

VERIFICATION & CERTIFICATION REPORT

SENOK WIND POWER (PRIVATE) LTD

MAMPURI WIND POWER PROJECT
(UNFCCC Ref. No. 9074)

Monitoring Period
(01/01/2013 to 31/12/2013)

REPORT No.
CDM.14.VER.004 (1).MP01

Date of this issue: 03/11/2014	KBS Ref. No.: CDM.14.VER.004 (1).MP01		
Project Title:	Mampuri Wind Power Project		
Organization:	KBS Certification Services Pvt. Ltd.		
Client:	Senok Wind Power (Private) Ltd		
Monitoring Period:	01/01/2013 to 31/12/2013 (including both dates)		
Summary:			
<p>KBS Certification Services Pvt. Ltd. has performed the first verification of the CDM project Mampuri Wind Power Project and UNFCCC Ref. Number 9074. The verification includes confirming the implementation of the monitoring plan of the registered PDD and the application of the monitoring methodology as per AMS I.D. "Grid Connected Renewable Electricity Generation" Version 17. A site visit was conducted to check the implementation of registered monitoring plan and verify the data submitted in the monitoring report. KBS confirms the following has been reviewed;</p> <ul style="list-style-type: none"> (a) The registered PDD and the monitoring plan, including any approved revised monitoring plan and/or changes from the registered PDD, and the corresponding validation opinion; (b) The validation report; (c) The applied monitoring methodology(ies); (d) The monitoring report to verify that it is as per the standardized format; (e) Any other information and references relevant to the project activity's emission reductions (e.g. IPCC reports, data on electricity generation in the national grid or laboratory analysis and national regulations); (f) CER calculations sheets and all supporting documents; (g) Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board; <p>KBS Certification Services Pvt. Ltd. confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements.</p> <p>Based on the information seen and evaluated we confirm that the implementation of the project has resulted in 19,150 tCO₂e emission reductions during period 01/01/2013 up to 31/12/2013.</p>			
Subject Group: CDM Verification (VVS V5)	Sectoral Scope(s): 1	Methodology: AMS I.D Version 17	
Verification Team:		Monitoring report:	
Team Leader	Shreya Garg	First version	28/05/2014
Local Expert	Pathmanatha Poddwala	Final version	22/09/2014
Technical Expert (1.2)	Shreya Garg		
Independent Technical Reviewer Team:		Verification status:	
Date	03/11/2014	<input type="checkbox"/> Findings not closed.	
Technical Reviewer	Sanjay Kandari	<input type="checkbox"/> Draft verification opinion	
Technical Expert (1.2)	Sanjay Kandari	<input checked="" type="checkbox"/> Final verification opinion	
Manager T&C	Gagandeep Kakkar		
Date	04/11/2014		
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06/08/2014	0	[X]	
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Abbreviations

BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CERs	Certified Emission Reductions
CEB	Ceylon Electricity Board
CL	Clarification Request
CO ₂ e	Carbon dioxide equivalent
COP	Conference of Parties
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
ERs	Emission Reductions
FAR	Forward Action Request
GHGs	Greenhouse Gas(es)
ISO	International Organization of Standardization
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
kWh	Kilo Watt Hour
LE	Leakage Emissions
MR	Monitoring Report
MP	Monitoring Plan
MWh	Mega Watt Hour
PE	Project Emissions
PDD	Project Design Document
PLF	Plant Load Factor
PS	Project Standard
PCP	Project Cycle Procedure
SPPA	Small Power Purchase Agreement
QA/QC	Quality Assurance/Quality Control
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation & Verification Standard

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1. INTRODUCTION

1.1 Objective

KBS has been commissioned by Senok Wind Power (Private) Ltd to perform an independent verification of its registered CDM project, "Mampuri Wind Power Project", UNFCCC ref. no. 9074 for the reported GHG emission reductions for the given monitoring period 01/01/2013 up to 31/12/2013 (both dates included). The CDM projects must undergo independent third party verification and certification of emission reductions as the basis for issuance of Certified Emission Reductions (CERs).

The objectives of this verification exercise are, by review of objective evidence, to establish that:

- The project activity has been implemented and operated as per the registered PDD and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place;
- Monitoring report and other supporting documents are complete;
- The actual monitoring systems & procedures and monitoring report conforms with the requirements of the approved monitoring plan and the approved monitoring methodology;
- The data is recorded and stored as per the monitoring methodology and approved monitoring plan.

1.2 Scope

The scope of the verification is the independent and objective review and ex post determination of the monitored reductions in GHG emission by the project activity. The verification is based on review of monitoring report, supporting information and

- (a) The registered PDD, including the monitoring plan and the corresponding validation opinion(s);
- (b) Previous verification reports, deviation requests, requests for revision of monitoring plan;
- (c) Monitoring report for the monitoring period under verification including CER calculations sheets and all supporting documents;
- (d) The applied monitoring methodology;
- (e) Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board;
- (f) All information and references relevant to the project activity's resulting in emission reductions

The project is assessed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures and related rules and guidance.

KBS has, based on the recommendations in the version 5 of CDM Validation and Verification Standard, employed a rule-based approach in the verification, focusing on the identification of significant reporting risks and the reliability of project monitoring.

1.3 Description of the Project Activity

Project Parties:	Sri Lanka (Host country)
Title of project activity:	Mampuri Wind Power Project
UNFCCC Registration No:	9074
Registration date:	21/12/2012
Applied methodology:	AMS I. D Version 17.0
Start date of crediting period:	01/01/2013
Project Participants:	Senok Wind Power (Private) Ltd

Location of the project activity:	Village: Mampuri Local Authority: Kalpitiya Pradeshiya Sabha District: Puttalam Province: North Western Country: Sri Lanka
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The project harnesses wind energy for producing electricity which is fed to the regional grid located in Mampuri in District Puttalam of North Western Province in Sri Lanka. The project activity has installed eight numbers of S64-1250 kW wind electricity generators resulting in a capacity of 10 MW from the project activity. The purpose of the project activity is to generate electricity from renewable wind energy that is clean power in turn displacing non-renewable natural resources; leading to sustainable, economic and environmental development in the region.

The verification is done against the claimed total emission reductions of 19,150 tCO₂e achieved during the monitoring period 01/01/2013 up to 31/12/2013 (including first and last day).

2. METHODOLOGY

KBS follows a rule based verification approach, wherein, as a first step, the contract review is undertaken as per latest version of CDM Accreditation Standard. Subsequently, after the contract is signed, the monitoring report of the project activity is made publicly available at UNFCCC website as per CDM procedures.

