



**Monitoring report form  
(Version 04.0)**

**MONITORING REPORT**

<b>Title of the project activity</b>	Bundled wind power project Cape Verde
<b>Reference number of the project activity</b>	Ref. 9570
<b>Version number of the monitoring report</b>	Version 01
<b>Completion date of the monitoring report</b>	25/03/2015
<b>Registration date of the project activity</b>	31/01/2013
<b>Monitoring period number and duration of this monitoring period</b>	1st monitoring period from 01/04/2013 to 31/12/2014 both days included.
<b>Project participant(s)</b>	Cabeolica S.A Swedish Energy Agency
<b>Host Party(ies)</b>	Cape Verde Sweden
<b>Sectoral scope and selected methodology(ies), and where applicable, applied standardized baseline(s)</b>	Sectoral Scope 1: Energy industries Methodology: ACM0002.: "Consolidated baseline methodology for grid-connected electricity generation from renewable sources"-Version 13
<b>Estimated amount of GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period in the registered PDD</b>	118,258
<b>Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period</b>	92,461
<b>Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period up to 31 December 2012(if applicable)</b>	0
<b>Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period from 1 January 2013 onwards (if applicable).</b>	92,461

## SECTION A. Description of project activity

### A.1. Purpose and general description of project activity

The project activity is a group of four wind farms (total of 25.5 MW), which contribute to the reduction of fossil fuel dependence and consequently help to decrease the GHG emissions to the atmosphere by introducing an amount of electrical energy that is from a renewable source: wind power. Using the high wind potential of Cape Verde, this wind power plant aims to generate electrical power to supply Cape Verde and provide an alternative source of electricity generation, which fulfils the necessary requirements of the project activity. The project activity contains the following four wind farms:

- *Santiago* with 9.35 MW of nominal capacity;
- *Sal* with 7.65 MW of nominal capacity;
- *São Vicente* with 5.95 MW of nominal capacity;
- *Boa Vista* with 2.55 MW of nominal capacity.

The purpose of the proposed project is to generate renewable electricity to the grid. Each plant provides electricity to the system of the island where the plant is located. Thus the four plants generate electricity for four different systems.

The project activity were developed by *Cabeólica S.A.* (hereafter *Cabeólica*), a private limited company registered in the Republic of Cape Verde. The Company was set up in September 2009 in order to develop and operate the four Wind Farms.

The project provides reliable and efficient power to the Cape Verdean electrical market through the Power Purchase Agreement (PPA) signed between *Cabeólica* and Electra. *Electra*<sup>1</sup> (*Empresa Pública de Electricidade e Água* – Electricity and Water Public Company) was created in year 1982 and is the operator of Cape Verde's electricity system and is responsible for the generation and distribution of energy in the country.

For the wind farms adopted 30 (for all four wind farms) *Vestas* wind turbines. The wind turbines model is V52-850 kW, which is a turbine with a pitch regulated upwind turbine with active yaw and a three-blade rotor. The Vestas V52-850 kW has a rotor diameter of 52 meter operates using the OptiSpeed concept. This feature enables the rotor to operate with variable speed of rotation (RPM). Below are some characteristics of the wind farms:

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<sup>1</sup> More details can be found at ELECTRA's website: <http://www.electra.cv>

Technical Data	Santiago	Sal	Boa Vista	São Vicente
Installed Capacity (MW)	9.35	7.65	2.55	5.95
Load Factor (%)	40.3	43.2	42.5	51.5
Net Energy (MW <sub>average</sub> )	3.77	3.3	1.083	3.06
Wind Turbines (units)	11	9	3	7
Wind Turbines Rated Capacity (kW)	850	850	850	850
Model	V52-850	V52-850	V52-850	V52-850
Hub's height (meters)	55	55	55	55
Net Energy (MWh/year)	33,008.12	28,950.05	9,493.65	26,842.83

Table 01 – Technical data of the wind farm

The table below summarizes the relevant dates for the project activity:

