



**Monitoring report form
(Version 05.1)**

MONITORING REPORT

Title of the project activity	Mampuri Wind Power Project	
UNFCCC reference number of the project activity	9074	
Version number of the monitoring report	01	
Completion date of the monitoring report	07/04/2016	
Monitoring period number and duration of this monitoring period	02 01/01/2014 – 31/12/2015	
Project participant(s)	Senok Wind Power (Private) Limited Asian Development Bank, as trustee of the Future Carbon Fund ; Swedish Energy Agency	
Host Party	Sri Lanka	
Sectoral scope(s)	01: Energy Industries	
Selected methodology(ies)	AMS I.D. Version 17, “ Grid Connected Renewable Electricity Generation”	
Selected standardized baseline(s)	NA	
Estimated amount of GHG emission reductions or net GHG removals by sinks for this monitoring period in the registered PDD	Annually : 18,768 tCO ₂ For this monitoring period: 18, 768 tCO ₂ x 2 = 37,536 tCO ₂	
Total amount of GHG emission reductions or net GHG removals by sinks achieved in this monitoring period	GHG emission reductions or net GHG removals by sinks reported up to 31 December 2012	GHG emission reductions or net GHG removals by sinks reported from 1 January 2013 onwards
	Not applicable	32,592

SECTION A. Description of project activity

A.1. Purpose and general description of project activity

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(a) Purpose of the project activity and the measures taken for GHG emission reductions or net anthropogenic GHG removals by sinks;

The purpose of the project activity is to use the wind energy potential in the North West coastal belt of Sri Lanka to produce a total of 10 MW using eight wind turbines, each rated at 1.25 MW.

Electricity produced is sold to Ceylon Electricity Board (CEB), the national electricity utility, through a dedicated transmission line and its operations and sale of electricity are governed by the Permit issued by SLSEA, and the standardised Small Power Purchase Agreement (SPPA) signed with CEB.

The SPPA is executed for a period of 20 years, which is also considered the project lifetime. The Operation and the Maintenance of the WTGs will be carried out out by the manufacturer and the required spares and accessories will be made available for the duration of the project.

The manufacturers have also guaranteed a power curve and a machine availability percentage, which ensures that the machines have to be at a peak working condition.

Further, the plant will shut down operations in the following scenarios:

- (1) Grid interruptions
- (2) Wind speed lower than cut-in speed and higher than cut-off speed
- (3) Scheduled preventive maintenance
- (4) Unscheduled corrective maintenance

This project is the first wind power project in Sri Lanka and it was commissioned in 2010.

(b) Brief description of the installed technology and equipment;

The WTGs are Suzlon make S64-1.25 MW machines. The project is located in Mampuri, Puttalam and was developed by Senok Wind Power (Pvt) Ltd.

The metering of the generation takes place at the panel room of the project, where all eight WTGs are connected. The metering of the project was done by the CEB, and at the commissioning of the project, the officials from the CEB connected the meters for the metering as described in Section C below.

(c) Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.);

Date of commissioning of each WTG* is as follows

WTG 1	14/05/2010
WTG 2	14/05/2010
WTG 3	14/05/2010
WTG 4	14/05/2010
WTG 5	14/05/2010
WTG 6	14/05/2010
WTG 7	14/05/2010
WTG 8	14/05/2010

*These dates have been recorded in the “Project handing over checklist” document which denotes the date of commissioning of each WTG and has been signed and accepted by the WTG manufacturer and project owner.

(d) Total GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period.

The power plant generated a gross energy output of 47,993,555 kWh during the monitoring period, and hence the total CERs for the year was 32,592 tCO₂/yr.