A desk review of the project documentation is undertaken, which is followed by an onsite visit by the members of verification team in accordance with the latest version of CDM AS. The verification protocol is filled by the verification team that is based on standard auditing practices and version 5 of CDM VVS, to capture the assessment of applicable CDM requirements viz., version 5 of CDM Project Standard, registered PDD, applied methodology/ies and/or tools and recent decisions. The verification protocol provides transparent means to record the observations and compliances by the verification team members and the nonconformities, if any. The verification protocol is an internal document, and is available on request. Following are the major milestones for the verification under consideration.

Duration of verification

Verification Contract	28/05/2014
Publication of MR	03/06/2014
On site verification	19/06/2014
Draft Verification Report	06/08/2014
Final Verification Report	03/11/2014

2.1 Review of Documentation

A desk review is undertaken, involving but not limited to,

- A review of the data and information presented to verify their completeness;
- A review of the monitoring plan and monitoring methodology, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures;
- An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

The list of documents reviewed is included in the section 'References'

2.2 Site Visits

A site visit is undertaken by members of verification team, involving but not limited to,

- An assessment of the implementation and operation of the proposed CDM project activity as per the registered PDD;
- A review of information flows for generating, aggregating and reporting the monitoring parameters;
- Interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the approved monitoring plan;
- A cross-check between information provided in the monitoring report and data from other sources such as plant log books, inventories, purchase records or similar data sources;
- A check of the monitoring equipment, including calibration performance and observations of monitoring practices against the requirements of the PDD and the selected methodology;
- A review of calculations and assumptions made in determining the GHG data and emission reductions;
- An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

The site visit for this verification assessment was undertaken by Shreya Garg (Team Leader & Technical Expert (1.2)) and Pathmanatha Poddimala (Local Expert) and details are mentioned below;

Location	Village: Mampuri Province: North Western District: Puttalam Local Division: Kalpitiya	
Dates	19/06/2014	
Key points discussed	Name of person interviewed	Designation, Organization
Operational data	K. Chandra Kant	Senior Superintendent, Senok Wind Power (Pvt.) Ltd
Calibration	K. Chandra Kant	Senior Superintendent, Senok Wind Power (Pvt.) Ltd
Data collection	Rozanne Moraes	Project Manager, Senok Wind Power (Pvt.) Ltd
QA/QC procedures	K. Chandra Kant	Senior Superintendent, Senok Wind Power (Pvt.) Ltd
Calculation of ERs	Rozanne Moraes	Project Manager, Senok Wind Power (Pvt.) Ltd
CDM requirements	Rozanne Moraes	Project Manager, Senok Wind Power (Pvt.) Ltd

2.3 Reporting of Findings

During the course of verification the findings may be raised as under;

CAR is raised if one of the following occurs:

- Non-compliance with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;
- Issues identified in a FAR during validation to be verified during verification(s) have not been resolved by the project participants.

Clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

FAR is raised during verification if the monitoring and reporting require attention and/or adjustment for the next verification period.

The verification report contains (section 7) all CARs, CLs and FARs raised during this verification in transparent manner and provides clear information of the issues raised, response received and its resolutions, including the changes in the documents. Additionally, major changes between the webhosted MR and final MR are presented under Section 6 (below the Reference) for easy reference.

2.4 Verification Assessment

Based on the desk review and site visit the team leader fills in the verification protocol to identify and record the findings in the context of the project activity. The findings are communicated to the client in the findings document (section 7 of report). The project documentation, including responses to the findings is reviewed by the team leader in consultation with team members, wherever appropriate. The team leader prepares the draft verification report subject to closure or non closure of the findings.

2.5 Internal Quality Control

The draft verification report prepared by team leader is reviewed by an independent technical reviewer (having competence of relevant technical area himself/herself or through an independent technical area expert) to confirm the internal procedures established by KBS are duly followed and

the verification report/opinion is reached in an objective manner and complies with the applicable CDM requirements.

The independent technical reviewer may approve or reject the draft verification report. The findings may be identified even at this stage, which needs to be satisfactorily resolved, before the request for issuance is submitted to UNFCCC. The final decision is taken by the Manager Technical and Certification. The technical reviewer and Manager T&C can be same person.

The final decision is authorized by Managing Director, KBS once the report is approved by the Manager T&C.

3. VERIFICATION FINDINGS

3.1 Remaining Issues (FARs from Previous Validation or Verification)

Discussion:

The current verification is the first verification for the project activity and the project has been successfully registered. A FAR#14 to confirm the implementation of the monitoring plan was raised during the validation and related to the verifying DoE to confirm the monitoring arrangement in line with the registered PDD. The CAR#11 was raised during this verification to address the FAR#14 raised during the validation and closed satisfactorily. The assessment team during the onsite verification verified the metering setup and project implementation with the information provided in the registered PDD. The metering position was same as defined in the SPPA signed and commissioning certificates issued for the project activity and the team is of the opinion that the monitoring plan is being followed at the site. However the calibration was not carried out at the specified duration which has been covered under the forth coming sections.

3.2 Compliance of project implementation with registered PDD

Discussion:

The project activity comprises 8 WTGs of 1.25 MW each of Suzlon S-64 make aggregating to a capacity of 10 MW. All the WTGs of the project activity got commissioned on 14/05/2010 and the dates of commissioning were verified from the Commissioning certificate issued by Transmission Division of Energy Purchases; Ceylon Electricity Board for the project activity^{/6/}. The WTGs have been in operation during the current monitoring period in compliance with the description provided in the registered PDD^{/1/}.

The entire project WTGs contain a unique location identification number as mentioned in Section A.2 of the MR^{/2/}, verified from the respective Project handing over checklist. The location numbers are associated with the geo-coordinates of the individual WTG. The information related to commissioning of WTGs were checked against the respective commissioning certificates^{/6/} issued by Ceylon Electricity Board (CEB) and found in order. The WTG rated capacity, location/identification number, make, meter serial number and make etc. were verified from the name plates and technical specification^{/13/} and found to be consistent. The electricity generated from the project is fed into the regional grid^{/12/}. The electricity produced is measured by the main meter owned by CEB located in the metering yard at the project site.

Findings:

CAR#01, CAR#02, CAR #03 and CAR#10 were raised. please refer section 7 of this report where the same is discussed completely.

Opinion:

The implementation and operation of the project activity has been assessed against the registered PDD.

- a) The project activity consist of 8 Wind Turbine Generators of 1.25 MW commissioned on 14/05/2010 in Mampuri verified from the commissioning certificate^{/6/} and during the on-site assessment.
- b) The implementation is in line with the registered PDD^{/1/}.
- c) There is no deviation, revision in monitoring plan or notification/request for approval for the changes from the description in the registered PDD in the current monitoring period.
- d) There is an increase in CERs observed in comparison of actual values of the emission reductions (19,150 tCO₂e) achieved during the current monitoring period with the estimations (18,768 tCO₂e) in the registered PDD^{/1/} for comparable period (12 months). The increase in the emission reduction is merely 2% due to the higher PLF (beyond the control of PP). The

PLF/generation for the current monitoring period is well within the sensitivity zone and does not impact the additionality, scale and applicability of the applied methodology of the project activity.