Date (dd/mm/y)	Key Events	Contents/Comments
22/12/2009	Signature of the Engineering, Procurement and Construction Agreement between Cabeólica and <i>Vestas Portugal Serviços de Tecnologia Lda</i>	Defines the terms and conditions for the design, supply, installation, construction, commissioning and testing of the Wind farms.
03/11/2010	Commencement of civil works on wind farm <i>São Vicente</i> .	<i>Vestas</i> start the civil works on wind farm <i>São Vicente</i> .
10/11/2010	Commencement of civil works on wind farm <i>Santiago</i> .	<i>Vestas</i> start the civil works on wind farm <i>Santiago</i> .
13/04/2011	Commencement of civil works on wind farm <i>Boa Vista</i> .	<i>Vestas</i> start the civil works on wind farm <i>Boa Vista</i> .
18/05/2011	Commencement of civil works on wind farm <i>Sal</i> .	<i>Vestas</i> start the civil works on wind farm <i>Sal</i> .
10/08/2011	Wind farm <i>Santiago</i> connected to the grid.	At this date the wind farm <i>Santiago</i> was connected to the grid and the tests were started.
07/09/2011	Wind farm <i>São Vicente</i> connected to the grid.	At this date the wind farm <i>São Vicente</i> was connected to the grid and the tests were started.
27/09/2011	Wind farm <i>Boa Vista</i> connected to the grid.	At this date the wind farm <i>Boa Vista</i> was connected to the grid and the tests were started.
14/11/2011	Wind farm <i>Sal</i> connected to the grid.	At this date the wind farm <i>Sal</i> was connected to the grid and the tests were started.

Table 1: Important dates for the project activity.

This monitoring report presents information related to the first verification of project activity which covers the period from April, 1<sup>st</sup> 2013 to December, 31<sup>st</sup> 2014, both days included. The total emission reductions by the project activity over the monitored period are **92,461 tCO<sub>2</sub>e**.

## A.2. Location of project activity

The project activities are located in the *Santiago, Sal, São Vicente* and *Boa Vista* islands in Cape Verde. The exact location and the unique identification of the four wind farms are identified by their coordinates, as follow:

- *Boa Vista* Wind Farm

Latitude: 16°13.2 N

Longitude: 22°54.7 W

- *Sal* Wind Farm

Latitude: 16°42.1 N

Longitude: 22°54.1W

- *Santiago* Wind Farm

Latitude: 14°58.2 N

Longitude: 23°30.7 W

- *São Vicente* Wind Farm

Latitude: 16°50.3 N

Longitude: 25°01.4 W

## A.3. Parties and project participant(s)

Party involved ((host) indicates a host Party)	Private and/or public entity(ies) project participants (as applicable)	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
Cape Verde (host)	Cabeolica S.A	No
Sweden	Swedish Energy Agency	No

## A.4. Reference of applied methodology and standardized baseline

The methodology applied to the project is ACM0002 – “Consolidated methodology for grid-connected electricity generation from renewable sources” (version 13)<sup>2</sup>, the “Tool for the

<sup>2</sup> Accessed on March, 18<sup>th</sup> 2015. Available at:

demonstration and assessment of additionality” (version 06.1)<sup>3</sup> and Tool to calculate the emission factor for an electricity system (ver. 02.2.1)<sup>4</sup>.

#### A.5. Crediting period of project activity

The project employs the renewable crediting period (7 years). The crediting period of the project activity is from 01/04/2013 (DD/MM/YYYY) to 31/03/2020 (DD/MM/YYYY).

#### A.6. Contact information of responsible persons/ entities

<b>Project participant and/or responsible person/ entity</b>	<input type="checkbox"/> Project participant <input checked="" type="checkbox"/> Responsible person/ entity for completing the CDM-MR-FORM
<b>Organization name</b>	GSS Sustentabilidade
<b>Street/P.O. Box</b>	Iguaçu 2820
<b>City</b>	Curitiba
<b>State/Region</b>	Paraná
<b>Postcode</b>	80.240-030
<b>Country</b>	Brazil
<b>Telephone</b>	+55 41 3091-9732
<b>E-mail</b>	<a href="mailto:info@gssconsult.com">info@gssconsult.com</a>
<b>Website</b>	<a href="http://www.gssconsult.com">www.gssconsult.com</a>
<b>Contact person</b>	Mr. Paulo A. Zanardi Jr.
<b>Title</b>	Mr.
<b>Last name</b>	Zanardi
<b>Middle name</b>	Augusto
<b>First name</b>	Paulo
<b>Department</b>	Climate Change
<b>Direct tel.</b>	+55 41 9970-3737
<b>Personal e-mail</b>	<a href="mailto:zanardi@gssconsult.com">zanardi@gssconsult.com</a>

### SECTION B. Implementation of project activity

#### B.1. Description of implemented registered project activity

The project activity comprehends the generation of electricity through renewable sources (wind) from the *Santiago, Sal, Boa Vista* and *São Vicente* wind farms, consisting in produce renewable energy to the Cape Verde's islands grids. During this monitoring period all wind farms were operating and the energy been dispatched to their respective grids.