A.2. Location of project activity

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Host party : Sri Lanka

Province: North Western

District: Puttalam

Local Authority: Kalpitiya Pradeshiya Sabha

Village: Mampuri

Physical location:

The coordinates of the eight wind turbine generator locations are the following:

Wind Turbine Generator (WTG)	WTG Unique Serial Number*	Latitude	Longitude
WTG1	0809PRI1250PP0021	N 8° 0' 36.7194"	E 79° 43' 23.8794"
WTG2	0809PRI1250PP0022	N 8° 0' 26.28"	E 79° 43' 27.84"
WTG3	0809PRI1250PP0020	N 8° 0' 8.6394"	E 79° 43' 33.5994"
WTG4	0809PRI1250PP0016	N 7° 59' 33.36"	E 79° 43' 23.2794"
WTG5	0809PRI1250PP0015	N 7° 59' 22.92"	E 79° 43' 43.32"
WTG6	0809PRI1250PP0018	N 7° 59' 12.4794"	E 79° 43' 45.12"
WTG7	0809PRI1250PP0017	N 7° 58' 59.52"	E 79° 43' 48.7194"
WTG8	0809PRI1250PP0019	N 7° 58' 47.2794"	E 79° 43' 51.9594"

*These serial numbers have been recorded in the “Project handing over checklist” document which denotes the serial number of each WTG at the corresponding location and has been signed and accepted by the WTG manufacturer and project owner.

Access to Site: The site is accessed by turning from A3 Colombo-Puttalam road at Palavi, to B 349 Palavi – Kalpitiya road. When travelling from Palavi towards Kalpitiya along this road, turn left at the Mampuri junction, which is approximately 12 km from Palavi. Move through the Mampuri village to reach the beach front, along which the site is located.

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 whether the Party involved wishes to be considered as project participant (yes/no)
Sri Lanka (host)	Private entity Senok Wind Power (Private) Limited	No

Party involved (host) indicates a host Party)	Private and/or public entity(ies) project participants (as applicable)	Indicate whether the Party involved wishes to be considered as project participant (yes/no)
Sweden (Other party)	Asian Development Bank, as trustee of the Future Carbon Fund ; Swedish Energy Agency	No

A.4. Reference of applied methodology and standardized baseline

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(a) Applied methodology:

AMS-I.D version 17 - Grid connected renewable electricity generation

(b) Tools and any other methodology:

Tool to calculate the emission factor for an electricity system (Version 02.2.1) EB 63 Report Annex 19

Tool for the demonstration and assessment of additionality (Version 07.0.0) EB 70 Report Annex 08

Guidelines on additionality of first-of-its-kind project activities (Version 2.0) EB 69, Annex 07

A.5. Crediting period of project activity

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Type: Fixed crediting period

Start date and end date of the crediting period: 01/01/2013 – 31/12/2022

Current monitoring period: 01/01/2014 – 31/12/2015

Length of the current monitoring period: 2 years

A.6. Contact information of responsible persons/entities

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Name: Ms. Rozanne Moraes

Title: Project Manager

Contact No: +94 112 2580017

Mobile No: +94 7722 42823

Fax No: +94 112 584791

Email: rozanne@senoksl.com

SECTION B. Implementation of project activity

B.1. Description of implemented registered project activity

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The project has been implemented as described above in section 'A.1.Purpose and general description of project activity'. The total installed capacity of the Project is 10MW equipped with 8 sets of turbines with a unit capacity of 1.25MW. Electricity generated by the Project is delivered to the CEB via a 33kV line. The project activity uses a proven wind turbine, and has selected the Suzlon S64/1250 machine. Each wind turbine is located within a block of land of approximate dimensions 150 m x 100 m. Foundation for each wind turbine is located approximately in the middle of its block of land. The turbine mast is of tubular structure, transported in sections and was assembled on site. Each turbine consists of three blades, each of length 31 m. The nacelle houses

the gearbox and the electricity generator. The generator is of induction type. The complete technical specifications are given in the box.

The generating voltage is 690 V. Power generated is connected to a step-up transformer located at the foot of each turbine mast, where the voltage is raised to 33 kV to be compatible with the medium voltage transmission system of CEB. There is a 33 kV transmission line along the entire 3.5 km length of the wind park, to which the output of each turbine is connected. At a location approximately in the middle of the park, near WTG5, there is a central switching arrangement to connect the wind power plant to the CEB network. CEB's metering point is located immediately after this interconnection point. A new 33 kV transmission line from the CEB metering point located in the middle of the wind park near WTG5 to reach the national grid was built by the project proponent.

