissions related to the operation of geothermal power plants (e.g. non-condensable gases, electricity/fossil fuel consumption)
• Emissions from water reservoirs of hydro power plants

Since the project activity is wind power project so there is no emission due to the project activity and hence,PE = 0

Leakage (LE):

As the energy generating equipment is not transferred from another activity or the existing equipment is transferred to another activity, hence leakage is not to be considered.

Emission reductions (ER)

Emission reductions are calculated as follows:
Emission reduction, ER = BE – PE – LE
But here:

PE= 0
LE=0
So ER= BE

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

Data / Parameter:	$\mathbf{EF_{grid,CM,y}}$
Data unit:	tCO_2/MWh
Description:	Combined margin CO_2 emission factor for the electricity system in year y
Source of data used:	Calculated
Value applied:	0.35559
Justification of the choice of data or description of measurement methods and procedures actually applied :	This data will be archived 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 section B.6.3.

Data / Parameter:	$\mathbf{EF_{grid,BM,y}}$
Data unit:	tCO_2/MWh
Description:	Build margin CO_2 emission factor for the project electricity system in the year y
Source of data used:	Calculated
Value applied:	0.0612
Justification of the choice of data or description of measurement methods and procedures actually applied :	This data will be archived electronically and according to internal procedures, until 2 years after the end of the crediting period.
Any comment:	Calculated as explained in section B.6.3.

Data / Parameter:	$\mathbf{EF_{grid,OM,y}}$
Data unit:	tCO_2/MWh
Description:	Operating margin CO2 emission factor for the project electricity system in year y
Source of data used:	Calculated
Value applied:	0.4537
Justification of the choice of data or description of measurement methods and procedures actually applied :	This data will be archived electronically and according to internal procedures, until 2 years after the end of the crediting period.
Any comment:	Calculated as explained in section B.6.3.

Data / Parameter:	**FCi,m,y**
Data unit:	Mass or volume unit
Description:	Amount of fossil fuel type i consumed by power plant / unit m
Source of data used:	Data provided by ICE (Instituto Costarricense de Electricidad), state own company.
Value applied:	See EF calculation
Justification of the choice of data or description of measurement methods and procedures actually applied :	Simple adjusted OM: For each crediting period using the most recent three historical years for which data is available at the time of submission of the CDM-PDD to the DOE for validation (ex ante option); BM: For the first crediting period, ex ante option is chosen, following the guidance included in Step 5. For the second and third crediting period, only once ex ante at the start of the second crediting period
Any comment:	N/A

Data / Parameter:	**NCVi,y**
Data unit:	GJ/mass or volume unit
Description:	Net calorific value (energy content) of fossil fuel type i in year y
Source of data used:	IPCC default values at the lower limit of the uncertainty at a 95% confidence interval as provided in Table 1.2 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories
Value applied:	See EF calculation
Justification of the choice of data or description of measurement methods and procedures actually applied :	Simple adjusted OM: For each crediting period using the most recent three historical years for which data is available at the time of submission of the CDM-PDD to the DOE for validation (ex ante option); BM: For the first crediting period, ex ante option is chosen, following the guidance included in Step 5. For the second and third crediting period, only once ex ante at the start of the second crediting period
Any comment:	

Data / Parameter:	$\mathbf{EF_{CO2,i,y}}$
Data unit:	tCO_2/GJ
Description:	CO2 emission factor of fossil fuel type i used in power unit m in year y
Source of data used:	IPCC default values at the lower limit of the uncertainty at a 95% confidence interval as provided in table 1.4 of Chapter1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories
Value applied:	See EF calculation
Justification of the choice of data or description of measurement methods and procedures actually applied :	Simple adjusted OM: For each crediting period using the most recent three historical years for which data is available at the time of submission of the CDM-PDD to the DOE for validation (ex ante option); BM: For the first crediting period, ex ante option is chosen, following the guidance included in Step 5. For the second and third crediting period, only once ex ante at the start of the second crediting period
Any comment:	-