The technology employed by the project is the exploitation of wind energy to generate electricity; wind power is used to move the blades, which power the turbines to produce electricity. This type

[https://cdm.unfccc.int/filestorage/D/Y/P/DYPFI935XBG274NWH6O8CM1KEZR0VU/EB67\\_repan13\\_ACM0002\\_ver13.0.0.pdf?t=UTJ8bmxmOGRvfDC-D2HiK5xIEYrkILjb0LWs](https://cdm.unfccc.int/filestorage/D/Y/P/DYPFI935XBG274NWH6O8CM1KEZR0VU/EB67_repan13_ACM0002_ver13.0.0.pdf?t=UTJ8bmxmOGRvfDC-D2HiK5xIEYrkILjb0LWs)

<sup>3</sup> Accessed on March, 18<sup>th</sup> 2015. Available at: <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v6.1.0.pdf>

<sup>4</sup> Accessed on March, 18<sup>th</sup> 2015. Available at: <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v2.2.1.pdf>

of power plant has great advantages. A wind farm project is compatible with other land uses as agriculture and livestock, bring generation of investment in disadvantaged areas, the fuel is endless and the turbines do not require fuel supply.

The used technology is environmentally safe and sound; do not emit greenhouse gases to operate. Also is a renewable energy source with a low environmental impact. The impacts of the wind farm regarding fauna and flora are incomparably small compared to hydroelectric plants, per example, where areas need to be flood for the construction of the reservoirs. Regarding land use, the property does not lose its productive function, because the base of each turbine occupies a small area.

Regarding the generation of waste is practically non-existent, no comparison to nuclear and biomass. And the emission of greenhouse gases is zero, since it uses wind, a renewable energy, to generate electricity.

Regarding the know-how transference to the host party, *Cabeólica* signed a contract with *Vestas* responsible to provide and commissioning of the technology. All equipments were produced outside *Cape Verde*, but *Vestas* was also responsible to transfer the know-how at the time of the construction and to operate the wind farms. Thus contributing to transfer of know-how and creating new workers and specialists in the host country. The V52 generator has the following characteristics:

Generator V52-850 kW	
Manufacturer	Vestas
Description	Asynchronous with wound rotor, slip rings and VCS
Rated Power	850 kW
Speed	1,620 RPM (50Hz) and 1,944 RPM (60Hz)
Frequency	50/60 Hz
Voltage	690 VAC

Table 03 – Technical data of the generator.

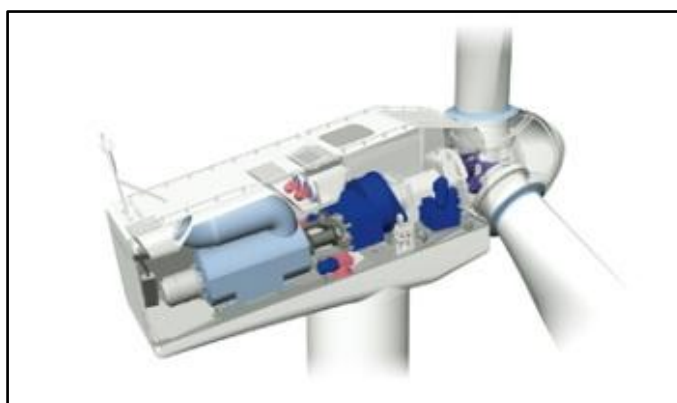


Figure 01 – Illustration of a Vestas wind turbine model V52-850 kW.

**B.2. Post registration changes****B.2.1. Temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline**

Not Applicable.

**B.2.2. Corrections**

Not Applicable

**B.2.3. Permanent changes from registered monitoring plan, applied methodology or applied standardized baseline**

Not Applicable.

**B.2.4. Changes to project design of registered project activity**

Not Applicable.

**B.2.5. Changes to start date of crediting period**

Not Applicable.

**B.2.6. Types of changes specific to afforestation or reforestation project activity**

Not Applicable.

**SECTION C. Description of monitoring system**

The energy generated by the wind farms is measured by a meter system installed in each power plant substation, the delivery point. The meter is responsible to read the gross energy generated by the wind farm. The gross energy is measured automatically by the meter. The energy measured by this meter is used to elaborate the energy invoice. Also the same meter reads the electricity consumed by the power plant. The readings of the meter are performed always by a representative of *Cabeólica* and Electra, as specified below.

The meter used by the project activity is the electricity meters IEC, Landis+Gyr Qualigrid, model ZMQ – 202, class 0.2 measurement accuracy. The meters are located on the medium voltage side of the transformer at 20 KV. The control team of each power plant is responsible for monitoring the gross energy to be dispatched to the grid and this information will be recorded by *Cabeólica*. At the last business day of the month a reading must be done in the presence of *Cabeólica* and Electra team.

*Cabeólica* must give Electra a 48 hours notice of the time that is intended to take the readings. After the readings if the metering system is found to be inaccurate by more than 1% or the acceptable accuracy from manufacture, whichever is the lower, or is unavailable or malfunctioning, the measurement method will be determined jointly with Electra. The information contained in the electronic data recording system will be verified by checking that the sum of the hourly readings in the electronic data recording system over a specified period are consistent with the local totalized readings for the metering system over the same period (determined by subtracting the local totalized reading at the end of the period). If a purchaser representative is present at such reading, then such reading will be jointly taken and recorded, otherwise, the project company representative will take and record such reading and make a photographic record thereof.