The project was commissioned in 2010 and each WTG commissioning date is as follows:

WTG 1	14/05/2010
WTG 2	14/05/2010
WTG 3	14/05/2010
WTG 4	14/05/2010
WTG 5	14/05/2010
WTG 6	14/05/2010
WTG 7	14/05/2010
WTG 8	14/05/2010

Manufacturer: Suzlon Energy Limited, India

Operating Data

Rated power	1250 kW
Cut-in wind speed	3 m/s
Rated wind speed	14 m/s
Cut-out wind speed	25 m/s
Survival wind speed	67 m/s
Regulation	Pitch-regulated

Rotor

Type	3 bladed, horizontal axis
Diameter	64 m
Swept area	3217 m ²
Speed	20.7 / 13.8 rpm

Hub

Type	SG Iron Casting
Material	GGG 40.3

Generator

Type	Asynchronous, 4/6 pole
Rated Power	250/1250 kW
Rated voltage	690 V
Rotational speed	1006/1506 rpm
Frequency	50 Hz
Protection	IP 56
Cooling system	Air cooled
Insulation	Class H

Braking System

Aerodynamic braking	3 independent systems with blade pitching
Mechanical braking	Hydraulic fail safe disc brake system

Gearbox

Type	3-stage (1 planetary & 2 helical)
Ratio	74.917:1 (50Hz)
Nominal load	1390 kW

Yaw System

Type	Active electrical
Bearings	Polyamide slide
Brake	Clutch brake on drive motor
Drive	4 electrical driven planetary gearbox
Protection	By cable twist sensor, proximity sensor

Pitch System

Type	3 independent blade pitch control
Actuation	Individual electro-mechanical drive
Bearing	Double row, ball bearings
Operating range	-5° to 88°
Resolution	0.1°
Back up	Battery pack
Drives	Planetary gearbox with AC inverter drive

Certifications

Design Standards	GL/IEC
Quality	ISO 9001

Tower

Type	Tubular
Hub height	74 m
Corrosion protection	Epoxy / PU coated
Erection	With crane

Protection

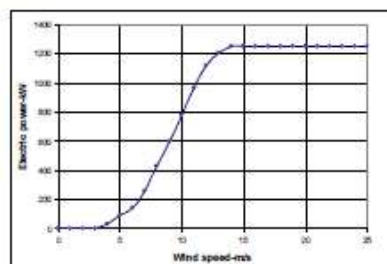
Lightning protection standard	IEC 1024-1, VDE 0185 part 1 & 2 DIN 48801 and DIN 18014
Blades	Receptor in blade tips

Controller

Programmable microprocessor based	
High-speed data communication	
Active multilevel security	
Sophisticated operating software	
Advanced data collection, remote monitoring & control option	
UPS back up	
Real time operation indication	

Power Curve

Air density:	1.225 kg/m ³
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B.2. Post-registration changes**B.2.1. Temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline**

>> There have been no temporary deviations from the registered monitoring plan, applied methodology or applied standardized baseline.

B.2.2. Corrections

>> There have been no corrections to the registered monitoring plan, applied methodology or applied standardized baseline.

B.2.3. Changes to start date of crediting period

>> There have been no changes to start date of crediting period

B.2.4. Inclusion of a monitoring plan to the registered PDD that was not included at registration

>> There have been no inclusions of a monitoring plan to the registered PDD that was not included at registration

B.2.5. Permanent changes from registered monitoring plan, applied methodology or applied standardized baseline

>> There have been no permanent changes to the registered monitoring plan, applied methodology or applied standardized baseline

B.2.6. Changes to project design of registered project activity

>> There have been no changes to project design of registered project activity

B.2.7. Types of changes specific to afforestation or reforestation project activity