Data / Parameter:	**EGm,y**

Data unit:	MWh
Description:	Net electricity generated by power plant/unit m in year y
Source of data used:	Data provided by ICE (Instituto Costarricense de Electricidad), state own company.
Value applied:	See EF calculation
Justification of the choice of data or description of measurement methods and procedures actually applied :	Simple adjusted OM: For each crediting period using the most recent three historical years for which data is available at the time of submission of the CDM-PDD to the DOE for validation (ex ante option); BM: For the first crediting period, ex ante option is chosen,following the guidance included in Step 5. For the second and third crediting period, only once ex ante at the start of the second crediting period
Any comment:	Calculated as weighted sum of the OM and BM emission factors, as explained in section B.6.3.

B.6.3 Ex-ante calculation of emission reductions:

>>

The baseline emission factor ($EF_{grid,CM,y}$) is calculated as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) factors, following the procedures established in the "Tool to calculate the emission factor for an electricity system" (Version 2.2.1). Calculations for this combined margin were based on data from an official source and made publicly available.

The tool procedure follows the next steps:

Step 1. Identify the relevant electric power system

The ICE is an independent institution that belongs to the Costa Rican government and that was created With the aim of supplying electricity in the way that society demands in order to achieve development. The Decree7LawNº 449, which created ICE in April, 1949, states that the ICE shall be fully responsible For its technical management, work programmes, works and Projects and that they shall not depend on any other government agency. The electricity development plans of the country are developed by ICE in accordance with the general policies and guidelines of the National Development Plan (PND) and the National Energy Plan (PNE).

The National Interconnected System (NIS) is constituted by the Generation, Transmission and Distribution Systems. All the elements of the NIS are completely interconnected in a single system. Out of the installed capacity, ICE uses 79,5% for its own power plants and 13.8% for plants contracted from independent privately-owned companies. The distributing companies operate power plants that reach 6.7 % of the installed capacity.

Step 2. Chosen whether to include off-grid power plants in the project electricity system

Project participants may choose between the following two options to calculate the operating margin and build margin emission factor:

Option I: Only grid power plants are included in the calculation.
Option II: Both grid power plants and off-grid power plants are included in the calculation.

Option I is chosen for operating margin and build margin emission factor calculation, so only the grid power plants have been included in the calculation of the operating margin and build margin emission factor.

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

The calculation of the operating margin emission factor (EFgrid,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.

Option b) has been chosen to calculate the OM, as the low-cost/must-run sources in Costa Rica are more than 50% of the total generation of the system.

For the simple OM, the simple adjusted OM and the average OM, the emissions factor can be calculated using either of the two following data vintages:

• Ex ante option: If the ex ante option is chosen, the emission factor is determined once at the validation stage, thus no monitoring and recalculation of the emissions factor during the crediting period is required. For grid power plants, use a 3-year generation-weighted average, based on the most recent data available at the time of submission of the CDM-PDD to the DOE for validation.

For off-grid power plants, use a single calendar year within the 5 most recent calendar years prior to the time of submission of the CDM-PDD for validation.

• Ex post option: If the ex post option is chosen, the emission factor is determined for the year in which the project activity displaces grid electricity, requiring the emissions factor to be updated annually during monitoring. If the data required to calculate the emission factor for year y is usually only available later than six months after the end of year y, alternatively the emission

For this case, the ex-ante option has been chosen for calculating the operating margin emission factor.

