MONITORING REPORT NUMBER 1

Version 20 February, 2008

JEPIRACHI WIND PARK
LA GUAJIRA, COLOMBIA

CDM REGISTRATION REFERENCE NUMBER 00194

MONITORIG PERIODS

From January 31/2004 to July 31/2004
From August 1/2004 to July 31 /2005
From August 1/2005 to July 31/2006

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Introduction

This is the first Monitoring Report of this project. The document reports the Emission Reduction (ERs) generated by the Jepirachi Wind Park, CDM project, for producing renewable energy with registration number 00194, of April 1, 2006, covering the following monitoring periods

- ✓ From January 31 /2004 to July 31/2004
- ✓ From August 1/2004 to July 31 /2005
- ✓ From August 1/2005 to July 31/2006

The project operation has been monitored in accordance with the requirements of the applicable Monitoring Method as described in its Project Design Document (PDD), and the Project Monitoring Plan (MP), including social benefit indicators.

With the implementation of this project, EEPPM sells electricity to the national grid, avoiding the dispatch of same amount of energy produced by fossil fuelled thermal plants to the grid. By that, the project avoids CO_2 emissions, and contributes to the regional sustainable development.

The project participants are Empresas Publicas de Medellin (EE.PP.M) as owner, developer and operator of the Wind park, and the INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT AS TRUSTEE OF THE PROTOTYPE CARBON FUND (PCF) of the World Bank as buyer of the emissions reductions (ERs).

The project activity consists of a 19.5 MW Wind Park, located in a desert area inhabited by the Wayuu indigenous communities, at La Guajira Department, north of Colombia. The wind mills were supplied by Nordex Company (Germany). Further information on this project can be found in website of the Empresas Publicas de Medellin (EEPPM) w.w, w.eeppm.com.

The different units of the project were commissioned between 30 of January and 30 of March 2004 and were declared as being in commercial operation in 19 of July 2004. The project has been completed as planned and described in the PDD. This monitoring report has gotten two revisions:

July, 2007: replace the October 2006 version, to correct an edition mistake for the emission factor, changing the incorrect value of 0.282 for the correct emission value of 0.2802, according to the emission calculation report for the period. It doesn't modify the total amount of emissions reductions presented in this document (page four - Table 2), the emission calculation reduction for that period (16492 tons), was calculated with the correct value. For an easy visualization of the change introduced, this version was paged.

February 2008 (this document): replace the July 2007 version to introduce solicitude of the Executive Board, related to: i) explanations about installation and calibration of power meters -page, four- ii) starting date of stable generation- page three- and iii) confirmation the starting day for calculation the emission reductions- page three-.

1. Emissions Reduction Calculation Formula

Emissions reductions of CO_2 generated by the project are calculated with consolidated methodology ACM002 c option, for power generation projects connected to the grid. It considers:

Net CO_2 emissions avoided at grid (Ton CO_2e) = Net generation during the monitoring period (MWh) * factor emission (Ton CO_2e/MWH)

The weighing factors considered for construction and operation margins are 0.5 for each one. The emission factors during monitoring are:

- ✓ 1 Period time baseline (2004) : 0.359 Ton CO_2/MWh
- ✓ 2 Period(1 August 2004 to 31 July of 2005): 0.387 Ton CO_2/MWh
- ✓ 3.Period (1 August 2005 to 31 July of 2006): 0.2802 Ton CO_2/MWh

2. Dispatched energy to the grid in the monitoring period

The commissioning of the overall project started on 10 October 2003 and finished on 10 April 2004, but the different generation units of the project were commissioned starting in 15 December 2003 (first unit) and finalizing 30 March 2004 (last of 15 units).The project started stable production in18 January 2004, and were declared on commercial operation in 19 of July of same year The emission reduction calculations, took in account the margin of operation, which was obtained with power generation beginning at January 31 of 2004.