>> This section is intentionally left blank

SECTION C. Description of monitoring system

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An electricity meter is fixed at the metering point located at the interconnection point to the Ceylon Electricity Board (CEB) grid. This is a requirement specified in the Small Power Purchase Agreement (SPPA) already executed between Senok Wind Power (Pvt) Ltd and CEB. The meter measures electricity dispatched to the grid at the project boundary. This meter is of the type and accuracy approved by CEB, and the SPPA states that it will be read by CEB once a month. This is an established practice for CEB to read the meters of all the small power producers in the country once a month. This meter reading is in two parts:

M1: Electricity exports to the project electricity system from the small scale CDM project activity

M2: Electricity imports from the project electricity system for requirements of the project activity, when the wind power plant is not in operation

Reading M1 is also be used by SWPL to prepare the monthly invoice to the purchaser, CEB for the sale of electricity.

Reading M2 is also be used by CEB to issue an invoice for the electricity purchased by the project activity, when the wind power plant is not in operation

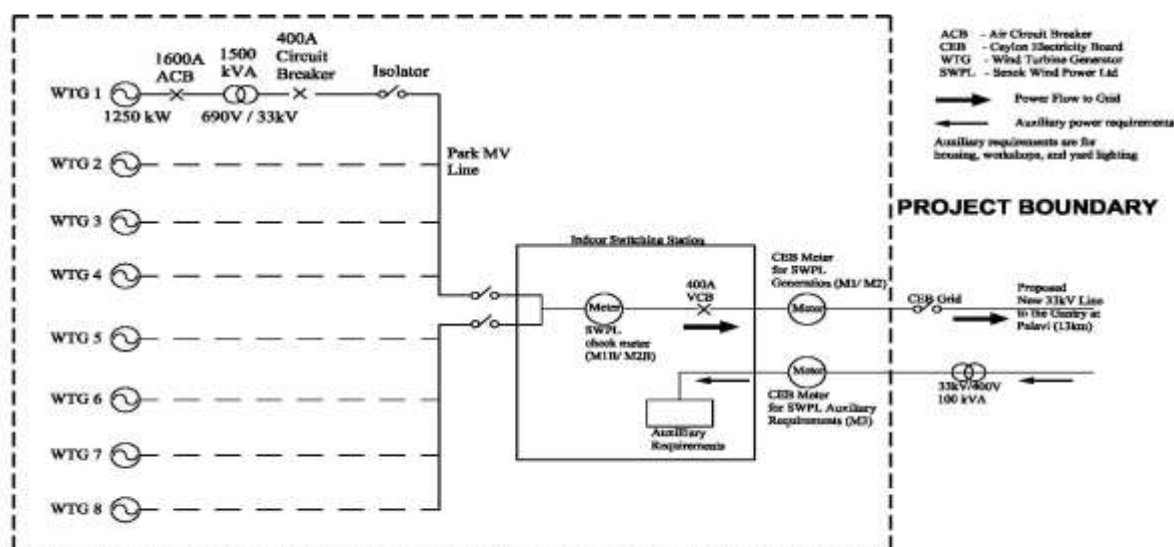
M1 and M2 are incorporated in the same meter housing. The meter calibration reports for M1/M2 done by the CEB have been provided and the results are given in section D2 below. There is a second meter located elsewhere, as described below.

For easier operational purposes, the M2 and M3 meters were amalgamated into one supply meter form January 2015 onwards. For this purpose, there is a January 2015 bill from CEB available, with a zero meter reading, confirming the cancellation of that supply line.

M3: This meter fixed by CEB will record the electricity purchased by this small scale project activity from the local distribution line. The meter calibration reports for M3 is also done by the CEB has been provided and the results are given in section D2 below

This electricity supply is a backup to serve the project, when there is a breakdown or servicing of the equipment at the point of supply at which M1 and M2 are located.

A diagrammatic representation of the implemented project activity and the project boundaries as per the monitoring plan has been enclosed below.



