

# VERIFICATION REPORT TITLE

Document Prepared By

EPIC Sustainability Services Private Limited



|                      |                                                                                                                  |
|----------------------|------------------------------------------------------------------------------------------------------------------|
| <b>Project Title</b> | Bundled Wind Power Project in Tamilnadu, India, co-ordinated by Tamilnadu Spinning Mills Association (TASMA V1A) |
| <b>Version</b>       | 02                                                                                                               |
| <b>Report ID</b>     | ESSPL/VCS/2014/003                                                                                               |

|                            |                                                                                                                  |
|----------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>Report Title</b>        | Bundled Wind Power Project in Tamilnadu, India, co-ordinated by Tamilnadu Spinning Mills Association (TASMA V1A) |
| <b>Client</b>              | Tamilnadu Spinning Mills Association (TASMA)                                                                     |
| <b>Pages</b>               | 12                                                                                                               |
| <b>Date of Issue</b>       | 07-November-2014                                                                                                 |
| <b>Prepared By</b>         | EPIC Sustainability Services Private Limited                                                                     |
| <b>Contact</b>             | 41, Anugraha, 1st Cross, Sundarnagar, Near BEL Circle, Bangalore-560054, Karnataka, India                        |
| <b>Approved By</b>         | Mr. K. Sudheendra (Head-Operations)                                                                              |
| <b>Work Carried Out By</b> | Mr. A. Prabu Das (Lead Auditor with technical expertise)<br>Mr. Y.B. Rao (Auditor)                               |

## Summary:

Tamilnadu Spinning Mills Association (TASMA) has appointed EPIC Sustainability Sevics Private Limited to perform the first periodic verification of the emission reductions reported for the project titled “Bundled Wind Power Project in Tamilnadu, India, co-ordinated by Tamilnadu Spinning Mills Association (TASMA V1A” (Project ID: 1352) for the period from 2<sup>nd</sup> April 2008 to 31<sup>st</sup> December 2013. The verification was based on the validated project design document (PD)<sup>/9/</sup> version 2.0 dated 15<sup>th</sup> March 2010, corresponding validation report, monitoring reports and other supporting documents made available to the verification team by the client.

The project involves installation of 84 WTGs, with a total capacity of 48.1 MW in the state of Tamilnadu, India. The project activity results in the reduction of GHG emission by displacing the grid electricity from the southern grid, a fossil fuel dominated grid.

The verification team identified, through the verification process, four CARs, three CRs and two FARs. The PP has taken actions and submitted to EPIC the revised monitoring report and supporting evidence. The verification team, through the verification process, confirmed that the emission reductions achieved by the project activity during the monitoring period are correctly calculated in the monitoring report, Version 03, dated 30/10/2014 based on the approved monitoring methodology, ACM 0002, version 10. Therefore, EPIC certifies the emission reductions amounting to 447,500 tCO<sub>2</sub>e for the period 02/04/2008 to 31/12/2013 (both days inclusive).

## Table of Contents

| TABLE OF CONTENTS |                                                                        | PAGE |
|-------------------|------------------------------------------------------------------------|------|
| 1.0               | INTRODUCTION                                                           | 4    |
| 1.1               | Objective                                                              | 4    |
| 1.2               | Scope and Criteria                                                     | 4    |
| 1.3               | Level of Assurance                                                     | 4    |
| 1.4               | Summary of the Project Description                                     | 4    |
| 2.0               | VERIFICATION PROCESS                                                   | 5    |
| 2.1               | Method and criteria                                                    | 5    |
| 2.2               | Document review                                                        | 5    |
| 2.3               | Interview                                                              | 6    |
| 2.4               | Site inspections                                                       | 6    |
| 2.5               | Resolution of Findings                                                 | 7    |
| 2.5.1             | Forward Action Requests                                                | 8    |
| 2.6               | Eligibility of Validation activities                                   | 8    |
| 3.0               | VALIDATION FINDINGS                                                    | 8    |
| 3.1               | Participation under Other GHG Programs                                 | 8    |
| 3.2               | Methodology Deviations                                                 | 8    |
| 3.3               | Project description deviations                                         | 8    |
| 3.4               | Grouped project                                                        | 9    |
| 4.0               | VERIFICATION FINDINGS                                                  | 9    |
| 4.1               | Project implementation status                                          | 9    |
| 4.2               | Accuracy of GHG Emission Reductions and removal calculations           | 9    |
| 4.3               | Quality of Evidences to determine GHG Emission Reductions and removals | 12   |
| 4.4               | Non-permanence Risk Analysis                                           | 12   |
| 5.0               | VERIFICATION CONCLUSION                                                | 12   |
| 6.0               | References                                                             | 15   |
| Appendix I:       | Verification Protocol and Resolution of CAR/CRs                        |      |