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

(b) Simple adjusted OM

The simple adjusted OM emission factor (EFgrid,OM-adj,y) is a variation of the simple OM, where the power plants / units (including imports) are separated in low-cost/must-run power sources (k) and other power sources (m). As under Option A of the simple OM, it is calculated based on the net electricity generation of each power unit and an emission factor for each power unit, as follows:

$$EF_{grid,OM\text{-}adj,y} = (1-\lambda_y)\cdot\frac{\sum_m EG_{m,y}\times EF_{EL,m,y}}{\sum_m EG_{m,y}} + \lambda_y\cdot\frac{\sum_k EG_{k,y}\times EF_{EL,k,y}}{\sum_k EG_{k,y}}$$

Where:

$EF_{grid,OM-adj,y}$ = Simple adjusted operating margin CO_2 emission factor in year y (tCO_2/MWh)
λ_y = Factor expressing the percentage of time when low-cost/must-run power units are on the margin in year y
$EG_{m,y}$ = Net quantity of electricity generated and delivered to the grid by power unit m in year y (MWh)
$EG_{k,y}$ = Net quantity of electricity generated and delivered to the grid by power unit k in year y (MWh)
$EF_{EL,m,y}$ = CO_2 emission factor of power unit m in year y (tCO_2/MWh)
$EF_{EL,k,y}$ = CO_2 emission factor of power unit k in year y (tCO_2/MWh)
m = All grid power units serving the grid in year y except low-cost/must-run power units
k = All low-cost/must run grid power units serving the grid in year y
y = The relevant year as per the data vintage chosen in Step 3

$EF_{EL,m,y}$, $EF_{EL,k,y}$, $EG_{m,y}$ and $EG_{k,y}$ should be determined using the same procedures as those for the parameters $EF_{EL,m,y}$ and $EG_{m,y}$ in Option A of the simple OM method above.

If off-grid power plants are included in the operating margin emission factor, off-grid power plants should be treated as other power units *m*. No off-grid power plants are included in the EF calculations.

Net electricity imports must be considered low-cost/must-run units *k*. No net imports are accounted in the defined calculation period.

The parameter λ_y is defined as follows:

$$\lambda_y(\%) = \frac{\text{Number of hours low - cost / must - run sources are on the margin in year y}}{\text{8760 hours per year}}$$

Lambda (λ_y) should be calculated as follows :

Step (i) Plot a **load duration curve**. Collect chronological load data (typically in MW) for each hour of the year *y*, and sort the load data from the highest to the lowest MW level. Plot MW against8760 hours in the year, in descending order.

Step (ii) Collect power generation data from each power plant/unit. Calculate the total annual generation (in MWh) from low-cost/must-run power plants/units (i.e. $\Sigma_k EG_{k,y}$).

Step (iii) Fill the load duration curve. Plot a horizontal line across the load duration curve such that the area under the curve (MW times hours) equals the total generation (in MWh) from low cost/must-run power plants/units (i.e. $\Sigma_k EG_{k,y}$).

Step (iv) Determine the .Number of hours for which low-cost/must-run sources are on the margin in year *y*. First, locate the intersection of the horizontal line plotted in Step (iii) and the load duration curve plotted in Step (i). The number of hours (out of the total of 8760 hours) to the right of the intersection is the number of hours for which low-cost/must-run sources are on the margin. If the lines do not intersect, then one may conclude that low-cost/must-run sources do not appear on the margin and λ_y is equal to zero.

In determining λy only grid power units (and no off-grid power plants) should be considered.

Following the calculations, the value obtained was:

$EF_{grid,OM-adj\ 2007-2009}$= 0,4537 tCO2/MWh
The calculations are provided in a separate calculation sheet.

Step 5: Calculate the build margin (BM) emission factor

Option I has been chosen.

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.

The sample group of power units *m* used to calculate the build margin should be determined as per the following procedure, consistent with the data vintage selected above:

(a) Identify the set of five power units, excluding power units registered as CDM project activities that started to supply electricity to the grid most recently (SET5-units) and determine their annual electricity generation (AEGSET-5-units, in MWh);

(b) Determine the annual electricity generation of the project electricity system, excluding powerunits registered as CDM project activities (AEGtotal, in MWh). Identify the set of power units, excluding power units registered as CDM project activities, that started to supply electricity to the grid most recently and that comprise 20% of AEGtotal (if 20% falls on part of the generation of a unit, the generation of that unit is fully included in the calculation) (SET≥20%) and determine their annual electricity generation (AEGSET-≥20%, in MWh);

(c) From SET5-units and SET≥20% select the set of power units that comprises the larger annual electricity generation (SETsample);
Identify the date when the power units in SETsample started to supply electricity to the grid.
If none of the power units in SETsample started to supply electricity to the grid more than 10 years ago, then use SETsample to calculate the build margin. Ignore steps (d), (e) and (f).