SECTION D. Data and parameters

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

(Copy this table for each piece of data and parameter)

Data/parameter:	$EF_{grid,CM,y}$
Unit	tCO ₂ /MWh
Description	Combined Margin Emission Factor
Source of data	Sales and Generation Data Books (2005, 2006, 2007)
Value(s) applied)	0.6791
Choice of data or measurement methods and procedures	
Purpose of data	For calculation of baseline emissions
Additional comments	This value is ex ante basis and remains during the monitoring period

Data/parameter:	$EF_{grid,OM,Y}$
Unit	tCO ₂ /MWh
Description	Simple operating margin CO ₂ emission factor in year y
Source of data	Sales and Generation Data Books (2005, 2006, 2007), Ceylon Electricity Board (CEB)
Value(s) applied)	0.6921
Choice of data or measurement methods and procedures	
Purpose of data	For calculation of baseline emissions
Additional comments	The value is calculated on ex-ante basis and it will remain same throughout the crediting period.

Data/parameter:	$EF_{grid,BM,y}$
Unit	tCO ₂ /MWh
Description	Build margin CO ₂ emission factor in year y
Source of data	Sales and Generation Data Books (2007), Ceylon Electricity Board (CEB)
Value(s) applied)	0.6405
Choice of data or measurement methods and procedures	
Purpose of data	For calculation of baseline emissions
Additional comments	The value is calculated on ex-ante basis and it will remain same throughout the crediting period.

D.2. Data and parameters monitored*(Copy this table for each piece of data and parameter)*

Data/parameter:	EG_v																														
Unit	kWh																														
Description	Quantity of net electricity supplied to the grid in a year																														
Measured/calculated/default	Calculated																														
Source of data	Gross energy sales to Ceylon Electricity Board and 2. Energy purchased from Ceylon Electricity Board																														
Value(s) of monitored parameter	48,124,300 kWh																														
Monitoring equipment	<p>Export Meter (M1)</p> <table border="1"> <tr><td>Serial No.</td><td>208307615</td></tr> <tr><td>Make</td><td>EDMI</td></tr> <tr><td>Model</td><td>3 phase 4 wire</td></tr> <tr><td>Type</td><td>PPM</td></tr> <tr><td>Accuracy class</td><td>1</td></tr> </table> <p>M1: Electricity exports to the project electricity system from the small scale CDM project activity</p> <p>Import Meter (M2)</p> <table border="1"> <tr><td>Serial No.</td><td>208307615</td></tr> <tr><td>Make</td><td>EDMI</td></tr> <tr><td>Model</td><td>3 phase 4 wire</td></tr> <tr><td>Type</td><td>PPM</td></tr> <tr><td>Accuracy class</td><td>1</td></tr> </table> <p>M2: Electricity imports from the project electricity system for requirements of the project activity, when the wind power plant is not in operation</p> <p>Import Meter (M3)</p> <table border="1"> <tr><td>Serial No.</td><td>209152126</td></tr> <tr><td>Make</td><td>EDMI</td></tr> <tr><td>Model</td><td>3 phase 4 wire</td></tr> <tr><td>Type</td><td>PPM</td></tr> <tr><td>Accuracy class</td><td>1</td></tr> </table> <p>M3: This meter fixed by CEB will record the electricity purchased by this small scale project activity from the local distribution line.</p>	Serial No.	208307615	Make	EDMI	Model	3 phase 4 wire	Type	PPM	Accuracy class	1	Serial No.	208307615	Make	EDMI	Model	3 phase 4 wire	Type	PPM	Accuracy class	1	Serial No.	209152126	Make	EDMI	Model	3 phase 4 wire	Type	PPM	Accuracy class	1
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Measuring/reading/recording frequency:	Continuous measuring, monthly recoding of the Meters																														
Calculation method (if applicable):	The value is calculated as the difference between Gross energy sales to CEB and Energy purchased from CEB																														