## 1 INTRODUCTION

### 1.1 Objective

EPIC Sustainability Services Private Limited (EPIC) has been contracted by TASMA to undertake the (first periodic) independent verification of the project activity titled “Bundled Wind Power Project in Tamilnadu, India, co-ordinated by Tamilnadu Spinning Mills Association (TASMA V1A)”.

- To verify that the actual monitoring system and procedures are in full compliance with the system and procedures described in the monitoring plan of validated PD, version 2.0 dated 15<sup>th</sup> March 2010 as well as with the applicable methodology;
- To verify that the data reported were accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reduction calculation; and
- To verify and certify GHG emission reduction reported for the project for the period from 2<sup>nd</sup> April 2008 to 31<sup>st</sup> December 2013.

### 1.2 Scope and Criteria

The scope of the verification was the independent and objective review and ex-post determination of the monitored reductions in GHG emissions from ‘Bundled Wind Power Project in Tamilnadu, India, co-ordinated by Tamilnadu Spinning Mills Association (TASMA V1A)’. The verification of this CDM project was based on the validated and registered project design document (PD), validation report and monitoring reports and supporting documents made available to the verification team. These documents were reviewed against the requirements of the VCS standard<sup>/1/</sup> version 3.4, VCS guidelines, the CDM Modalities and Procedures, related rules and guidance, and the Validation and Verification standard<sup>/2/</sup> Version 7.0. The verification is not meant to provide any consulting towards the client. However, stated request for clarifications and/or corrective actions may provide input for improvement of the project design.

### 1.3 Level of Assurance

In line with VCS requirements and as per ISO 14064-3:2006 para A.2.3.2, a reasonable level of assurance is defined for the verification of the project.

The verification report is based on the Project Description, Validation report, monitoring report, emission reduction calculation sheet and other supporting documents made available to the verifier and information collected through performing interviews and during the on-site assessment. The verification opinion is assured through the credibility of all documents checked.

This implies that based on the process and procedures conducted EPIC should state whether the information in the PD is materially correct and is a fair representation of the of the actual project details, and is prepared in accordance with the VCS requirements and the applied CDM methodology for information pertaining to additionality, GHG quantification, monitoring and reporting.

### 1.4 Summary Description of the Project

The project activity is a large scale bundled wind power project consisting of 84 Wind Turbine Generators (WTGs) installed in different passes (Aralvaimozhi, Senkottah, Palghat and Theni passes) located in the State of Tamilnadu, India. The intent of the Project Activity is to reduce GHG emission and promote sustainable development by use of renewable energy (Wind) for generation of power by bringing together a number of investors with small power requirements to invest into wind turbines. In the absence of the project activity, the equivalent amount of electricity would have been generated by the power plants connected with the southern grid which is predominantly based on fossil fuel.

**Project Scenario:** The project activity involves the installation of WTGs which reduces the anthropogenic emissions of greenhouse gases (GHGs) in to the atmosphere associated with the equivalent amount of electricity generation from renewable and cleaner energy source i.e. Wind. The electricity thus generated is already being supplied to the Southern regional grid. All the 84 WTGs involved in this project have commissioned and connected with the southern regional grid. The electricity thus generated is being used either exported to the southern grid or wheeled for captive consumption using the same grid. The verification team has reviewed the commissioning certificates<sup>/3/</sup> and power purchase agreements<sup>/4/</sup> and energy wheeling agreements.

## 2 VERIFICATION PROCESS

### 2.1 Method and Criteria

The verification process consists of the following phases:

- i) a document review of the project design documents, monitoring reports and preparation of verification protocol;
- ii) on-site visit to the project activity and interviews with project developer and project consultant; and
- iii) resolution of outstanding issues and the issuance of final verification report and opinion

In order to ensure transparency, a verification protocol was prepared for the project according to the VVS version 7.0 verification requirements and VCS Standard version 3.4. The verification protocol serves the following purposes:

- it organizes, details and clarifies the requirements that a VCS project is expected to meet;
- it ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

The completed validation protocol is enclosed in Appendix of this report.