Power generation data for emissions reduction is take of XM company, a enterprise of ISA group which offers services in operation, management and development of electrics markets, and in particular by Centro Nacional de Despacho (CND) a special, division charged of planning, coordination, supervision and control of the integrated operation of the power generation and transmission resources of the Colombian electric system. It provides data hour by hour and day by day for all plants of energy market in Colombia. The factors of plant for Jepirachi have been 0.33 (in 2004), 0.29 (in 2005) and 0.43 (to July 31 of 2006). A monthly summary of power generation is presented in Table 1:

Table 1. Monthly power generation

YEAR	2004 Real Power generation KWh	2005 Real Power generation KWh	2006 Real Power generation KWh
ENERO	14,951.63	4,397,983	5,030,369
FEBRERO	1,723,427.87	4,760,455	6,179,175
MARZO	4,366,789.60	6,189,684	7,233,905
ABRIL	5,078,088.94	4,806,654	5,025,652
MAYO	6,572,313.91	4,101,747	5,386,714
JUNIO	9,169,209.88	3,608,994	6,027,382
JULIO	6,921,338.78	5,263,834	7,761,522
AGOSTO	7,140,135.06	5,408,106	
SEPTIEMBRE	2,113,074.30	4,179,454	
OCTUBRE	2,525,174.28	829,246	
NOVIEMBRE	2,870,198.12	2,251,921	
DICIEMBRE	3,496,354.67	3,560,560	
TOTAL	**51,991,057.04**	**49,358,637.36**	**42,644,719**

3. Data Monitoring

The basis for the calculation of emissions reduction are the monitoring plan in the Project Design Document - PDD - and the Monitoring Protocol - MP -. The validated monitoring plan has been made operational by the project developer (EE.PP.M) in the Monitoring Protocol (June 30, 2002). The calculation of emission reduction applies methodology ACM002.
Monitoring is based on continuous metering of electricity production. According to the monitoring plan were monitored: the electricity output on site, using measured equipment at the substation (interconnection facility to the grid).

To ensure results there are three main and three backup meters for power, located in panel TM 1 at the substation of energy in the area of the wind park. Certified meters and their back-up were installed since the beginning of the commissioning period of the generating units. Initially meters of the type Jem Star manufactured by Rochester with serial numbers 030902100; 030902101; 030902102; 030902103; 030902104; 030902105 were installed in the different points of measurement between generation and distribution points.

These meters were calibrated on 10 September 2003 and 26-27 April 2005 by EEPP de Medellìn, which is a national, approved laboratory that states that equipments accuracy. During operation some problems were identified related to low telecommunications speed of the meters, and it was detected that the problems were caused by the meters themselves. During this time, local meters were working correctly and daily readings were done as usual, i.e. the only problem was the speed of communication for remote readings.

In November 2005 a formal complaint to the supplier was done and in December 2005 new ION meters were installed (the ones currently installed).They are calibrated annually by Equipo de Medición (Measurement Team). Further calibrations have been made on 14 of December of 2005 and 4 March, of 2008 and none deviations were detected and all informs, certifications and readings are kept by this team in the headquarters of EE.PP.M in Medellin, and in the binnacle registration of power meters in park.

In accordance with ERPA between PFC and EEPPM, the verification period is from August to July, but for future verifications it has been modified and it will l be from January 1 to December 31 of each year, as agreed between EE.PP.M and World Bank in September 2006.

The energy supplied to the grid is put on line at the Centro Nacional de Despacho, therefore it is no necessary to process, to complete or to correct the generation data by EE.PP.M. Fuels Fossil have no been used during the period review, so that, no leakage calculation is required according to the PDD.

4. Emissions reduction generated in the Monitoring Period

For the first period of verification, the emission reductions were calculated with a preliminary methodology as considered in the PDD amounted 418 tons of CO_2e. During the second period the same methodology was used, amounted 938 ton of CO_2e, but then, it was changed for a new one, more representative for Colombian electricity system, which was approved by Meth panel of UNFCCC ,amounted 12.150 tons of CO_2e. As it was accorded with the Prototype Carbon Fund, once the methodology of emission calculation was approved by Meth panel, it would be paid the retroactivity from the first period. In accordance with the formula in section 1 the calculation emission reductions amount to 48.485 ton CO_2 e (forty eight thousand four hundred eighty five tons).