QA/QC procedures:	<p>QA/QC procedures for 1. Gross Energy Sales to Ceylon Electricity Board and 2. Energy purchased from Ceylon Electricity Board, apply to this parameter as well. These are cross- checked against invoices.</p> <p>Meter Calibration details:</p> <p>Export Meter (M1)</p> <table border="1"> <tr> <td>Date of Calibration</td><td>25/07/2011</td><td>04/09/2012</td><td>02/10/2013</td><td>05/08/2014</td></tr> <tr> <td>Percentage Error (%)</td><td>0.33</td><td>-0.03</td><td>-0.23</td><td>0.33</td></tr> </table> <p>Import Meter (M2)</p> <table border="1"> <tr> <td>Date of Calibration</td><td>25/07/2011</td><td>04/09/2012</td><td>02/10/2013</td><td>05/08/2014</td></tr> <tr> <td>Percentage Error (%)</td><td>0.33</td><td>-0.03</td><td>-0.23</td><td>0.33</td></tr> </table> <p>Import Meter (M3)</p> <table border="1"> <tr> <td>Date of Calibration</td><td>25/07/2011</td><td>04/09/2012</td><td>02/10/2013</td><td>05/08/2014</td></tr> <tr> <td>Percentage Error (%)</td><td>0.33</td><td>-0.03</td><td>-0.23</td><td>0.33</td></tr> </table>	Date of Calibration	25/07/2011	04/09/2012	02/10/2013	05/08/2014	Percentage Error (%)	0.33	-0.03	-0.23	0.33	Date of Calibration	25/07/2011	04/09/2012	02/10/2013	05/08/2014	Percentage Error (%)	0.33	-0.03	-0.23	0.33	Date of Calibration	25/07/2011	04/09/2012	02/10/2013	05/08/2014	Percentage Error (%)	0.33	-0.03	-0.23	0.33
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Percentage Error (%)	0.33	-0.03	-0.23	0.33																											
Purpose of data:	Calculation of baseline emissions																														
Additional comments:	The meter calibration is carried out annually by the CEB testing laboratories and the reports are then submitted to the Project developer.																														

Data/parameter:	EG_{imp,y}
Unit	kWh
Description	Energy purchased from CEB
Measured/calculated/default	Calculated (summation of (1) and (2))
Source of data	(1) Import register of the energy meter installed at the Point of Supply (POS) to the national grid and (2) Energy meter installed at the point of purchase of electricity from a local distribution line.
Value(s) of monitored parameter	130,745 kWh