In the event where the meter at the wind farm presents malfunctions, SCADA (Supervisory Control and Data Acquisition) readings can be used as backup readings. Meters are sealed for safety after

calibration to guarantee the inviolability of the data. As the meter reads the gross energy generated and the energy consumed by the power plant, the net energy is calculated reducing the energy consumed by the plant of the gross energy generated. The net energy dispatched will be used presented at the monitoring reports and will be used to calculate the emissions reductions.

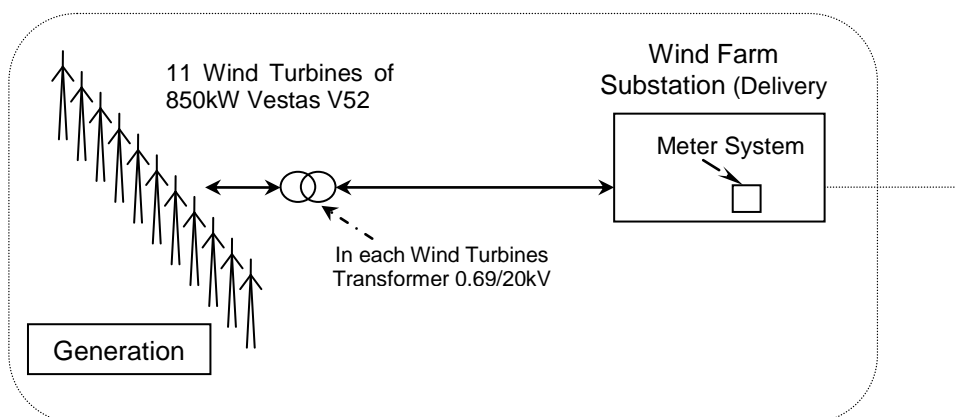


Figure 02 – Wind farm *Santiago* simplified wiring diagram.

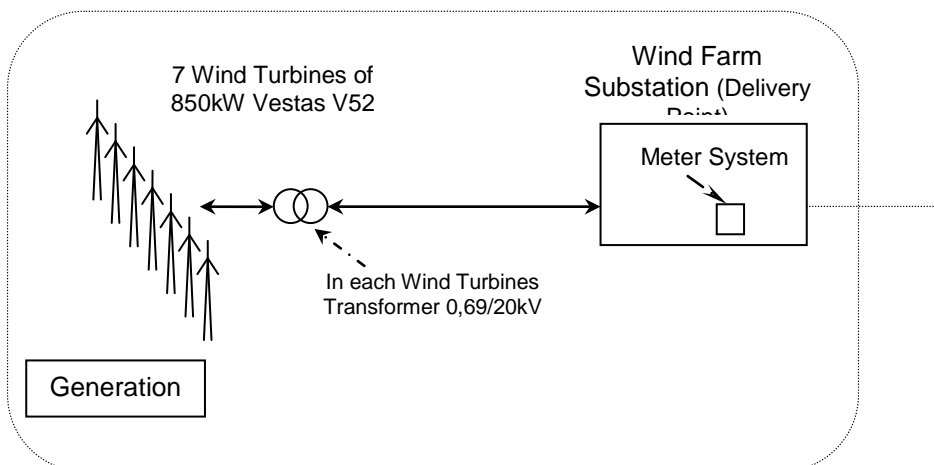


Figure 03 – Wind farm *São Vicente* simplified wiring diagram.