- e) In accordance with para. 225 of VVS version 05.0^{14/} the verification team checked the registered PDD, including the monitoring plan and the corresponding validation report, the applied monitoring methodology, relevant decisions from the CMP and the CDM EB and found that the MR for this monitoring period is line with all the mentioned documents.

3.3 Compliance of monitoring plan with the monitoring methodology including applicable tool(s)

Discussion:

The monitoring parameters included in the monitoring report^{2/} allow determination of proper emission reduction in the context of the project activity. This was verified through the monitoring plan in registered PDD and the same was found to be in accordance with the referred applied methodology AMS 1D, Version 17^{3/}.

Opinion:

The monitoring plan mentioned in the registered PDD is in line with the applied methodology AMS 1D, Version 17^{3/}. The monitoring mechanism is in line with the methodology and is effective and reliable.

3.4 Post registration changes, if any

Discussion:

There were no changes found in the implementation of the project activity from the registered PDD. Therefore, this section is not applicable

3.5 Compliance of monitoring activities with registered monitoring plan

3.5.1. Data/Parameter, Unit: EG_y, kWh

Quantity of net electricity supplied to the grid in a year

	Discussion and verification assessment
Purpose of data	Baseline emissions
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	This is a calculated parameter resultant of the gross electricity exported to CEB and energy purchased from CEB.
Measuring/Reading/Recording frequency	Calculated monthly
Data collection (from data generation, aggregation, to recording, calculation and reporting)	The values are calculated on a monthly basis in excel sheets based on the preceding parameters.
Verified value	28,199,921 kWh
Cross checks	The values have been verified from the invoices issued by the project participant that form the basis of monetary transactions. The invoices have been accepted as appropriate and valid checks by the assessment

	team and all values are found consistent amongst all the documents.
QA/QC procedures applied	Calibration of the energy meters has been mentioned annually in the registered documents and also the PPA requires calibration to be annually. Project participants have followed the calibration requirements. The details of the calibration are provided in section 3.6 of the report.

3.5.2. Data/Parameter, Unit: $EG_{imp,y}$, kWh

Energy purchased from CEB

	Discussion and verification assessment																
Purpose of data	Baseline emissions																
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	<p>The electricity is being imported by project activity at two locations and is being recorded at both the locations by CEB owned meters. The details of the meters are as follows:</p> <table border="1"> <tr> <td>Make</td><td>EDMI</td></tr> <tr> <td>Serial No.</td><td>208307615</td></tr> <tr> <td>Type of Meter</td><td>PPM</td></tr> <tr> <td>Accuracy class</td><td>1</td></tr> </table> <table border="1"> <tr> <td>Make</td><td>EDMI</td></tr> <tr> <td>Serial No.</td><td>209152126</td></tr> <tr> <td>Type of Meter</td><td>PPM</td></tr> <tr> <td>Accuracy class</td><td>1</td></tr> </table>	Make	EDMI	Serial No.	208307615	Type of Meter	PPM	Accuracy class	1	Make	EDMI	Serial No.	209152126	Type of Meter	PPM	Accuracy class	1
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Measuring/Reading/Recording frequency	The reading are monitored continuously and recorded monthly by CEB officials in presence of an SWPL representative.																
Data collection (from data generation, aggregation, to recording, calculation and reporting)	<p>The data recording by CEB meters occurs at two locations</p> <ol style="list-style-type: none"> (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. <p>An invoice reflecting the imported electricity is raised separately for both locations based on which the monthly payments are done by the PP. The invoices raised against which the payment was done were checked by the assessment team and the values were found consistent.</p>																
Verified value	69,307 kWh																
Cross checks	<p>The readings are recorded from the meters on a monthly basis which get converted in the form of invoices billable to client. The readings from the emission reduction calculation sheet have been checked from these invoices. Also the receipt of the invoice has been used as a cross check which confirms that the monetary transaction has taken place on this invoice.</p> <p>Assessment team is satisfied with the evidences provided.</p>																
QA/QC procedures applied	Calibration of the energy meters has been mentioned annually for meter M2 in the registered documents and also the PPA requires calibration to be annually. Meter M3 was required to be calibrated once in three years, The prior details of calibration could not be traced and the delayed calibration after the monitoring period was conducted by the CEB on the request of PP. This is to be noted that the control of energy meters is beyond the control of PP. The maximum permissible error for the entire monitoring period for the M3 meter was applied as the error in the delayed calibration was within the permissible limits. Project participants have followed the calibration requirements but there is a slight delay in																

	the calibration of M2 energy meter also and the error for the delay was applied by the PP in line to the VVS. The details of the calibration are provided in section 3.6 of the report.
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3.5.3. Data/Parameter, Unit: EG_{exp,y}, kWh

Gross Energy Sales to Ceylon Electricity Board

	Discussion and verification assessment								
Purpose of data	Baseline emissions								
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	<p>The electricity is being exported by project activity to the regional grid and is being recorded at the project locations by CEB owned meter. The details of the meters are as follows:</p> <table border="1"> <tr> <td>Make</td><td>EDMI</td></tr> <tr> <td>Serial No.</td><td>208307615</td></tr> <tr> <td>Type of Meter</td><td>PPM</td></tr> <tr> <td>Accuracy class</td><td>1</td></tr> </table>	Make	EDMI	Serial No.	208307615	Type of Meter	PPM	Accuracy class	1
Make	EDMI								
Serial No.	208307615								
Type of Meter	PPM								
Accuracy class	1								
Measuring/Reading/Recording frequency	The reading are monitored continuously and recorded monthly by CEB officials in presence of an SWPL representative.								
Data collection (from data generation, aggregation, to recording, calculation and reporting)	The data recording by CEB meters occurs at site at export register of the energy meter installed at the Point of Supply (POS) to the national grid. An invoice reflecting the imported electricity is raised based on which the monthly payments are done by the PP. The invoices raised against which the payment was done were checked by the assessment team and the values								
Verified value	28,269,228 kWh								
Cross checks	<p>The readings are recorded from the meters on a monthly basis which get converted in the form of invoices billable to the authority. The readings from the emission reduction calculation sheet have been checked from these invoices. Also the receipt of the invoice has been used as a cross check which confirms that the monetary transaction has taken place on this invoice.</p> <p>There is also a back up meter which is PP owned M1B as mentioned in the monitoring plan. The reading for the corresponding period have been cross checked from the log books maintained for this meter. From the difference of the reading noted on the first and last day of the month gross electricity exported for a month could be observed. These values are comparable to the values in the excel sheet.</p> <p>Assessment team is satisfied with the evidences provided.</p>								
QA/QC procedures applied	Calibration of the energy meters has been mentioned annually in the registered documents and also the PPA requires calibration to be annually. Project participants have followed the calibration requirements but there is a slight delay in calibration, the error for the delay was applied by the PP in line to the VVS. The details of the calibration are provided in section 3.6 of the report.								