During the verification, non-fulfillment of the verification protocol criteria or identified risks to the fulfillment of project objectives were raised as either CAR or CR. Corrective Action Requests (CAR) were issued, where:

- i) mistakes had been made that directly impacted on the project results; or
- ii) VCS requirements had not been met; or
- iii) there was a risk that the project would not be accepted as a VCS project or that emission reductions will not be certified.

The Clarification Requests (CR) were issued where additional information was needed to clarify issues, and Forward Action Requests (FAR) for issues relating to project implementation that required review during the subsequent verification of the project activity.

The following team members from EPIC were involved in the verification process:

| Name             | Role               | Components reviewed                                                                                                                  |
|------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Mr. A. Prabu Das | Lead Auditor       | Completeness check, desk review, onsite inspection, Interview with project representatives, issuance of findings, report preparation |
| Mr. Y.B. Rao     | Auditor            | Desk review, onsite inspection, Interview with project representatives, report preparation                                           |
| Dr. R. Madhukar  | Technical Reviewer | Technical Issues related to project                                                                                                  |

## 2.2 Document Review

The verification was performed primarily based on the review of the monitoring report and the supporting documentation. This process included:-

1. a review of data and information presented to verify their completeness
2. 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 QA/QC procedures, and
3. an evaluation of data management and the QA/QC system in the context of their influence on the generation and reporting of ERs.

The monitoring report<sup>/5/</sup>, Version 01, dated 02/04/2014 was initially reviewed and further EPIC requested the PP to present the supporting evidences. Additional background information and documents related to the project performance were also reviewed by EPIC. Through the process of the verification, the revised monitoring report and the supporting documents were evaluated to confirm the actions taken by the PP to the CARs and CLs issued by EPIC. The documents reviewed by EPIC are listed in References section of this report. EPIC reviewed the final version of the monitoring report<sup>/5/</sup> Version 03.0 dated 30/10/2014 to confirm that all changes agreed had been incorporated.

## 2.3 Interviews

After the review of the Project description and documents a site visit was carried out from 07<sup>th</sup> April to 09<sup>th</sup> April 2014. During the site visit physical inspection of the project components followed by interviews with the on-site personnel was carried out to verify the project details. A follow-up meeting was also conducted with the project representatives. The following persons were interviewed.

| Name & Designation                                | Company | Details of Interview                                                                                                                                                                                                                                      |
|---------------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mr. Bharathi Kannan<br>Head – CDM/VCS<br>Projects | TASMA   | Technical Details, Monitoring system, calibration frequency, Grid connectivity & power evacuation system / Infrastructure. Loan Sanction Documents, Power Purchase Agreement, Land Ownership details, Purchase Order details, Overall Project management. |
| Mr. Selvaraj -<br>Analyst- CDM/VCS<br>Projects    |         | Baseline, Additionality, Barrier analysis, CER calculations, Financial calculations, Proof of title.                                                                                                                                                      |

## 2.4 Site Inspections

An onsite visit was conducted for all the WTGs located in four different passes (Aralvaimozhi, Senkottah, Palghat and Theni passes) located in the state of Tamil Nadu, India. The verification team of EPIC visited the WTGs from 07<sup>th</sup> to 09<sup>th</sup> April 2014. The following schedule was adopted for the onsite:

| Pass name                | Number of WTGs | Date of visit               |
|--------------------------|----------------|-----------------------------|
| Palghat                  | 30             | 07 <sup>th</sup> April 2014 |
| Senkottah (Aralvaimozhi) | 27             | 08 <sup>th</sup> April 2014 |
| Theni                    | 27             | 09 <sup>th</sup> April 2014 |
| Aralvaimozhi             | 01             | 08 <sup>th</sup> April 2014 |

During the site visit, the actual on-site practices adopted and followed for the operation of the project were compared with the description given in the monitoring report. The grid-connectivity, metering practices, calibration and level of accuracy were examined. The archived data of the energy generated was also reviewed.