(d) Exclude from SETsample the power units which started to supply electricity to the grid more than 10 years ago. Include in that set the power units registered as CDM project activity, starting with power units that started to supply electricity to the grid most recently, until the electricity generation of the new set comprises 20% of the annual electricity generation of the project electricity system (if 20% falls on part of the generation of a unit, the generation of that unit is fully included in the calculation) to the extent is possible. Determine for the resulting set (SETsample-CDM) the annual electricity generation (AEGSET-sample-CDM, in MWh);

If the annual electricity generation of that set is comprises at least 20% of the annual electricity generation of the project electricity system (i.e. AEGSET-sample-CDM ≥ 0.2 × AEGtotal), then use the sample group SETsample-CDM to calculate the build margin. Ignore steps (e) and (f).

(e) Include in the sample group SETsample-CDM the power units that started to supply electricity to the grid more than 10 years ago until the electricity generation of the new set comprises 20% of the annual electricity generation of the project electricity system (if 20% falls on part of the generation of a unit, the generation of that unit is fully included in the calculation);

(f) The sample group of power units m used to calculate the build margin is the resulting set (SETsample-CDM->10yrs), which has been the option used to calculate the BM emission factor, as the plants that enter into operation in the last 10 years, in addition to the CDM projects do not reach the 20% of the annual electricity generation of the electricity system. One plant which started operation more than 10 years before start of the validation has been included in the set of power plants to reach the 20% conditions.

The set of plants used for the calculation of the build margin factor is made up of the alternative that represents the greatest quantity of energy between the five plants that have been build recently, which generated 20% of the system´s energy.

The build margin emissions factor is the generation-weighted average emission factor (tCO2/MWh) of all power units *m* during the most recent year *y* for which power generation data is available, calculated as follows:

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

Where:

$EF_{grid,BM,y}$ = Build margin CO2 emission factor in year *y* (tCO2/MWh)
$EG_{m,y}$ = Net quantity of electricity generated and delivered to the grid by power unit *m* in year *y* (MWh)
$EF_{EL,m,y}$ = CO2 emission factor of power unit *m* in year *y* (tCO2/MWh)
m = Power units included in the build margin
y = Most recent historical year for which power generation data is available

The CO_2 emission factor of each power unit *m* ($EF_{EL,m,y}$) should be determined as per the guidance in Step 4 (a) for the simple OM, using options A1, A2 or A3, using for *y* the most recent historical year for which power generation data is available, and using for *m* the power units included in the build margin

Following the calculation above, the build margin emission factor for 2009:

$EF_{grid,BM2009}$= 0,0612 tCO2/MWh

Step 6 : Calculate the combined margin emissions factor
The calculation of the combined margin (CM) emission factor (*EFgrid,CM,y*) is based on one of the following methods:
(a) Weighted average CM; or
(b) Simplified CM.

Option a) is chosen.
(a) Weighted average CM
The combined margin emissions factor is calculated as follows:

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

Where:

$EF_{grid,BM,y}$= Build margin CO_2 emission factor in year *y* (tCO_2/MWh)
$EF_{grid,OM,y}$= Operating margin CO_2 emission factor in year *y* (tCO_2/MWh)
w_{OM}= Weighting of operating margin emissions factor (%)
w_{BM}= Weighting of build margin emissions factor (%)

Wind and solar power generation project activities: w_{OM}= 0.75 and w_{BM}= 0.25 (owing to their intermittent and non-dispatchable nature) for the first crediting period and for subsequent crediting periods;

The EF_{gridCM}= 0.35559 tCO2/MWh

Therefore, for the first crediting period, the emission reductions will be calculated as follows:

ER_y= 0.35559 * $EG_{facility,y}$(in tCO_2e)

The estimated emissions reductions for a year *y* are:

ER_y= 0.3559 * 42,000 = 14,934(in tCO_2e)

Emission Reductions	SFPL
Net power supplied to grid per year ($EG_{facility,y}$)	42,000 MWh
Grid Emission Factor of the NIS grid ($EF_{grid,CM}$)	0.35559tCO_2 /MWh
Baseline Emissions	14,934tCO_2
Project Emissions	0
Emission Reductions	14,934 tCO_2

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

Year	Estimation of project activity emissions (tonnes of CO2e)	Estimation of baseline emission (tonnes of CO2e)	Estimation of leakage (tonnes of CO2e	Estimation of overall emission reductions (tonnes of

				CO2e)
2012-2013	0	14,934	0	14,934
2013-2014	0	14,934	0	14,934
2014-2015	0	14,934	0	14,934
2015-2016	0	14,934	0	14,934
2016-2017	0	14,934	0	14,934
2017-2018	0	14,934	0	14,934
2018-2019	0	14,934	0	14,934
Total (tonnes of CO2e)	0	104,538	0	104,538

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

B.7.1 Data and parameters monitored:

(Copy this table for each data and parameter)

Data / Parameter:	$\mathbf{EG_{facility,y}}$
Data unit:	MWh
Description:	Net quantity of electricity produced by the wind farm and supplied to the Grid
Source of data to be used:	Measured-Meter readings
Value of data	42,000 MWh
Description of measurement methods and procedures to be applied:	Directly and continuously measured during the crediting period. This data will be archived electronically and according to internal procedures, until 2 years after the end of the crediting period.
QA/QC procedures to be applied:	Given the lack of official host country guidelines, the metering equipment will be properly calibrated following the latest EB Guidelines. To guarantee QC/QA, it will be double checked by receipts for electricity sales.
Any comment:	Net electricity is defined as the electricity produced minus the imported electricity. Data will be kept for crediting period + 2 years or last issuance of CERs, whichever is later.

B.7.2 Description of the monitoring plan:

>>
The monitoring methodology applied is the one recommended in AMS-I-D “Renewable electricity generation for the grid” (Version 17) in “Appendix B of the simplified modalities and procedures for small-scale CDM project activities: Indicative simplified baseline and monitoring methodologies for selected small scale CDM project activity”.

Monitoring shall consist of metering the electricity generated by the renewable technology which in this case is wind turbines installed at the Los Santos wind farm.

1. Management Structure and Responsibilities

Overall responsibility for daily monitoring and reporting lies with the project owner. The manager of the proposed project is responsible for review the monthly reported results/data and checks the calibration certificates. A diagram illustrating the operational and management structure and responsibilities is available in Annex 4: Monitoring Information.

Data Collection: The electricity supplied by the project activity to the grid will be measured by calibrated electricity meters 0.2 class. The parameter will be monitored at the control room with a Supervisory Control and Data Acquisition (SCADA) system and crosschecked with review of the receipts of electricity sales to Cooperativa de Electrificación Rural Los Santos (COOPESANTOS)' co-operative members and invoices of electricity purchase from the grid company ICE. Data will be measured continuously and recorded at least hourly as required by the applicable methodology.

Data Recording: All data collected will be recorded monthly into an electronic spreadsheet.

Data Calibration: All measurements should be conducted with calibrated measurement equipment according to relevant industry standards. Given the lack of official host country guidelines, the metering equipment will be properly calibrated following the latest EB Guidelines.

Data Report: Data recorded (control value) and the receipts (main value) will be consolidated on a monthly basis and will be checked for quality control purposes with official reports or statistics. If there are discrepancies in the data, the source of the variation will be identified, whatever is the main measured value or the control value. The data report will be concluded monthly and will be verified by the Project Developer's Head Office.

Data Archives: The data recording, the data report and the invoices will be archived, together with this monitoring plan. All data collected as part of monitoring should be archived electronically and be kept at least for 2 years after the end of the last crediting period or the last issuance of CERs, whichever is later.