Findings:

CL#04 & CAR #07, please refer section 7 of this report where the same is discussed completely

Opinion:

The assesment team concludes that the monitoring of the project activity is being carried out in accordance with the registered monitoring plan^{1/} and meets the requirements of the applied monitoring methodology^{3/} The provisions defined in the monitoring plan allows proper determination

of the net electricity exported. The adequacy and compliance of the registered monitoring plan in the MR can be concluded to be conforming. The flow of the information from the point of generation up to reporting has been reviewed and found to be correct and appropriate meeting the requirements of the applied methodology.

3.6 Compliance with the calibration frequency requirements for measuring instruments

The applied monitoring methodology AMS I D version 17^{3/} does not specify exact requirements for calibration of the measuring equipment but recommends following the relevant industry standards. The calibration frequency defined in the registered monitoring plan^{1/} is annual for meter M1 and M2 and once in three years for meter M3, which is in accordance with the provisions defined by the CEB. The calibration of the meters is in the purview of CEB which is done on annual basis by its representatives in presence of the representatives of PP. The details of the calibration are as follows for M1 and M2:

Energy Meter	Percentage error (%)	Date of calibration	Validity of calibration
M1 & M2 (S.N. 208307615)*	-0.03	04/09/2012	03/09/2013
M1 & M2 (S.N. 208307615)*	-0.23	02/10/2013	01/10/2014

*M1 & M2 is a single bidirectional meter.

Delay has been observed in the calibration of the meter. PP in accordance with, para 237 add 238 of Validation and Verification Standards, Version 5 has applied a correction factor of 1% (permissible error which is higher in this case).

Meter M3 is a separate meter with a calibration frequency of once in three years, however the previous calibration details could not be traced and calibration was conducted on PP's request by the CEB. The error detected was lesser than the permissible error of 1% therefore the permission error (1%) correction factor has been applied for the entire monitoring period.

Energy Meter	Percentage error (%)	Date of calibration
M3 (S.N. 209152126)	0.33	05/08/2014

Findings:

CAR #07, please refer section 7 of this report where the same is discussed completely

3.7 Data not monitored (ex ante or external parameters)

3.7.1. Data/Parameter, Unit: $EF_{grid,CM,y}$, tCO_2/MWh

Combined Margin Emission Factor

	Discussion and verification assessment
Purpose of data	Baseline emissions
Verified value	0.6791
Source of value	Sales and Generation Data Books (2005, 2006, 2007)
Justification	The value was calculated in accordance with the tool at the time of project registration and had been fixed.

3.7.2. Data/Parameter, Unit: $EF_{grid,OM,Y}$, tCO_2/MWh

Simple operating margin CO₂ emission factor in year y

	Discussion and verification assessment
Purpose of data	Baseline emissions
Verified value	0.6921
Source of value	Sales and Generation Data Books (2005, 2006, 2007)
Justification	The value was calculated in accordance with the tool at the time of project registration and had been fixed.

3.7.3. Data/Parameter, Unit: $EF_{grid,BM,y}$, tCO₂/MWh

Build margin CO₂ emission factor in year y

	Discussion and verification assessment
Purpose of data	Baseline emissions
Verified value	0.6405
Source of value	Sales and Generation Data Books (2005, 2006, 2007)
Justification	The value was calculated in accordance with the tool at the time of project registration and had been fixed.

Discussion:

Emission factor was calculated using the “Tool to calculate the emission factor for an electricity system”, in the registered PDD. The value is calculated as the weighted average of the operating margin and build margin and kept fixed at the time of registration. The value is consistent in the MR^{/2/} and the registered PDD^{/1/}.

Findings:

CAR #05 and CAR#06, please refer section 7 of this report where the same is discussed completely

Opinion:

In the opinion of assessment team, the assumptions, emission factors and default values that were applied in the calculations have been justified.

3.8 Assessment of Data & calculation of GHG Emission Reductions

The provisions for metering and meter inspection, testing and checking are done as per the requirement of CEB and the Power Purchase Agreement^{/12/}. The energy generated at the wind farm is metered and measured by CEB officials and SWPL representative on a monthly basis. SWPL translates the energy transported by the project activity in the form of invoices^{/10/}. This electricity otherwise would have been generated from fossil fuels, hence it forms the basis for calculation of emission reductions.

Baseline emission (BE_y) is the electricity delivered to the grid by the project and is calculated as follows:

$$BE_y = EG_y * EF_{grid,CM,y}$$

Where,

EG_y = Quantity of net electricity supplied to the grid

EF_{grid,CM,y} = Combined Margin Emission factor

Therefore,

$$BEy = 28,199,921/1000 * 0.6791$$

$$BEy = 19,150 \text{ tCO}_2$$

Project Emissions (PEy)

The project activity is a renewable energy project which generates electricity using wind power therefore there are no resulting project emissions.

Leakage Emissions (Ly) are zero.

Emission Reductions (ER) achieved for the monitoring period 01/01/ 2013 to 31/12/2013 are:

$$ERy = BEy - PEy - Ly$$

$$ERy = 19,150 \text{ tCO}_2e - 0 - 0$$

$$ERy = 19,150 \text{ tCO}_2e$$

This can be observed that the reported emission reductions resulted higher than that estimated in the registered PDD^{1/} i.e. 19,150 tCO₂e for corresponding monitoring period (12 months). The percentage difference in the estimated emission reductions and achieved reductions is only 2%. This is a slight difference owing to extreme weather conditions during the monitoring period resulted in a higher PLF. The higher energy generation is not impacting the additionality of the project activity and is very well covered within the sensitivity range as well as the scale and applicability of methodology of the project activity are not impacting. Therefore the verification team confirms that the emission reductions are real and measurable.

Findings:

CAR #09 and CL#08, please refer section 7 of this report where the same is discussed completely

Opinion:

The verification team confirms that

- (a) The complete data set for the monitoring parameters was available as prescribed in the monitoring plan of the registered PDD
- (b) The cross check, for each monitored parameter has been included separately and were found complying the requirements in the monitoring plan of the registered PDD
- (c) Appropriate methods and formulae for calculating baseline emissions, project emissions and leakage have been followed
- (d) The assumptions, emission factors and default values that were applied in the calculations have been justified.
- (e) The final MR template has all the information as prescribed in the Instruction for filling out the monitoring report form, and is as per the valid standardized template Version 4.0.

3.9 Assessment of GHG Emission Reductions in first and second commitment period

Not applicable for the first commitment period as the crediting period starts from 01/01/2013. For the second commitment period the total emission reductions are verified as 19,150 t CO₂e.