An on-site assessment was conducted as a part of verification activity and involved:

- 1) an assessment of the implementation and operation of the VCS project activity as per the registered PD
- 2) a review of information flows for generating, aggregating and reporting of the monitoring parameters
- 3) interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the Monitoring Plan
- 4) a cross-check between information provided in the MR and data from other sources
- 5) a check of the monitoring equipment including calibration performance, and observations of monitoring practices against the requirements of the PD and the applied methodology
- 6) A review of calculations and assumptions made in determining the GHG data and ERs, and
- 7) An identification of QA/QC procedures in place to prevent, or identify and correct, any errors or omissions in the reported monitoring parameters.

## 2.5 Resolution of Findings

### Resolution of Clarification and Corrective Action Requests

The objective of this phase of the verification was to resolve the corrective action requests and clarifications and any other outstanding issues which needed to be clarified prior to EPIC's positive conclusion on the monitoring report and the project design. During the verification process four CARs, three CRs and Two FARs were raised. A FAR carried over from the validation process was also raised.

All the CARs, CRs and the FAR from the validation stage were resolved during this phase. In order to ensure the transparency of the verification process, the concerns raised and responses that were given are summarized in Appendix 1 of this report and documented in more detail in the Verification in Appendix 1. All the corrective actions have been incorporated into the monitoring report.

### Internal quality control

A Technical Reviewer is appointed to review the final draft verification report and the final verification report. The comments made by the Technical Reviewer are taken into consideration and incorporated in the final report. The final report (after resolutions of all findings) is then submitted to the Head – Operations for review and approval.

## 2.5.1 Forward Action Requests

There are two FARs raised during this verification process. One FAR carried over from the validation report was resolved during this verification. The same is indicated in Appendix 1 of this report.

## 2.6 Eligibility for Validation Activities

EPIC has been accredited for validation and verification for the scopes 1-11 and 13-15 by CDM UNFCCC and as well as by the VCS board.

## 3 VALIDATION FINDINGS

### 3.1 Participation under Other GHG Programs

The project is under CDM pipeline. However the PP has provided an undertaking that no double counting would occur for the entire duration of the crediting period.

### 3.2 Methodology Deviations

There is no methodology deviation involved.

### 3.3 Project Description Deviations

Based on the monitoring report and validated PD the first calibration is due after 5 years from the date of commissioning of each WTG (based on CEA, 2006 guidelines). During the interviews with the PP, the verification team has confirmed that duly tested and calibrated energy meters were installed at the time of commissioning of each WTG.

However the energy meters are factory tested and supplied for commissioning to the state electricity board, which tests the meter according the Power Purchase Agreement (PPA) and certifies its installation while the WTG is commissioned. In case the meter is faulty or error prone, the billing is not done for that period. In the case of this project activity, it was verified from the billing invoices that the energy supplied was accepted by the state electricity board for this monitoring period and no such instance where the billing was stopped due to faulty or error prone meters was observed. Hence the verification team is of the opinion that for the installed energy meters, calibration is valid, especially in the case of the 61 WTGs, for which under the CEA, 2006 guidelines, the calibration does not fall under this monitoring period.

#### Project Deviation 1:

The initial commissioning date of the WTGs is considered as the initial calibration date of the energy meters, which is in line with the registered monitoring plan. Further, these meters are certified as factory calibrated by the manufacturer and are installed by the regulatory authority as per the requirements in the power purchase agreements. The project deviation relates that if the meters are commissioned and the

initial calibration is done by the manufacturer, the validity of the calibration, up to a period of five years in the subsequent monitoring periods can be cross checked by verification of the monthly invoices raised by the PP, which is indicative of the accurate functioning of the energy meters as the invoices are based on the joint meter readings, agreed by the PP and the regulatory authority. The validity of calibration for a period of five years is in line with the registered monitoring plan and CEA guidelines, 2006 and is indicated in the Appendix I of the MR. In order to ensure that the project deviation is applied, this is raised as a FAR for cross check during subsequent verifications. Hence, the verification team was able to conclude that the project description deviations for calibration has found appropriate.

## 3.4 Grouped Project

The project activity is not a grouped project.

## 4 Verification Findings

### 4.1 Project Implementation Status

The verification based on the onsite observation, found that there is no material discrepancies between the project implementation and the project description. The verification team checked the status of monitoring plan the completeness of monitoring system and found no discrepancies between the actual monitoring system and the monitoring plan set in the validated project description. The project is being applied for under CDM scheme also and the project participants have provided an undertaking letter that there will not be any double counting. The verification team was able to conclude the project has been implemented as described in the validated project description.