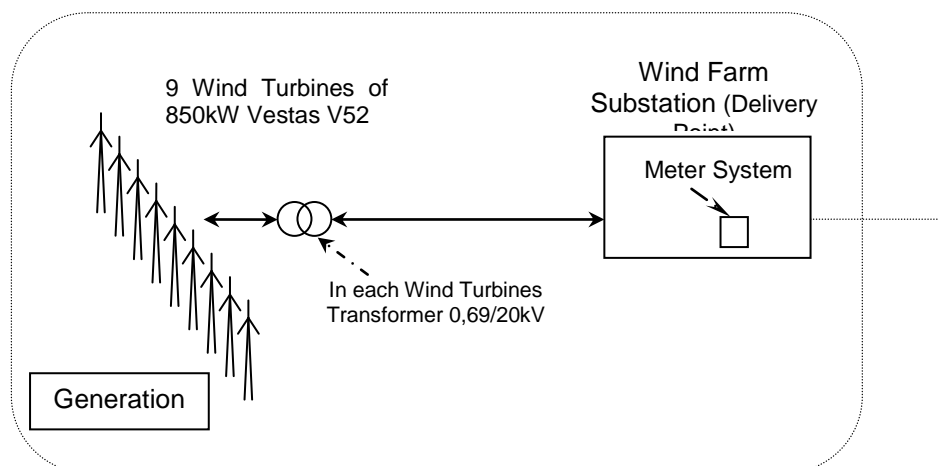
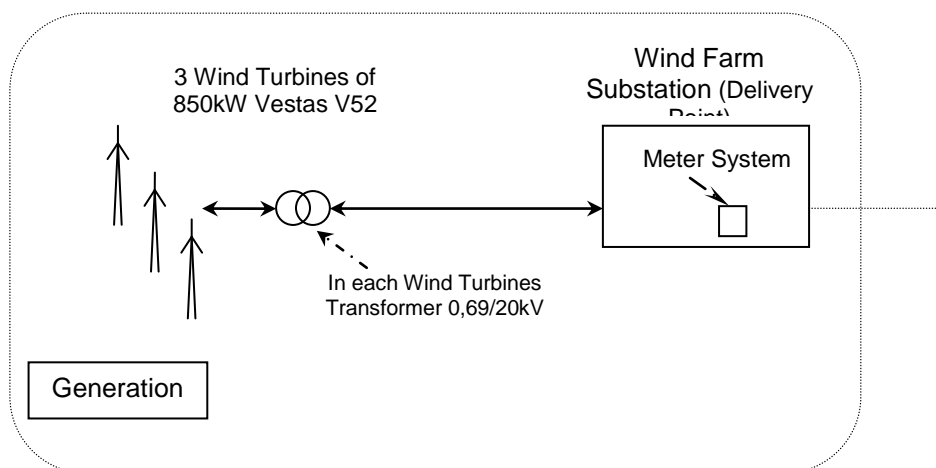


Figure 04 – Wind farm *Sa/* simplified wiring diagram.



Figure 05 – Wind farm *Boa Vista* simplified wiring diagram.

The operator, through its technical team (which is also responsible for day-to-day operation of the electric power production by the wind farm) is responsible for the gathering of data and for filling in registration forms for data storage. The project manager is the only responsible for the monitoring plan. The staff involved with the monitoring of data will participate in capacity building seminars in order to be able to correctly undertake the monitoring plan as described in the PDD.

The wind power plant operator, with help from the equipment manufacturers, is responsible for training of his monitoring and operation staff. After training activities, the technical team manage monitoring activities, quality control and the quality assessment procedures.

All monitoring data is being stored during the lifetime of the project by the project manager. In this case it means seven years (credit period) and more two years after its closure in accordance with the methodology. If the project can be renewed for more two periods, the data will be stored for 21 years (credit period renewed) and more two years, giving a total of 23 years of archival information.

All the training necessary for the plant operational team (eventually remote and local operators) was provided during the plant construction and during the plant commercial operation. The objectives of the course was to train the engineers and others technicians to understand the applicable safety procedures and practices associated with the technology installed, to operate the operational system of control panel, manuals and others documentation, identify alarm notifications, monitor and operate wind farm using the online SCADA system and the maintenance of the wind farm. The training procedures were held by *Vestas* specialist team in each wind farm. The flowchart monitoring information is presented in annex

## SECTION D. Data and parameters

### D.1. Data and parameters fixed ex ante or at renewal of crediting period

Data / Parameter:	$EF_{grid, CM, y}$
Unit:	tCO <sub>2e</sub> /MWh
Description:	Combined margin CO <sub>2</sub> emission factor of the grid
Source of data:	Calculated
Value(s) applied:	Santiago: 0.6655 Sal: 0.6746 São Vicente: 0.7381 Boa Vista: 0.6464

Purpose of data:	This parameter is used to calculate the baseline emissions.
Additional comment:	Calculated as a weighted average of the OM and BM emission factors.

<b>Data / Parameter:</b>	<b><math>EF_{grid, OM, y}</math></b>
Unit:	tCO <sub>2e</sub> /MWh
Description:	CO <sub>2</sub> Operating Margin emission factor of the grid.
Source of data:	Factor calculated with data from Electra.
Value(s) applied:	Santiago: 0.6665 Sal: 0.6742 São Vicente: 0.7496 Boa Vista: 0.6505
Purpose of data:	This parameter is used to calculate the baseline emissions.
Additional comment:	Calculated <i>ex-ante</i> (2008-2010) as indicated in section B.6.1 of the registered PDD.