3.10 Quality of Evidence to Determine Emission Reductions

Evidences (Documents/interview/site visit) referred for verification of individual monitoring parameter and fixed parameters are defined in section 3.5 and section 3.7 respectively. It is confirmed by the assessment team that the reported emission reductions have been conservatively calculated. A list of referred documents for verification is also included in section 6 of this report

3.11 Management System and Quality Assurance

The operation and maintenance of the project activity is carried out by the WTG supplier, which is Suzlon Energy in this case. The monitoring of the project activity is also done by the same entity. The responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan. It is therefore concluded that the CDM project along with its management system is in place and properly executed.

3.12 Application of Materiality

Discussion:

The prescribed thresholds for materiality, as per para 10 of EB69 Annex6 is 2.0% as the emission reductions for the project activity are lesser than 300,000 tons of carbon dioxide and it is a large scale project activity.

Prescribed range of ERs/annum	500,000+	300,000+ to 500,000	300,000	SSC PAs	MSC PAs
Prescribed Threshold	0.5%	1.0%	2.0%	5.0%	10.0%

The identified/selected materiality threshold for the project activity under current monitoring period.

	MR Version (First)	MR Version (Final)
Emission reductions/annum	20,334	19,150
Identified Threshold	5.0%	5.0%

The risk assessment of parameters (fixed and monitored) with referencing to impact on ERs, type of error expected and development of the audit plan.

Parameter	Impact on ERs?	Significance of Impact (H, M, L)	Justification for significance	Type of errors expected	Remarks
EG_y	Yes	High	The parameter is the net electricity supplied by the project activity. This parameter is multiplied with the emission factor (fixed ex-ante) to achieve to the final value of emission reductions.	Isolated	The data monitoring of the parameters is done through electronic meters and errors can occur during the information transfer from the source to the emission reduction sheet.
EG_{imp}	Yes	High	The parameter is the electricity imported by the project activity.	Isolated	The data monitoring of the parameters is done through electronic meters and errors can

					occur during the information transfer from the source to the emission reduction sheet.
EG_{exp,y}	Yes	High	The parameter is the electricity exported by the project activity.	Isolated	The data monitoring of the parameters is done through electronic meters and errors can occur during the information transfer from the source to the emission reduction sheet.

The applied audit/sampling plan, if there is impact on ERs, and confirmation with regard to individual and aggregate level for the claimed emission reductions.

Complete data was checked,

Parameter	Population size	Sample size	Type of error identified	Impact on ERs	
				Extrapolated for population size (Qty and %)	Within Threshold
EG_y	12	100%	Isolated	Not applicable as whole data was checked.	NA
EG_{imp,y}	24	100%	Isolated		NA
EG_{exp,y}	12	100%	Isolated		NA

Opinion:

The complete dataset for the project activity was checked and it can be confirmed that the values are consistent with their sources. The assessment team confirms that the verified emission reductions are free from material errors, omissions or misstatements.

4. RECOMMEDATIONS / FORWARD ACTION REQUEST

There are no recommendations/FAR raised for the project activity

5. VERIFICATION & CERTIFICATION STATEMENT

KBS Certification Services Pvt. Ltd. has been contracted by Senok Wind Power (Private) Ltd to undertake independent verification and certification for the greenhouse gas (GHG) emission reductions reported from the Mampuri Wind Power Project, UNFCCC Ref. No. 9074 for the monitoring period 01/01/2013 up to 31/12/2013 in the Monitoring Report Version 01 dated 28/05/2014.

The verification is based on the registered/accepted revised PDD and the monitoring report for this project. Our verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakech accord, as well as those defined by the CDM Executive Board.

The management of the Senok Wind Power (Private) Ltd is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project Final Monitoring Report Insert Version 04 dated 22/09/2014. The calculation and determination of GHG emission reductions from the project is the responsibility of the management of the Senok Wind Power (Private) Ltd. The development and maintenance of records and reporting procedures are in accordance with the Monitoring Report Version 04 dated 22/09/2014.

It is our responsibility to express an independent GHG verification opinion on the GHG emissions and on the calculation of GHG emission reductions from the project for the monitoring period 01/01/2013 up to 31/12/2013 based on the reported emission reductions in the Final Monitoring Report Version 04 dated 22/09/2014 for the same period.

Based on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these, KBS planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence for us to give reasonable assurance that this reported amount of GHG emission reductions for the period is fairly stated.

KBS confirms the following;

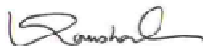
Reporting period: From 01/01/2013 up to 31/12/2013

Verified and certified emission in the above reporting period:

	Amount	Unit
Baseline emissions (BE)	19,150	tCO ₂ e
Project emissions (PE)	0	tCO ₂ e
Leakage emissions (LE)	0	tCO ₂ e
Certified emission reductions (CERs)	19,150	tCO ₂ e

Location: Faridabad, India

Date: 04/11/2014



Kaushal Goyal

Managing Director

KBS Certification Services Pvt. Ltd.

6. REFERENCES

/1/	Project Design Document (Registered)
/2/	/2.1/ Monitoring Report version 1.0 dated 28/05/2014 (Webhosted) /2.2/ Monitoring Report version 2.0 dated 24/06/2014 /2.3/ Monitoring Report version 3.0 dated 03/09/2014 /2.4/ Monitoring Report version 4.0 dated 22/09/2014 (Final)
/3/	AMS I.D. Version 17, "Grid Connected Renewable Electricity Generation"
/4/	/4.1/ ER Sheet corresponding to publically available MR /4.2/ ER Sheet corresponding to version 2 of MR /4.3/ ER Sheet corresponding to final MR
/5/	Invoices for the period January 2013 to December 2013 against the net electricity supplied to the CEB.
/6/	Commissioning certificate issued by Transmission Division of Energy Purchases; Ceylon Electricity Board dated 19/07/2010
/7/	Calibration certificates for Meter M1, M2 and M3 (M1 and M2 is one bidirectional meter) <ul style="list-style-type: none"> • Certificate for meter serial no. 208307615 dated 25/07/2011 (M1&M2) • Certificate for meter serial no. 208307615 dated 04/09/2012 (M1&M2) • Certificate for meter serial no. 208307615 dated 02/10/2013 (M1&M2) • Certificate for meter serial no. 209152126 dated 05/08/2014 (M3)
/8/	CEB monthly invoices for the period 01/01/2013 to 31/12/2013
/9/	Monthly generation reports issued by Suzlon for the period January 2013 to December 2013.
/10/	Daily log books for the period 01/01/2013 to 31/12/2013 as a crosscheck of net electricity supplied to the grid.
/11/	Onsite assessment including physical verification of measuring & monitoring procedure, interviews and data/log review,
/12/	Small Power Purchase Agreement (SPPA) signed between SWPL and CEB.
/13/	Technical specification brochure for WTGs
/14/	Validation and Verification Standard version 05.0
/15/	Operation and maintenance agreement between SWPL and Suzon
/16/	UNFCCC website: https://cdm.unfccc.int/Projects/DB/SGS-UKL1356108963.64/view , web link to confirm date of registration.