### 4.2 Accuracy of GHG Emission Reduction and Removal Calculations

The verification of all the data ex-ante and data ex-post (monitoring parameters) used for the calculation of baseline emissions, project emissions and leakage emissions are tabulated below.

| Parameter                                                                                                                                                                                                     | Conclusion by the verification team                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Baseline emission factor (EF <sub>y</sub> ) = 0.94515 tCO <sub>2</sub> e/MWh<br>(Ex-ante)<br>(y = 2008 to 2013)<br><br>Source: Validated PD <sup>/6/</sup> and Corresponding Validation report <sup>/7/</sup> | The verification team has checked the value and found that the value is fixed ex-ante for the entire crediting period and the value is considered for this monitoring period also which is sourced from the validated PD and accepted by the verification team. The value is used consistently across the monitoring report, VER sheet. Hence accepted by the verification team. |
| Electricity supplied by the project activity to the Grid                                                                                                                                                      | The verification team based on the on-site visit confirmed that net electricity supplied to                                                                                                                                                                                                                                                                                      |

|                                                                |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (EGy)                                                          |              | <p>the grid by each WTG is measured through the meter readings of the energy meters installed by electricity board, which have facility to record export and import of energy.</p> <p>The team has checked the electronic archiving of all the monitored data. The energy meters will be calibrated as per as per guidelines provided by CEA. The accuracy class of the main meters is not inferior to 0.5s and the calibration frequency is 5 years. The verification team has reviewed the calibration certificates<sup>/8/</sup> for those WTGs for which calibration is due and found that there are 23 WTGs namely (WTGs with S. No 3 to 21, 26, 51, 53 and 62 fall under this category-Refer MR for WTGs with serial numbers) during the monitoring period and found that all the WTGs have been calibrated within the mandated 5 years period and meters was working with the accuracy which is less than the maximum permissible error. The calibration details are verified to be in line with details in Appendix 1 of the MR. The monitoring frequency for EGy matches with that of the methodology, viz. hourly measurement and monthly recording. The cross checking is provided through the use of the invoices receipts<sup>/9/</sup>. Project participant has included a few other variables in the monitoring plan (Total electricity imported, Total electricity Exported) to account for the uncertainty where the dates of the recorded data may not coincide with the verification period. The verification team therefore agrees that the project activity meets all the applicability conditions and all other stipulations of the validated PD. The reliability of the evidence, and the source and nature of the evidence is checked the requirements of the validated PD and found exactly matching. The verification team has checked the JMR sheets, invoices, VER sheet and monitoring report and found that the information flow from data generation and aggregation, to recording, calculation and final transposition into the monitoring report are</p> |
| Electricity supplied by the project activity to the Grid (EGy) | Value in MWh |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| EG <sub>y=2008</sub>                                           | 9,119.187    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| EG <sub>y=2009</sub>                                           | 66,987.251   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| EG <sub>y=2010</sub>                                           | 96,072.623   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| EG <sub>y=2011</sub>                                           | 102,702.428  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| EG <sub>y=2012</sub>                                           | 98,588.584   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| EG <sub>y=2013</sub>                                           | 99,999.598   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | being followed as per the validated PD and hence accepted by the verification team.                                                                                                    |                             |                      |       |                      |        |                      |        |                      |        |                      |        |                      |        |                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------------------|-------|----------------------|--------|----------------------|--------|----------------------|--------|----------------------|--------|----------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Baseline emission (BE<sub>y</sub>)</p> <table border="1"> <thead> <tr> <th>Baseline emission (BE<sub>y</sub>)</th><th>Value in tCO<sub>2</sub>e</th></tr> </thead> <tbody> <tr> <td>BE<sub>y=2008</sub></td><td>8,619</td></tr> <tr> <td>BE<sub>y=2009</sub></td><td>63,313</td></tr> <tr> <td>BE<sub>y=2010</sub></td><td>90,803</td></tr> <tr> <td>BE<sub>y=2011</sub></td><td>97,069</td></tr> <tr> <td>BE<sub>y=2012</sub></td><td>93,181</td></tr> <tr> <td>BE<sub>y=2013</sub></td><td>94,515</td></tr> </tbody> </table>     | Baseline emission (BE <sub>y</sub> )                                                                                                                                                   | Value in tCO <sub>2</sub> e | BE <sub>y=2008</sub> | 8,619 | BE <sub>y=2009</sub> | 63,313 | BE <sub>y=2010</sub> | 90,803 | BE <sub>y=2011</sub> | 97,069 | BE <sub>y=2012</sub> | 93,181 | BE <sub>y=2013</sub> | 94,515 | <p>As per the validated PD, BE<sub>y</sub> is calculated as follows.</p> <p>BE<sub>y</sub> = EG<sub>y</sub> x EF<sub>y</sub> which is accepted by the verification team.</p> |
| Baseline emission (BE <sub>y</sub> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Value in tCO <sub>2</sub> e                                                                                                                                                            |                             |                      |       |                      |        |                      |        |                      |        |                      |        |                      |        |                                                                                                                                                                              |