<b>Data / Parameter:</b>	<b><math>EF_{grid, BM, y}</math></b>
Unit:	tCO <sub>2e</sub> /MWh
Description:	CO <sub>2</sub> Build Margin emission factor of the grid.
Source of data:	Factor calculated with data from Electra.
Value(s) applied:	Santiago: 0.6622 Sal: 0.6755 São Vicente: 0.7036 Boa Vista: 0.6340
Purpose of data:	This parameter is used to calculate the baseline emissions.
Additional comment:	Calculated <i>ex-ante</i> (2010) as indicated in section B.6.1 of the registered PDD.

## D.2. Data and parameters monitored

<b>Data / Parameter:</b>	<b><math>EG_y</math></b>
Unit:	MWh
Description:	Electricity supplied to the grid by the project.
Measured/ Calculated / Default:	Measured.
Source of data:	Cabeolica S.A
Value(s) of monitored parameter:	Santiago: 55,897.78 Sal: 28,802.35 São Vicente: 37,999.73 Boa Vista: 8,130.07

Monitoring equipment:	Please, refer to section C for monitoring equipment description.
Measuring/ Reading/ Recording frequency:	<p>The following parameters shall be measured:</p> <p>(i) The quantity of electricity supplied by the project plant/unit to the grid; and</p> <p>(ii) The quantity of electricity delivered to the project plant/unit from the grid.</p> <p>The net electricity of the project will be calculated as the sum of the net electricity generation of the four power plants and for the individual <math>EG_{grid}</math>, that the net electricity production is obtained by operation the electricity exports – the electricity imports.</p>
Calculation method (if applicable):	Not applicable.
QA/QC procedures:	The procedure is described in section B.7.2 of the registered PDD.
Purpose of data:	This parameter is used to calculate the baseline and project emissions.
Additional comment:	The data will be archived in electronic way. Archived data kept during the crediting period and two years after.

### D.3. Implementation of sampling plan

Not applicable.

## SECTION E. Calculation of emission reductions or GHG removals by sinks

### E.1. Calculation of baseline emissions or baseline net GHG removals by sinks

According to the methodology, baseline emissions ( $BE_y$ ) are the product of the baseline emissions factor ( $EF_y$ ) times the electricity supplied by the project activity to the grid ( $EG_y$ ), calculated as follows:

$$BE_y = EF_{grid,CM,y} \times EG_{pj,y}$$

**Equation 01**

Where:

$BE_y$  = Baseline emissions, in  $tCO_2/yr$ ;

$EG_{pj,y}$  = 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 Monitoring Report applies the ex-ante validated emission factor for project activities connected to each interconnected grid islands. These factors were calculated based on parameters that were justified during the validation as stated in the registered PDD.

System	$EF_{grid,CM}(tCO_2/MWh)$
São Vicente	0.7381
Sal	0.6746
Santiago	0.6655
Boa Vista	0.6464

Table 04: Emission factor of each island interconnected grid ( $tCO_2/MWh$ ).

As mentioned above, electricity supplied to the grid by the project ( $EG_y$ ) is monitored by Cabeólica and Electra. The amount of electricity generated during the monitored period by the plants comprised by this CDM project activity and the baseline emissions are presented in table 5 and 6, respectively:

Year	Months	Wind Power Plants			
		Boa Vista WPP (MWh)	Sal WPP (MWh)	Santiago WPP (MWh)	São Vicente WPP (MWh)
2013	April	431.74	1,355.62	3,125.33	1,922.99
	May	488.91	1,547.85	4,075.82	2,280.47
	June	471.56	1,428.84	2,615.89	2,353.49
	July	311.50	1,152.66	1,190.85	1,507.25
	August	206.57	764.32	772.02	862.21
	September	291.39	1,129.93	1,464.00	1,329.51
	October	448.59	1,482.20	2,153.30	1,996.67
	November	488.76	1,661.51	2,857.88	1,748.55
	December	772.27	1,639.37	3,744.88	1,788.09
<b>Sub-Total 2013</b>		<b>3,911.29</b>	<b>12,162.30</b>	<b>21,999.97</b>	<b>15,789.23</b>
2014	January	865.25	1,942.38	4,341.43	2,137.23
	February	924.87	1,787.58	4,942.94	2,252.29
	March	837.89	1,537.96	3,928.58	2,176.94
	April	776.59	1,673.96	3,316.94	1,969.02
	May	806.72	1,531.32	3,478.73	2,029.59
	June	884.10	1,048.62	3,433.95	2,220.02
	July	492.81	1,101.52	1,568.50	1,719.91
	August	296.94	755.22	674.19	1,234.54
	September	413.56	942.55	1,310.79	1,275.46
	October	503.09	1,336.00	1,654.11	1,875.16
	November	623.30	1,393.43	2,300.22	1,789.56
	December	704.95	1,589.51	2,947.43	1,530.78
<b>Sub-Total 2014</b>		<b>8,130.07</b>	<b>16,640.05</b>	<b>33,897.81</b>	<b>22,210.50</b>
<b>TOTAL</b>		<b>12,041.36</b>	<b>28,802.35</b>	<b>55,897.78</b>	<b>37,999.73</b>

Table 05: Electricity dispatched to the grid by the project activity.