Monitoring equipment	<p>1) The energy meter at the POS was installed and is maintained by Ceylon Electricity Board in accordance with the Small Power Purchase Agreement. The meter (M2) is read by CEB every month, in the presence of the SWPL representative.</p> <p>(2) The energy meter at the point of purchase is installed by Ceylon Electricity Board. This meter (M3) will be read by CEB every month.</p> <p>Import Meter (M2)</p> <table border="1" data-bbox="660 430 1228 591"> <tr><td>Serial No.</td><td>208307615</td></tr> <tr><td>Make</td><td>EDMI</td></tr> <tr><td>Model</td><td>3 phase 4 wire</td></tr> <tr><td>Type</td><td>PPM</td></tr> <tr><td>Accuracy class</td><td>1</td></tr> </table> <p>Import Meter (M3)</p> <table border="1" data-bbox="660 712 1228 873"> <tr><td>Serial No.</td><td>209152126</td></tr> <tr><td>Make</td><td>EDMI</td></tr> <tr><td>Model</td><td>3 phase 4 wire</td></tr> <tr><td>Type</td><td>PPM</td></tr> <tr><td>Accuracy class</td><td>1</td></tr> </table>	Serial No.	208307615	Make	EDMI	Model	3 phase 4 wire	Type	PPM	Accuracy class	1	Serial No.	209152126	Make	EDMI	Model	3 phase 4 wire	Type	PPM	Accuracy class	1
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Measuring/reading/recording frequency:	Calculated monthly - The import reading of the meter (M2) and M3 is read by CEB every month, in the presence of the SWPL representative. The meter continuously monitors, conduct hourly measurements and at least monthly recording.																				
Calculation method (if applicable):	M2 + M3 On a monthly basis, the sum of the total usage for the months, tabulated via meters M2 and M3 is considered as the total output of the project.																				
QA/QC procedures:	<p>The meter readings are checked against the monthly invoice issued to CEB. The accuracy of the meter installed is Class 1. The meter accuracy is tested (i.e. the meter shall be calibrated) by the CEB meter testing laboratory annually as specified in the Small Power Purchase Agreement. If at any time there is a concern about the accuracy, SWPL or CEB can request a test.</p> <p>Import Meter (M2)</p> <table border="1" data-bbox="518 1357 1450 1485"> <tr> <td>Date of Calibration</td> <td>25/07/2011</td> <td>04/09/2012</td> <td>02/10/2013</td> <td>05/08/2014</td> </tr> <tr> <td>Percentage Error (%)</td> <td>0.33</td> <td>-0.03</td> <td>-0.23</td> <td>0.33</td> </tr> </table> <p>Import Meter (M3)</p> <table border="1" data-bbox="518 1576 1450 1704"> <tr> <td>Date of Calibration</td> <td>25/07/2011</td> <td>04/09/2012</td> <td>02/10/2013</td> <td>05/08/2014</td> </tr> <tr> <td>Percentage Error (%)</td> <td>0.33</td> <td>-0.03</td> <td>-0.23</td> <td>0.33</td> </tr> </table>	Date of Calibration	25/07/2011	04/09/2012	02/10/2013	05/08/2014	Percentage Error (%)	0.33	-0.03	-0.23	0.33	Date of Calibration	25/07/2011	04/09/2012	02/10/2013	05/08/2014	Percentage Error (%)	0.33	-0.03	-0.23	0.33
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Date of Calibration	25/07/2011	04/09/2012	02/10/2013	05/08/2014																	
Percentage Error (%)	0.33	-0.03	-0.23	0.33																	
Purpose of data:	Calculation of baseline emissions																				

Additional comments:	<p>This measures the energy purchased from the national grid to satisfy the requirements of the Project. These requirements would generally be the requirements for lighting, transformer energisation and workshops, when the power output of wind turbines is low and inadequate to meet the requirements.</p> <p>As a backup to the energy meter M2 installed by CEB for contractual purpose, an additional meter (M2B) has been installed in the power plant at the expense of SWPL. This meter which is a part of the main panel, has a self calibration mechanism as confirmed by the independent agency contracted to calibrate the panel.</p> <p>For easier operational purposes, the M2 and M3 meters were amalgamated into one supply meter from January 2015 onwards. For this purpose, there is a January 2015 bill from CEB available, with a zero meter reading, confirming the cancellation of that supply line.</p>
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Data/parameter:	EG_{exp,y}										
Unit	kWh										
Description	Gross Energy Sales to Ceylon Electricity Board										
Measured/calculated/default	Measured										
Source of data	Export register of the energy meter installed at the Point of Supply (POS) to the national grid										
Value(s) of monitored parameter	47,993,555										
Monitoring equipment	<p>The energy meter has been installed and is being maintained by Ceylon Electricity Board in accordance with the Small Power Purchase Agreement.</p> <p>Export Meter (M1)</p> <table border="1"> <tr> <td>Serial No.</td><td>208307615</td></tr> <tr> <td>Make</td><td>EDMI</td></tr> <tr> <td>Model</td><td>3 phase 4 wire</td></tr> <tr> <td>Type</td><td>PPM</td></tr> <tr> <td>Accuracy class</td><td>1</td></tr> </table>	Serial No.	208307615	Make	EDMI	Model	3 phase 4 wire	Type	PPM	Accuracy class	1
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Model	3 phase 4 wire										
Type	PPM										
Accuracy class	1										
Measuring/reading/recording frequency:	Continuous monitoring and Monthly recording- The export reading of the main meter (M1) is read by CEB every month, in the presence of the SWPL representative. The meter will continuously monitor, conduct hourly measurements and at least monthly recording.										
Calculation method (if applicable):	Not applicable as it is a monitored parameter										