Key difference between webhosted MR and final MR (indicative not exhaustive)

MR Section	Description of the change
A.1	Description has been revised
A.2	Physical location has been mentioned
B.1	Details about commissioning have been mentioned.
D.1	All ex ante parameters have been included.
D.2	Details of the parameters have been appropriately added
E.1	Calculation have been inserted in the revised MR
E.6	Remarks on difference in emission reductions have been elaborated.
Complete	MR template has been revised.

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7. FINDINGS DOCUMENT

Summary of findings	CAR	CL	FAR
	09	02	00

Date	Type & Number	Raised by	Reference
19/06/2014	CAR 01	Assessment Team	D-30

Non conformities raised

Section A.1 of the MR is incomplete and does not comply with the latest version of "Guideline: Completing the monitoring report Form.

Project participant response

Date: 24/06/2014

The document has been amended to comply with the above mentioned guidelines.

(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.

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 will take place at the panel room of the project, where all eight WTGs will be connected. The metering of the project is done by the CEB, and at the commissioning of the project, the officials from the CEB will connect the meters for the metering to be done 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

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

The power plant generated a net energy output of 28,270,032 kWh during the monitoring period, and hence the total CERs for the year was 19,198 tCO₂/yr.

Documentation Provided as Evidence by Project Participant		
Revised MR		
Information Verified by Lead Assessor	Date of review: 08/07/2014	
Revised MR		
Reasoning for not acceptance or close out		
The information provided in the revised MR is as per the guidelines to fill MR. The information provided in the MR is consistent with the information in the PDD. However, supportive for commissioning date has not been provided; the commission certificate copy provided contains only 1 st page and does not include the date.		
Date of acceptance or non expectance	Date: 08/07/2014	Status: Open
Project participant response	Date: 12/07/2014	
Please refer attachment titled “WTG commissioning certificates”. The Project handing over checklist (2 pages) for each of the eight WTGs are in the attachment. In page 1, of each of the documents for the WTGS, the commissioning finish date of 14/05/2010 has been mentioned.		
Documentation Provided as Evidence by Project Participant		
WTG commissioning certificates		
Information Verified by Lead Assessor	Date of review: 08/08/2014	
WTG commissioning certificates		
Reasoning for not acceptance or close out		
The commissioning date could be verified from the document provided by the technology supplier. The dates mentioned in the MR are consistent with the supportive.		
Date of acceptance or non expectance	Date: 08/08/2014	Status: Closed

Date	Type & Number	Raised by	Reference
19/06/2014	CAR 02	Assessment Team	D-30
Non conformities raised			
Field “Physical Location” in section A.2 of the MR has been left empty. PP to indicate the location in accordance with the latest version of guideline to fill MR.			
Project participant response		Date: 24/06/14	
This has been updated to include the WTG location coordinates and the unique serial number.			

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"

Documentation Provided as Evidence by Project Participant

WTG Commissioning Certificates issued by the Manufacturer and accepted by the project developer have been provided to verify the serial numbers

Information Verified by Lead Assessor	Date of review: 08/07/2014
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Commissioning Certificate

Reasoning for not acceptance or close out

The serial numbers mentioned could not be found in the certificate provided.

Date of acceptance or non expectance	Date: 08/07/2014	Status: Open
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Project participant response	Date: 12/07/2014
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Please refer attachment titled "WTG commissioning certificates". The Project handing over checklist (2 pages) for each of the eight WTGs are in the attachment. In page 2, of each of the documents for the WTGS, this serial number has been mentioned as the Bottom Power Panel.

Documentation Provided as Evidence by Project Participant

WTG commissioning certificates

Information Verified by Lead Assessor	Date of review: 08/08/2014
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WTG commissioning certificates

Reasoning for not acceptance or close out

The serial numbers could be verified from the document provided by the authorities. The numbers mentioned in the MR are consistent with the supportive.

Date of acceptance or non expectance	Date: 08/08/2014	Status: Closed
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Date	Type & Number	Raised by	Reference
19/06/2014	CAR 03	Assessment Team	D-30

Non conformities raised

Section B.1 of the MR is incomplete and does not comply with the latest version of "Guideline: Completing the monitoring report Form.

Project participant response	Date: 24/06/14
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This has been amended to include the WTG commissioning dates and more information and details with regard to the project have been included

Documentation Provided as Evidence by Project Participant

WTG Commissioning Certificates issued by the Manufacturer and accepted by the project developer have

been provided to WTC Commissioning dates		
Information Verified by Lead Assessor	Date of review: 08/07/2014	
Commissioning Certificate		
Reasoning for not acceptance or close out		
The dates mentioned could not be found in the certificate provided.		
Date of acceptance or non expectance	Date: 08/07/2014	Status: Open
Project participant response	Date: 12/07/2014	
Please refer attachment titled "WTG commissioning certificates". The Project handing over checklist (2 pages) for each of the eight WTGs are in the attachment. In page 1, of each of the documents for the WTGS, the commissioning finish date of 14/05/2010 has been mentioned.		
Documentation Provided as Evidence by Project Participant		
WTG commissioning certificates		
Information Verified by Lead Assessor	Date of review: 08/08/2014	
WTG commissioning certificates		
Reasoning for not acceptance or close out		
The commissioning date could be verified from the document provided by the technology supplier. The dates mentioned in the MR are consistent with the supportive.		
Date of acceptance or non expectance	Date: 08/08/2014	Status: Closed

Date	Type & Number	Raised by	Reference
19/06/2014	CL 04	Assessment Team	D-30
Non conformities raised			
PP is requested to provide supportive for the following information			
a) "invoice for the electricity purchased by the project activity when wind power plant is not in operation"			
b) "record for the electricity purchased by this small scale project activity from the local distribution line"			
Project participant response		Date: 24/06/2014	
This was provided to the Assessor			
Documentation Provided as Evidence by Project Participant			
Copies of the relevant monthly invoices issued by the CEB was provided			
Information Verified by Lead Assessor		Date of review: 08/07/2014	
monthly invoices			
Reasoning for not acceptance or close out			
Invoices provided only include the information about the energy exported by the project activity; no supportive for import electricity as described were provided.			
Date of acceptance or non expectance		Date: 08/07/2014	Status: Open
Project participant response		Date: 12/07/2014	
The copies of the invoices from January – December 2013 have been provided as proof of the figures used. Please refer attachment "Monthly CEB export meter Bills".			