2. Data Quality Control

An internal procedure to secure the correctness of data will be regularly carried out.Data and reports will be checked internally to secure correctness of data. In case of mistakes, the source of the variation will be identified, whether it is the main measured value or the control value. The data report will be concluded monthly and will be verified by the Project Developer's Head Office.Corrective actions will be applied to avoid future similar mistakes wherever appropriate.

3. Training and Monitoring Personnel

All people that participate in the monitoring process will be suitably qualified and trained in the operation and maintenance of the plant. They will also receive instructions of the monitoring plan.

4. Emission factor calculation

The combined margin emission factor will be fixed for the first crediting period, using ex-ante data for OM and BM as described in section B.6.3.

5. Verification and Monitoring Results

The monitoring report will be prepared by the monitoring personnel and/or the designed consulting company. It shall contain the data report, the emission factor calculation and the results of the emissions reductions of the project for a certain period.

Leakage monitoring:
No energy generating equipment is transferred from another activity to this project and there is no existing equipment to be transferred to another activity. The project activity involves electricity generation from wind. The employed wind energy generator can only convert wind energy into electrical energy and cannot use any other input fuel for electricity generation. Thus, in no ways and means are required to monitor leakage from the project activity. The project owner can adjust and modify the monitoring plan accordingly in order to meet operational requirements. These changes need to be approved by the verifier during the
periodic verifications.

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

>>
AnacondaCarbon S.A.
Telephone: +(504) 2550 0387
Contact person: Mr. Christian Giles
e-mail: christian.giles@anacondacarbon.com

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:

>>
May 25, 2010 – WTG Purchase contract date

The starting date of the project activity is defined in the “Guidelines for completing the Project Design Document” (V07, EB41) as “the earliest of the date(s) on which the implementation or real action of a project activity begins”. The aforementioned date of May 25, 2010 meets this definition as it precedes both the construction contract and the ERPA and as such establishes the first concrete and irreversible (real) implementation action of the LSWPP.

As per the aforementioned PDD guide, Section B.5 (above) contains a description of how the benefits of the CDM were seriously considered prior to the starting date of the project activity as well as a detailed timeline to support this start date.

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

>>
20 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:

>>
July 1, 2012 or date of registration, whichever occurs later.

C.2.1.2. Length of the first crediting period:

>>
7 Years

C.2.2. Fixed crediting period:

C.2.2.1. Starting date:

>>
N/A

C.2.2.2. Length:

>>
N/A

SECTION D. Environmental impacts

>>

D.1. If required by the host Party, documentation on the analysis of the environmental impacts of the project activity:

>>
An Environmental Impact Assessment (EIA) was carried out as per relevant local laws and procedures. The EIA was approved by the National Environmental Technical Secretariat (SETENA), the appropriate office within the Ministry of Environment, Energy and Telecommunications.

The Environmental Guarantee Deposit, to be used in case additional mitigation actions are deemed necessary by SETENA was set at a total of US$ 375,046 and was deposited by Cooperativa de Electrificación Rural Los Santos (COOPESANTOS)on May 28, 2010.

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 EIA (Environmental Impact Assessment) has established that the environmental impacts that would occur during the construction and operational phases will not be significant.

The environmental impact of the project is minimal and meets, or surpasses, the Costa Rica legal requirements for a project of this nature. There will be no trans-boundary impacts resulting from the construction or operation of the project activity.

The following is an abbreviated list of environmental impacts identified by the Environmental Impact Assesment:

- Earth movement and changes to the conformation of the ground.
- Presence of construction machinery.
- Erosion and runoff (during construction period)

- Potential for WTG disturbance of bird flight patterns
- Visual impact of WTG on the landscape
- Solid and liquid wastes generated during construction

All the relevant impacts occur within Costa Rican borders and have been mitigated to comply with the environmental requirements for the project's implementation.