QA/QC procedures:	<p>The meter readings are checked against the monthly invoice issued to CEB. The accuracy of the meter installed is 1.0%. The meter accuracy will be tested (i.e. the meter shall be calibrated) by an independent agency, once a year, as specified in the Small Power Purchase Agreement. If at any time there is a concern about the accuracy, SWPL or CEB can request a test</p> <p>Export Meter (M1)</p> <table border="1" data-bbox="520 398 1439 526"> <tr> <td>Date of Calibration</td><td>25/07/2011</td><td>04/09/2012</td><td>02/10/2013</td><td>05/08/2014</td></tr> <tr> <td>Percentage Error (%)</td><td>0.33</td><td>-0.03</td><td>-0.23</td><td>0.33</td></tr> </table>	Date of Calibration	25/07/2011	04/09/2012	02/10/2013	05/08/2014	Percentage Error (%)	0.33	-0.03	-0.23	0.33
Date of Calibration	25/07/2011	04/09/2012	02/10/2013	05/08/2014							
Percentage Error (%)	0.33	-0.03	-0.23	0.33							
Purpose of data:	Calculation of Baseline Emissions										
Additional comments:											

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**

>>

 $BE_y = EG_y * EF_{grid,CM,y}$, where BE_y = Baseline Emissions in tCO₂e EG_y = Quantity of net electricity supplied to the grid [47,993,555 kWh] $EF_{grid,CM,y}$ = Combined Margin Emission factor - [0.6791 tCO₂/MWh] $BE_y = 47,993,555/1000 * 0.6791$ $BE_y = 32,592$ tCO₂e**E.2. Calculation of project emissions or actual net GHG removals by sinks**

>> Project emissions for the proposed project activity are zero

E.3. Calculation of leakage

>> Leakage is to be considered if the energy generating equipment is transferred from another activity, leakage is to be considered. Since there is no such transfer in the project activity, leakage will therefore be zero

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

Item	Baseline emissions or baseline net GHG removals by sinks (t CO ₂ e)	Project emissions or actual net GHG removals by sinks (t CO ₂ e)	Leakage (t CO ₂ e)	GHG emission reductions or net GHG removals by sinks (t CO ₂ e) achieved in the monitoring period		
				Up to 31/12/2015	From 01/01/2014	Total amount
Total	37536 (18768*2)	32,592	0			37536

E.5. Comparison of actual emission reductions or net 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 ₂ e)	37,536	32,592

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

>> As per the registered PDD - the estimated CO₂ emission reduction values are 18,768tCO₂/year. The estimated generation in the PDD is 27.638 GWh per year. The actual generation during the monitoring period is 48.124 GWh per year, where the total generation in 2014 was 25.528 GWh and 2015 had 22.595 GWh.

As there is a cyclical pattern, the mean wind speeds during this crediting period was lower than the estimations, hence the reduction in generation when compared to the predictions made.

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

Project participant and/or responsible person/ entity	<input checked="" type="checkbox"/> Project participant <input checked="" type="checkbox"/> Person/entity responsible for completing the CDM-MR-FORM
Organization name	Senok Wind Power (Pvt) Ltd
Street/P.O. Box	No. 3, R A De Mel Mawatha
Building	
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Contact person	
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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
05.1	4 May 2015	Editorial revision to correct version numbering.
05.0	1 April 2015	Revisions to: <ul style="list-style-type: none"> • Include provisions related to delayed submission of a monitoring plan; • Provisions related to the Host Party; • Remove reference to programme of activities; • Overall editorial improvement.
04.0	25 June 2014	Revisions to: <ul style="list-style-type: none"> • Include the Attachment: Instructions for filling out the monitoring report form (these instructions supersede the "Guideline: Completing the monitoring report form" (Version 04.0)); • Include provisions related to standardized baselines; • Add contact information on a responsible person(s)/ entity(ies) for completing the CDM-MR-FORM in A.6 and Appendix 1; • Change the reference number from <i>F-CDM-MR</i> to <i>CDM-MR-FORM</i>; • Editorial improvement.
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 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		