Year	Months	Baseline Emissions (tCO <sub>2</sub> e)			
		Boa Vista WPP	Sal WPP	Santiago WPP	São Vicente WPP
2013	April	279.08	914.50	2,079.91	1,419.36
	May	316.03	1,044.18	2,712.46	1,683.21
	June	304.82	963.90	1,740.87	1,737.11
	July	201.35	777.58	792.51	1,112.50
	August	133.53	515.61	513.78	636.40
	September	188.35	762.25	974.29	981.31
	October	289.97	999.89	1,433.02	1,473.74
	November	315.93	1,120.85	1,901.92	1,290.60
	December	499.20	1,105.92	2,492.22	1,319.79
<b>Sub-Total 2013</b>		<b>2,528.26</b>	<b>8,204.69</b>	<b>14,640.98</b>	<b>11,654.03</b>
2014	January	559.30	1,310.33	2,889.22	1,577.49
	February	597.84	1,205.90	3,289.53	1,662.42
	March	541.61	1,037.51	2,614.47	1,606.80
	April	501.99	1,129.25	2,207.42	1,453.33
	May	521.46	1,033.03	2,315.09	1,498.04
	June	571.48	707.40	2,285.29	1,638.60
	July	318.55	743.09	1,043.84	1,269.47
	August	191.94	509.47	448.67	911.21
	September	267.33	635.84	872.33	941.42
	October	325.20	901.27	1,100.81	1,384.06
	November	402.90	940.01	1,530.80	1,320.87
	December	455.68	1,072.28	1,961.51	1,129.87
<b>Sub-Total 2014</b>		<b>5,255.28</b>	<b>11,225.38</b>	<b>22,558.99</b>	<b>16,393.57</b>
<b>TOTAL</b>		<b>7,783.53</b>	<b>19,430.06</b>	<b>37,199.97</b>	<b>28,047.60</b>

Table 06: Baseline emissions over the monitored period.

A spreadsheet with all calculations will be available to the DOE at the time of the verification.

## E.2. Calculation of project emissions or actual net GHG removals by sinks

According to the applicable methodology, project emissions are zero.

## E.3. Calculation of leakage

According to the applicable methodology, leakage emissions by the project activity are zero.

#### E.4. Summary of calculation of emission reductions or net anthropogenic GHG removals by sinks

According to the registered PDD, emission reductions by the project activity ( $ER_y$ ) during a given period of year  $y$  are the product of the baseline emissions factor ( $BE_y$ ), minus the project emission ( $PE_y$ ), as follows:

$$ER_y = BE_y - PE_y$$

**Equation 2**

Considering the equation above and data presented in the previous sections, emission reductions of Bundled wind power project Cape Verde from April, 1<sup>st</sup> 2013 to December, 31<sup>st</sup> 2014, both days included are presented below:

	Item	Baseline emissions (t CO2e)	Project emissions (t CO2e)	Leakage (t CO2e)	Emission reductions (t CO2e)
2013	April	4,693	0	0	4,693
	May	5,756	0	0	5,756
	June	4,747	0	0	4,747
	July	2,884	0	0	2,884
	August	1,799	0	0	1,799
	September	2,906	0	0	2,906
	October	4,197	0	0	4,197
	November	4,629	0	0	4,629
	December	5,417	0	0	5,417
2014	January	6,336	0	0	6,336
	February	6,756	0	0	6,756
	March	5,800	0	0	5,800
	April	5,292	0	0	5,292
	May	5,368	0	0	5,368
	June	5,203	0	0	5,203
	July	3,375	0	0	3,375
	August	2,061	0	0	2,061
	September	2,717	0	0	2,717
	October	3,711	0	0	3,711
	November	4,195	0	0	4,195
	December	4,619	0	0	4,619
	TOTAL	92,461	0	0	92,461

Table 07: Emission Reductions over the monitored period.

A spreadsheet with all calculations will be available to the DOE at the time of the verification.

**E.5. Comparison of actual emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD**

Item	Values estimated in ex-ante calculation of registered PDD	Actual values achieved during this monitoring period
Emission reductions or GHG removals by sinks (t CO <sub>2</sub> e)	118,258	92,461

**E.6. Remarks on difference from estimated value in registered PDD**

Cabeólica generated less emission reductions in the past years than forecasted in the PDD due to lower intake of the project wind energy by the local utility company than expected. During these initial years of production by the company, the demand for electricity, by which the company's forecasted production was based on.