As required by Costa Rican legislation the project Environmental Impact Assessment includes an Environmental Management Plan which specifies the corrective actions, responsible party and timeframe for each Impact identified through the EIA. Corrective actions include the maximization of use of natural terraces and existing roads to minimize earth movements, the use of living fences and temporary canals to avoid excessive runoff and erosion and a minimum distance of 200 meters from standing pools of water to minimize danger to waterfowl.

The EIA and its included Management Plan have been reviewed and approved by the National Environmental Technical Secretariat (SETENA), the appropriate office within the Ministry of Environment, Energy and Telecommunications. The Environmental Guarantee Deposit, to be used in case additional mitigation actions are deemed necessary by SETENA was set at a total of US$ 375,046 and duly deposited by Cooperativa de Electrificación Rural Los Santos (COOPESANTOS)on May 28, 2010.

SECTION E. Stakeholders' comments

>>

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

>>

Given Cooperativa de Electrificación Rural Los Santos (COOPESANTOS) unique role in the communities it serves as a rural electrification cooperative, a significant majority of the inhabitants of the project area are also users of Cooperativa de Electrificación Rural Los Santos (COOPESANTOS)services and as such are represented in the Cooperativa de Electrificación Rural Los Santos (COOPESANTOS)General Assembly, which entitles themto have had a direct voice in the development of the Los Santos WPP.

However, to ensure proper representation of all potential stakeholders in the project Cooperativa de Electrificación Rural Los Santos (COOPESANTOS)has conducted 24 workshops in 12 communities in the area. The following table summarizes the dates and locations of the stakeholder consultation workshops, which were conducted as three blocks of workshops:

Community	Date of 1st Workshop	Date of 2nd Workshop
El Empalme del Guarco	August 06, 2008	August 13, 2008
La Luchita del Guarco	August 27, 2008	September 01, 2008
Vara del Roble del Guarco	September 03, 2008	September 10, 2008
La Paz del Guarco	September 17, 2008	September 24, 2008
Palmital Sur del Guarco	October 08, 2008	October 15, 2008
Casamata del Guarco	October 24, 2008	October 27, 2008
San Cristóbal de Desamparados	November 05, 2008	November 25, 2008.
Palmital Norte del Guarco	January 14, 2009	January 28, 2009

La Cangreja del Guarco	February 04, 2009	February 11, 2009
La Estrella del Guarco	February 18, 2009	February 25, 2009
Palo Verde del Guarco	March 04, 2009	March 11, 2009
Conventillo del Guarco	March 18, 2009	March 25, 2009

These workshops totalled 264 inhabitants who participated in the stakeholder consultation; the names and phone numbers of each participant were recorded to facilitate future communication and feedback.

E.2. Summary of the comments received:

>>
The following tables summarize the results of the workshops:

Overall rating of the project by participants to 1st Workshop				
	Very Good	Good	Regular	Bad
El Empalme del Guarco	13	0	0	0
La Luchita del Guarco	11	0	0	0
Vara del Roble del Guarco	13	0	0	0
La Paz del Guarco	13	0	0	0
Palmital Sur del Guarco	8	0	0	0
Casamata del Guarco	14	0	0	0
San Cristóbal de Desamparados	15	0	0	0
La Estrella del Guarco	8	0	0	0
Palo Verde del Guarco	12	0	0	0
Conventillo del Guarco	6	0	0	0
Total	113	0	0	0

Overall rating of the project by participants to 2nd Workshop				
	Very Good	Good	Regular	Bad
El Empalme del Guarco	4	0	0	0
La Luchita del Guarco	24	0	1	0
Vara del Roble del Guarco	14	0	0	0
La Paz del Guarco	13	0	0	0
Palmital Sur del Guarco	21	0	0	0
Casamata del Guarco	11	0	0	0
San Cristóbal de Desamparados	40	0	0	0
La Estrella del Guarco	5	0	0	0
Palo Verde del Guarco	13	0	0	0
Conventillo del Guarco	6	0	0	0
Total	151	0	1	0

It should be noted that the workshops held at Palmital Norte del Guarco and La Cangreja del Guarco had very small turnout and were therefore folded into consultations held at nearby locations.