Table 2. Emission reductions for the Jepirachi Wind Park

Calculation of ERs		**Monitoring Periods**		
		First Period	**Second Period**	**Third Period**
Description	**Unit**	**From 31 / 01 /2004 To 31| / 07 /2004**	**From 01 / 08 /2004 To 31/07 /2005 /**	**From 01/08/2005 To 31/07/2006**
Metered Electricity Supply	**MWh**	**33.846**	**51.274**	**58.867**
Baseline Emission Factor	**Ton Co2e/Mwh**	**0.359**	**0.387**	**0.2802**
Emissions Reduction	**TCo2e**	**12.150**	**19.843**	**16.492**

The process for calculation emissions reduction for this project are presented separately for each one of the three periods and each one includes information related to:

- Building Margin
- Operating Margin
- Emissions Factors

5. Sustainability- Economic and social well being

The project company has been aware of his social responsibility and has contributed to social programs for benefits in the community. Furthermore of the compensations plan for social impacts, in the agreement signing with the Prototype Carbon Fund for the reduction of emissions (ERPA), it was defined to give to EEPPM a extra paid of US $0.50 for each equivalent ton reduced, with a exclusive destination to projects and programs that contributes in an effective way to the local development of the communities and institutions and for improving quality life of the population in the project area. This is included in The Community and Institutional Strength Plan (PFIC), with specific indicators for social, cultural, economic. Institutional and organization issues and focused in self management process. The indicators for the monitoring period are included in Section 6 Social Benefits Indicators.

During the monitoring period there have been different agreements between EE.PP.M, communities and government agencies, in order to achieve, activities related to child nutrition, educative and health care, vaccination, oral fluoridation, personal hygienic, food handling, garbage and excrete disposals ,and supply of scholar kits, and equipment for restaurant and kitchen at the Nutritional Recovery Centers (CEREN).

The project has contributed to conform two organized groups of young native people with training in order to guide visitors to the wind park in especial focus as technological aspects of the mills, and complemented with cultural subjects of indigenous communities. Fishers have been qualified in techniques for fish handling and meat conservation, and other people in maintenance of desalinization equipments and hand crafts elaboration. In order to strength the cultural identity of the indigenous community, it has been done different cultural, historical and archeological publications in wayuunaiki language, which have been distributed and explained in the schools of the region.

During the construction of the park almost 150 native workers were employed by the project, while in the operation an average of 15 people of the communities of the area of local influence are employed during every year.

Roles and Responsibilities

The complete implementation and monitoring plan is responsible of EE.PP.M. A CDM team comprising planning, operative and environmental areas is in charged of calculation emissions reductions and to attend monitoring and verifying activities.

6. Social Benefits Indicators

FIRST PERIOD OF ACCOMPLISHMENT (2004)

INDICATOR	PERFORMANCE OR UNIT OF MEASUREMENT	GOALS FOR THE FIRST 7 YEARS PERIOD	DESCRIPTION	BENEFICIARY	VALUE OF THE INDICATOR OR COMMENTS
Water Desalinization	A desalinization plant installed	One desalinization plant in operation in the first year	A desalinization plant with a capacity of 4 cubic meters by hour, with complementary building and equipment for operation as bombs, well, tank for water, interconnection wire, panels for control.	A population of almost 1000 people, at indigenous communities of Kasiwolin, Arutkjuy and Media Luna	The desalinization plant was installed on October 2003, and transferred to the local authorities of Uribia municipality in December, 2003 for operation and care. Cost: $743.242.019 Colombian pesos
	Energy supply	Number of kw/h supplied by the wind park	163.5 kw/h * 40 (9 multiplier factor)		Cumulative reading of the power meter, at 5 of august, 2004. Number of registration for calibration: 23309.
	Operation and Maintenance Manual	One manual finalized in the first year	The manual with technical specifications and conditions for the plant operation		The manual was handed over to the local authorities of Uribia town in December 19 of 2003
	Monitoring and metering water quality and quantity in the desalinization plant	Two sampling by year	Taking water samples for physics, chemical and bacteriological analysis. Results: adequate for human consumption		Dates of water analysis: December 11 of 2003 and July 22 of 2004
		Two reports of water analysis for the local authorities	To send the water analysis results to local authorities at Uribia town		Date of reporting to local authorities: December of 2003 and august 4 of 2004.
					Date of installation of the water meter: June 30 of 2004. Reading of the water meter: 193.16 m^3
Water use	Improved access to water; use of water storage facilities. Monitoring the familiar water consumption	Two familiar polls by year about water consumption	Design the instrument for data collection in the families about water distribution, storage and consumption.		
Water storage	Number of water	Two water reservoir		77 people at	Acts handing over the