Documentation Provided as Evidence by Project Participant		
Monthly CEB export meter Bills		
Information Verified by Lead Assessor	Date of review: 08/08/2014	
Monthly CEB export meter Bills		
Reasoning for not acceptance or close out		
The values from the invoice were used to verify the values mentioned in the emission reduction calculation sheet. The values were found consistent.		
Date of acceptance or non expectance	Date: 08/08/2014	Status: Closed

Date	Type & Number	Raised by	Reference
19/06/2014	CAR 05	Assessment Team	D-30
Non conformities raised			
The grid emission factor considered by the PP is inconsistent to the emission factor fixed ex-ante in the registered project documentation. PP to justify.			
Project participant response		Date: 24/06/2014	
This has been amended to 0.6791 tCO ₂ /MWh as per PDD			
Documentation Provided as Evidence by Project Participant			
Revised MR			
Information Verified by Lead Assessor		Date of review: 08/07/2014	
Revised MR			
Reasoning for not acceptance or close out			
The emission factor in the revised MR is consistent with the registered PDD.			
Date of acceptance or non expectance		Date: 08/07/2014	Status: Closed

Date	Type & Number	Raised by	Reference
19/06/2014	CAR 06	Assessment Team	D-30
Non conformities raised			
The information provided in the section D.1 of the MR pertaining to the ex ante parameters fixed during validation is not complete. All the parameters listed in the PDD could not be found in the monitoring report.			
Project participant response		Date: 24/06/2014	
This has been updated to reflect the same as the PDD			
Documentation Provided as Evidence by Project Participant			
Revised MR			
Information Verified by Lead Assessor		Date of review: 08/07/2014	
Revised MR			
Reasoning for not acceptance or close out			
All the ex ante parameters mentioned in the registered PDD have been mentioned in the revised MR.			

Date of acceptance or non expectance	Date: 08/07/2014	Status: Closed
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Date	Type & Number	Raised by	Reference
19/06/2014	CAR 07	Assessment Team	D-30

Non conformities raised

Section D.2 of the MR has not been appropriately filled as it does not contain details for all the parameters such as:

- a) Monitoring equipment
- b) QA/QC procedures

Project participant response

Date: 24/06/2014

This has been amended as per the PDD and the calibration details of each of the meters have been added as well.

Documentation Provided as Evidence by Project Participant

Meter test reports for M1 and M2 for 2011, 2012 and 2013 have been provided to the Assessor

Information Verified by Lead Assessor

Date of review: 08/07/2014

Meter test reports

Reasoning for not acceptance or close out

PP is required to clarify the metering points as described in the registered PDD; in the revised MR provided PP has indicated that the energy meter that is recording the exported energy is also recording the import (in the registered PDD M1 & M2 have been described separate metering points but meter serial number provided in the MR is same). Kindly justify

Date of acceptance or non expectance

Date: 08/07/2014

Status: Open

Project participant response

Date: 12/07/2014

In section B.3 of the PDD, the project boundaries have been described. In the same diagram, the CEB Meter for SWPL (M1/M2) is denoted. Further the note following the diagram also explains that one main meter monitors M1 and M2.

Therefore there is only one meter unit for which the serial number has been provided and the calibration reports have been provided as well.

The Meter M3 is separate from this and this meter serial number and calibration details has been provided in the monitoring report.

Further the back up meter readings from the Senok meters M1B have also been provided to the Auditor for verification

Documentation Provided as Evidence by Project Participant

PPA

M1B Meter readings

Information Verified by Lead Assessor

Date of review: 08/08/2014

PPA

M1B Meter readings

Reasoning for not acceptance or close out

From the project line diagram in the PPA it was confirmed that that M1 & M2 are same meters therefore it is accepted by the assessment team.

However, there is a delay in the calibration which has not been addressed by the PP.		
Date of acceptance or non expectance	Date: 08/08/2014	Status: Open
Project participant response	Date: 03/09/2014	
<p>The Calibration of the M3 meter was conducted and the report was provided to the Auditor. The initial calibration readings in 2011, of the M1 and M2 meters both read as 0.33%. Hence, it is safe to assume the initial reading of the M3 meter reading too was 0.33%. This same value of 0.33% was also obtained in the calibration report done in 2014. Therefore it is safe to assume that this meter has had no changes in its accuracy despite the gap in Calibration until 2014.</p> <p>As there was a delay in calibration of the Meters, the following corrective action was followed:</p> <p>Export Meter M1:</p> <p>As the calibration for this period was done one after the one year period of validity of the calibration, as per the UNFCC guidelines, Validation and Verification Standards, Version 5, para 282 add 283, the higher value of either the meter accuracy or the percentage error should be deducted from the total generation for the corresponding months.</p> <p>Hence 1% has been deducted from the total generation for September and October (export) and has been indicated in the attached worksheet.</p> <p>Import Meters M2 and M3:</p> <p>As the calibration for this period was done one after the one year period of validity of the calibration, as per the UNFCC guidelines, Validation and Verification Standards, Version 5, para 282 add 283, the higher value of either the meter accuracy or the percentage error should be added to the total import for the Corresponding months.</p> <p>Hence 1% has been added to the total imported via M2 and M3 for the months of September and October and has been indicated in the attached worksheet.</p>		
Documentation Provided as Evidence by Project Participant		
Calibration report – M3		
Information Verified by Lead Assessor	Date of review: 15/09/2014	
Calibration report – M3		
Reasoning for not acceptance or close out		
<p>The delay in calibration has been factored in applying a correction factor in accordance with the VVS version 5. The emission reduction calculations have been revised.</p>		
Date of acceptance or non expectance	Date: 15/09/2014	Status: Closed

Date	Type & Number	Raised by	Reference
19/06/2014	CAR 08	Assessment Team	D-30
Non conformities raised			
Section E.1 of the MR is not transparent in terms of the calculation of the baseline emissions and its compliance to the PDD and guidelines.			
Project participant response		Date: 24/06/2014	
This has been updated as follows: 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 [28,270,032 kWh]		
EF_{grid,CM,y} = Combined Margin Emission factor - [0.6791 tCO ₂ /MWh]		
BE _y = 28,270,032/1000 * 0.6791		
BE _y = 19,198 tCO ₂ e		
Documentation Provided as Evidence by Project Participant		
Revised MR		
Information Verified by Lead Assessor	Date of review: 08/07/2014	
Revised MR		
Reasoning for not acceptance or close out		
Section E.1 in the revised MR is complete and in accordance with the guidelines to fill MR. The calculation in the revised MR provides a clear picture and values are reproducible.		
Date of acceptance or non expectance	Date: 08/07/2014	Status: Closed