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

>>
The Stakeholder Consultation workshops resulted in the creation of the Communal Participation Program (Programa de Participacion Comunal) which is made up of Coordination Committees comprised of inhabitants from each of the communities and which will be advising the Program on the needs and support opportunities of each community as well as being tasked with supervising the development of the agreed upon activities. Activities include support for local infrastructure, education and sustainability development initiatives.

Stakeholders also have a direct voice in Cooperativa de Electrificación Rural Los Santos (COOPESANTOS)through the General Assembly where they have a statutory right to be heard as members of Cooperativa de Electrificación Rural Los Santos (COOPESANTOS)concession area.

Annex 1

CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY

Organization:	Cooperativa de Electrificación Rural Los Santos (COOPESANTOS)
Street/P.O.Box:	
Building:	
City:	San Marcos de Tarrazu
State/Region:	
Postfix/ZIP:	
Country:	Costa Rica
Telephone:	+506 2546-2525
FAX:	+506 2546-6173
E-Mail:	info@coopesantos.com
URL:	www.coopesantos.com
Represented by:	Ismael Lopez
Title:	Director of Engineering and Projects
Salutation:	Eng.
Last Name:	Lopez
Middle Name:	
First Name:	Ismael
Department:	Engineering and Projects
Mobile:	+506 8391-2375
Direct FAX:	
Direct tel:	+506 2546-2525 Ext. 225
Personal E-Mail:	ismaell@coopesantos.com

Organization:	B.V. Mabanaft
Street/P.O.Box:	Wilhelminakade 101 (43rd floor)
Building:	Maastoren, 43rd floor
City:	Rotterdam
State/Region:	
Postfix/ZIP:	3072AP
Country:	The Netherlands
Telephone:	+31 (0) 10 - 290 69 43
FAX:	+31 10 411 0753
E-Mail:	alexander.savelkoul@mabanaft.nl
URL:	www.mabanaft.nl
Represented by:	Mr. Alexander Savelkoul
Title:	Senior Manager Global Carbon Markets
Salutation:	Mr
Last Name:	Savelkoul
Middle Name:	
First Name:	Alexander
Department:	Global Carbon Markets
Mobile:	+31 (0) 65 - 494 01 47

Direct FAX:	+31 10 411 0753
Direct tel:	+31 (0) 10 - 290 69 43
Personal E-Mail:	alexander.savelkoul@mabanaft.nl

Annex 2

INFORMATION REGARDING PUBLIC FUNDING

NOT APPLICABLE

Annex 3

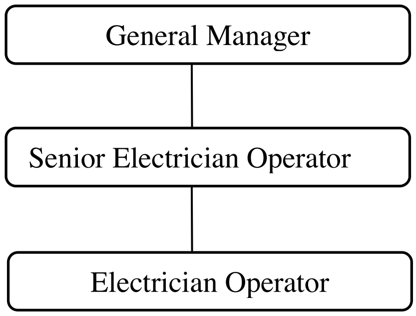
BASELINE INFORMATION

Emission factor calculations are provided in a calculation sheet.

Annex 4

MONITORING INFORMATION

The monitoring and calibration processes are described in section B.7.2 ”Description of the monitoring plan”. The aforementioned process will be carried out by the following personnel, as well as qualified third party specialists, as necessary.



Monitoring functions per role as they relate to monitoring

General Manager

1. Signs off on the written statement for each month.
2. Designates the representative for precision testing and calibration.
3. Attaches seals to the meters or designates the appropriate person for this function.

Senior Electrician Operator

1. Drafts the written statement for each month to be delivered to the General Manager for signature.
2. Verifies the readings carried out by the Electrician Operator.
3. Maintains communication with the energy buyer.

Electrician Operator

1. Carries out readings from meters.
2. Stores readings in electronic database.
3. Sends meter readings to Senior Electrician Operator for the monthly written statement.