	reservoirs	built in the first year		Arutkjuy and 761 people at Medialuna communities	reservoirs to the communities on August 28, of 2003 and November 13 of 2003. Cost: $132.510.000 Colombian pesos
		Two water reservoirs rehabilitated in the first year	To repair or clean water reservoirs in Kasiwolin community	111 people at Kasiwolin community	Acts handing over the reservoirs to the communities on February 14, of 2003 and May 7 of 2003 Cost: $21.380.000 Colombian pesos
Rehabilitation of school	Enlargement of the indigenous school	Provision of infrastructure in the first year.	Includes shelter, dorms for out of town students, laboratory, roof reparation, enclosure, bathrooms.	300 students	A handing over act for infrastructure, in 19 December of 2003 Cost: $39.294.785 Colombian pesos
	Endowment for the indigenous school	Provision of school facilities in the first year	Supply of didactic material and laboratory facilities and logistic		A handing over act with endowment in June 5 of 2003 Cost: $54.962.228 Colombian pesos
Rehabilitation of health center in Media Luna site	Endowment for medical equipments according to the necessities	Provision of equipment and facilities , , in the first year with a handing over act	Includes chirurgical , medical, and office elements, refrigeration facility and solar panels	949 people	A handing over act in June 4 and December 19 of 2003. Cost: $27.136.251 Colombian pesos
Enclosure of graveyard	Enclosure	Enclosure	Built according specifications agreed with the community		A handing over act in July 14 of 2003 Cost: $22.494.000 Colombian pesos
Institutional and communal strengthening program	Number of programs and projects developed	To be defined	Development of training programs in cultural, social economic, institutional and organizing areas.		
	Number of participants	To be defined			

SECOND PERIOD OF ACCOMPLISHMENT (2005)

INDICATOR	**PERFORMANCE OR UNIT OF MEASUREMENT**	**GOALS FOR THE FIRST 7 YEARS PERIOD**	**DESCRIPTION**	**BENEFICIARY**	**VALUE OF THE INDICATOR OR COMMENTS**
Water Desalinization	Monitoring and metering water quality and quantity in the desalinization plant	Two sampling by year	Taking water samples for physics, chemical and bacteriological analysis.	116 people in Kasiwolin. 77 people in Arutkjuy and 761 people in Medialuna communities	Date of analysis: March 17 of 2005
		Two reports of water analysis for the local authorities	To send the water analysis results to local authorities at Uribia town		Date of report: march 23 and August 12, of 2005
Water use	Improved access to water; use of water storage facilities. Monitoring the familiar water consumption	Two familiar polls by year about water consumption			Done
	Energy supply	Number of kw/h supplied by the wind park	298.8 kw * 40 (9 multiplier factor)		11.952 kw/h
Institutional and communal strengthening program	Number of programs and projects developed	To be defined	Development of training programs in cultural, social economic, institutional and organizing areas.		Training for native tourists guide Job creation Child nutrition
	Number of participants	To be defined			

THIRD PERIOD OF ACOMPLISMNET (2006)

INDICATOR	PERFORMANCE OR UNIT OF MEASUREMENT	GOALS FOR THE FIRST 7 YEARS PERIOD	DESCRIPTION	BENEFICIARY	VALUE OF THE INDICATOR OR COMMENTS
Water Desalinization	Monitoring and metering water quality and quantity in the desalinization plant	Two sampling by year	Taking water samples for physics, chemical and bacteriological analysis.	116 people in Kasiwolin. 77 people in Arutkjuy and 761 people in Medialuna communities	Date of analysis: March 29 of 2006
		Two reports of water analysis for the local authorities	To send the water analysis results to local authorities at Uribia town		Date of report: February 23, and July 17 of 2006
Water use	Improved access to water; use of water storage facilities. Monitoring the familiar water consumption	Two familiar polls by year about water consumption			The polls are done periodically by Guajira University
	Energy supply	Number of kw/h supplied by the wind park	748.5 kw * 40 (9 multiplier factor)		29.940 kw/h* $220 kw=$6.586.800 Colombian pesos contributed in energy for operation of the desalinization plant
Institutional and communal strengthening program	Number of programs and projects developed		Development of training programs in cultural, social economic, institutional and organizing areas.		Training for native tourists guide Job creation Child nutrition Archeological researches and cultural heritage management
	Number of participants	People of Arutkajuy Kasiwolin, Medialuna communities			