**E.7. Actual emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards**

Item	Actual values achieved up to 31 December 2012	Actual values achieved from 1 January 2013 onwards
Emission reductions or GHG removals by sinks (t CO <sub>2</sub> e)	0	92,461

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## Appendix 1. Contact information of project participants and responsible persons/ entities

<b>Project participant and/or responsible person/ entity</b>	<input checked="" type="checkbox"/> Project participant <input type="checkbox"/> Responsible person/ entity for completing the CDM-MR-FORM
<b>Organization name</b>	Cabeolica S.A
<b>Street/P.O. Box</b>	C.P 128/C
<b>City</b>	Santiago
<b>State/Region</b>	-
<b>Postcode</b>	-
<b>Country</b>	Cape Verde
<b>Telephone</b>	+ 238 2602260
<b>Fax</b>	+ 238 2602260
<b>E-mail</b>	<a href="mailto:ana.monteiro@cabeolica.com">ana.monteiro@cabeolica.com</a>
<b>Website</b>	<a href="http://www.cabeolica.com">www.cabeolica.com</a>
<b>Contact person</b>	Ana Monteiro
<b>Title</b>	Ms.
<b>Last name</b>	Monteiro
<b>Middle name</b>	-
<b>First name</b>	Ana
<b>Department</b>	Environmental, Social and Administrative
<b>Direct tel.</b>	+ 238 2602260
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<b>Project participant and/or responsible person/ entity</b>	<input checked="" type="checkbox"/> Project participant <input type="checkbox"/> Responsible person/ entity for completing the CDM-MR-FORM
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<b>Website</b>	<a href="http://www.energimyndigheten.se">www.energimyndigheten.se</a>
<b>Contact person</b>	Ana Monteiro
<b>Title</b>	Ms.
<b>Last name</b>	Ola
<b>Middle name</b>	-
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<b>Department</b>	International Carbon Market Unit



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<b>Project participant and/or responsible person/ entity</b>	<input type="checkbox"/> Project participant <input checked="" type="checkbox"/> Responsible person/ entity for completing the CDM-MR-FORM
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## Appendix 2. Monitoring Information Flowchart

Flowchart	Procedure	Responsible
<pre> graph TD     A[Take readings on 1st day of each commissioning period] --&gt; B[Take readings on the last business day if that month]     B --&gt; C{Electra is available}     C -- No --&gt; D[Take reading and make a photographic record thereof]     C -- Yes --&gt; E[Take jointly reading with Electra and record]     E --&gt; D     D --&gt; F{Meter is ok?}     F -- No --&gt; G[Prepare an estimate of the correct reading together with Electra.]     F -- Yes --&gt; H[Submit the recorded measurements to Electra] </pre>	This reading shall be performed together with Electra. This reading must be recorded by Cabeólica and presented in a document.	Site Operator of each wind farm
	Take the reading on the last business day of that month. This reading must be done together with Electra and shall be notified with 48h in advance to Electra.	Site Operator of each wind farm
	Cabeólica must give Electra 48h of notice of the time Cabeólica intends to take the reading	Site Operator of each wind farm
	Cabeólica will keep a record of these readings.	Project Manager and Electra Representative of each wind farm
	If the metering system is found to be inaccurate by more than 1% or the acceptable accuracy from manufacture, whichever is the lower, or is unavailable or malfunctioning, the measurement will be determined jointly with Electra.	
	These recorded measurements will be submitted no later than 2 business days to Electra.	Project Manager of each wind farm or CTO?
	Based in all available information including the telemeter data have been agreed between parties.	Project Manager Manager and Electra Representative of each wind farm

## Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
04.0	25 June 2014	Revisions to: <ul style="list-style-type: none"> <li>• Include the Attachment: Instructions for filling out the monitoring report form (these instructions supersede the "Guideline: Completing the monitoring report form" (Version 04.0));</li> <li>• Include provisions related to standardized baselines;</li> <li>• Add contact information on a responsible person(s)/ entity(ies) for completing the CDM-MR-FORM in A.6 and Appendix 1;</li> <li>• Change the reference number from <i>F-CDM-MR</i> to <i>CDM-MR-FORM</i>;</li> <li>• Editorial improvement.</li> </ul>
03.2	5 November 2013	Editorial revision to correct table in page 1.
03.1	2 January 2013	Editorial revision to correct table in section E.5.
03.0	3 December 2012	Revision required to introduce a provision on reporting actual emission reductions or net anthropogenic GHG removals by sinks for the period up to 31 December 2012 and the period from 1 January 2013 onwards (EB70, Annex 11).
02.0	13 March 2012	Revision required to ensure consistency with the "Guidelines for completing the monitoring report form" (EB 66, Annex 20).
01	28 May 2010	EB 54, Annex 34. Initial adoption.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: monitoring report		