Date	Type & Number	Raised by	Reference
19/06/2014	CL 08	Assessment Team	D-30
Non conformities raised			
PP needs to provide the proper justification on the difference obtained in the actual emission reductions achieved from the estimated value.			
Project participant response		Date: 24/06/2013	
<p>Sri Lanka saw extreme weather conditions in 2013, which was caused by changing weather patterns in the South Asian region. Cyclone Viyaru (formerly known as Mahasen) affected the North East Coast of Sri Lanka and hence saw significant flooding across the island in May 2013.</p> <p>Further there has been a steady increase in the rainfall during the monsoons seasons, which has prompted higher wind speed than those calculated for the PDD in 2008. As such, there is a ±10% allowance, allowable for a change in the Plant capacity factor.</p>			
Documentation Provided as Evidence by Project Participant			
http://en.wikipedia.org/wiki/Cyclone_Viyaru http://reliefweb.int/report/sri-lanka/cyclone-mahasen-northeast-sri-lanka-northeast-india-chittagong-division-bangladesh http://www.sundaytimes.lk/130728/news/monsoon-rains-intensifying-over-time-54680.html			
Information Verified by Lead Assessor		Date of review: 08/07/2014	
Revised MR and weblinks			
Reasoning for not acceptance or close out			
<p>From the weblinks provided it could be confirmed that the weather in that region was unpredictable during the concerned monitoring period which resulted in a higher PLF. The PLF obtained during the monitoring period is around 32.25% which is a slight increase and does not impact the additionality of the project.</p> <p>Also it was noticed that that during the monsoons only a much higher generation was obtained; a period which was overlapping the cyclone.</p> <p>The justification provided by the PP was accepted as these kind of events can neither be predicted and therefore could not be catered in at the time of PDD registration.</p>			
Date of acceptance or non expectance		Date: 08/07/2014	Status: Closed

Date	Type & Number	Raised by	Reference
19/06/2014	CAR 09	Assessment Team	D-30
Non conformities raised			
The following issues were found in the emission reduction calculation sheet:			
a) The ER sheet is not transparent in terms of the labels of the data entries which cannot be related to the monitored parameters mentioned in the monitoring plan.			
b) The sources of the monitored values are not mentioned			
c) The emission factor used for the calculation is inconsistent with the registered PDD			
Project participant response		Date: 24/06/2014	
The ER sheet has been updated to incorporate the above mentioned changes.			
Documentation Provided as Evidence by Project Participant			
Revised ER sheet			
Information Verified by Lead Assessor		Date of review: 08/07/2014	
Revised ER sheet			
Reasoning for not acceptance or close out			
The revised ER sheet is consistent and provides clear information transparently. The final emission reduction values are reproducible and rounded down.			
Date of acceptance or non expectance		Date: 08/07/2014	Status: Closed

Date	Type & Number	Raised by	Reference
08/08/2014	CAR 10	Assessment Team	D-30
Non conformities raised			
The Monitoring report is not as per the latest template available.			
Project participant response		Date: 03/09/2014	
The monitoring report has been updated to the latest version Version 04.0 available on the UNFCCC website			
Documentation Provided as Evidence by Project Participant			
Updated Monitoring report attached			
Information Verified by Lead Assessor		Date of review: 15/09/2014	
Updated Monitoring report			
Reasoning for not acceptance or close out			
The template of the revised report is the latest available at UNFCCC. The revised monitoring report is filled as per the guideline provided in the Appendix of template and the same was assessed adequate by the verification team.			
Date of acceptance or non expectance		Date: 15/09/2014	Status: Closed

Date	Type & Number	Raised by	Reference
03/11/2014	CAR 11	Assessment Team	FAR#14 (Validation Report)

Non conformities raised		
During the validation site visit the monitoring system was not verified as the project was not commissioned. FAR#14 was raised regarding the same, the PP is required to confirm that the monitoring is done as per the registered monitoring system.		
Project participant response	Date: 03/11/2014	
The project participant confirms that the monitoring system followed on site is in line to the registered PDD. The same could be verified on site.		
Documentation Provided as Evidence by Project Participant		
NA		
Information Verified by Lead Assessor	Date of review: 03/11/2014	
NA		
Reasoning for not acceptance or close out		
The assessment team during the onsite verification verified the metering setup and project implementation with the information provided in the registered PDD. The metering position was same as defined in the SPPA signed and commissioning certificates issued for the project activity and the team is of the opinion that the monitoring plan is being followed at the site.		
Date of acceptance or non expectance	Date: 03/11/2014	Status: Closed

8. CERTIFICATE OF COMPETENCE

Personnel Name:		Shreya Garg	
Qualified to work as:			
Team Leader	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>
Validator/Verifier	<input checked="" type="checkbox"/>	Financial Expert	<input type="checkbox"/>
Technical Reviewer	<input type="checkbox"/>	Local Expert (India)	<input checked="" type="checkbox"/>
Area(s) of Technical Expertise			
Sectoral Scope		Technical Area	
Energy industries (renewable/non-renewable sources)		TA 1.2: Energy generation from renewable energy sources	
Approved by (Manager C & T)		Sanjay Kandari	
Approval date:		26/09/2013	

Personnel Name:		Pathmanatha Poddawala	
Qualified to work as:			
Team Leader	<input type="checkbox"/>	Technical Expert	<input type="checkbox"/>
Validator/Verifier	<input type="checkbox"/>	Financial Expert	<input type="checkbox"/>
Technical Reviewer	<input type="checkbox"/>	Local Expert (Srilanka)	<input checked="" type="checkbox"/>
Area(s) of Technical Expertise			
Sectoral Scope		Technical Area	
N/A		N/A	
Approved by (Manager C & T)		Mayank Kumar Jain	
Approval date:		26/06/2012	

Personnel Name:		Sanjay Kandari	
Qualified to work as:			
Team Leader	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>
Validator/Verifier	<input checked="" type="checkbox"/>	Financial Expert	<input type="checkbox"/>
Technical Reviewer	<input checked="" type="checkbox"/>	Local Expert (India)	<input checked="" type="checkbox"/>
Area(s) of Technical Expertise			
Sectoral Scope		Technical Area	
Energy industries (renewable/non-renewable sources)		TA 1.2: Energy generation from renewable energy sources	
Approved by (Manager C & T)		Mayank Kumar Jain	
Approval date:		09/08/2012	

History of the document

Version	Date	Nature of revision	Reviewed by	Approved by
4.0	14/12/2013	Guidance included/improved	Manager CDM Quality 23/12/2013	Managing Director 23/12/2013
3.1	29/10/2012	Updated for EB69 Annex6	Manager CDM Quality 29/10/2012	Managing Director 29/10/2012
3.0	31/08/2012	Revised for VVS Track	Manager CDM Quality 08/09/2012	Managing Director 10/09/2012
2.0	21/12/2011	Comprehensively revised	Manager CDM Quality 21/12/2011	Managing Director 21/12/2011