| BE <sub>y=2008</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 8,619                                                                                                                                                                                  |                             |                      |       |                      |        |                      |        |                      |        |                      |        |                      |        |                                                                                                                                                                              |
| BE <sub>y=2009</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 63,313                                                                                                                                                                                 |                             |                      |       |                      |        |                      |        |                      |        |                      |        |                      |        |                                                                                                                                                                              |
| BE <sub>y=2010</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 90,803                                                                                                                                                                                 |                             |                      |       |                      |        |                      |        |                      |        |                      |        |                      |        |                                                                                                                                                                              |
| BE <sub>y=2011</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 97,069                                                                                                                                                                                 |                             |                      |       |                      |        |                      |        |                      |        |                      |        |                      |        |                                                                                                                                                                              |
| BE <sub>y=2012</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 93,181                                                                                                                                                                                 |                             |                      |       |                      |        |                      |        |                      |        |                      |        |                      |        |                                                                                                                                                                              |
| BE <sub>y=2013</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 94,515                                                                                                                                                                                 |                             |                      |       |                      |        |                      |        |                      |        |                      |        |                      |        |                                                                                                                                                                              |
| Project emission (PE <sub>y</sub> ) = 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | The electricity generation from the renewable energy source i.e. wind energy. Hence there is no project emission from the project activity which is accepted by the verification team. |                             |                      |       |                      |        |                      |        |                      |        |                      |        |                      |        |                                                                                                                                                                              |
| Leakage (LE <sub>y</sub> ) = 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | As per the validated PD, there is no leakage identified for this project activity.                                                                                                     |                             |                      |       |                      |        |                      |        |                      |        |                      |        |                      |        |                                                                                                                                                                              |
| <p>Emission reductions (ER<sub>y</sub>)</p> <table border="1"> <thead> <tr> <th>Emission reductions (ER<sub>y</sub>)</th><th>Value in tCO<sub>2</sub>e</th></tr> </thead> <tbody> <tr> <td>ER<sub>y=2008</sub></td><td>8,619</td></tr> <tr> <td>ER<sub>y=2009</sub></td><td>63,313</td></tr> <tr> <td>ER<sub>y=2010</sub></td><td>90,803</td></tr> <tr> <td>ER<sub>y=2011</sub></td><td>97,069</td></tr> <tr> <td>ER<sub>y=2012</sub></td><td>93,181</td></tr> <tr> <td>ER<sub>y=2013</sub></td><td>94,515</td></tr> </tbody> </table> | Emission reductions (ER <sub>y</sub> )                                                                                                                                                 | Value in tCO <sub>2</sub> e | ER <sub>y=2008</sub> | 8,619 | ER <sub>y=2009</sub> | 63,313 | ER <sub>y=2010</sub> | 90,803 | ER <sub>y=2011</sub> | 97,069 | ER <sub>y=2012</sub> | 93,181 | ER <sub>y=2013</sub> | 94,515 | <p>As per the validated PD, the emission reduction is calculated as follows.</p> <p>ER = BE-PE-LE</p>                                                                        |
| Emission reductions (ER <sub>y</sub> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Value in tCO <sub>2</sub> e                                                                                                                                                            |                             |                      |       |                      |        |                      |        |                      |        |                      |        |                      |        |                                                                                                                                                                              |
| ER <sub>y=2008</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 8,619                                                                                                                                                                                  |                             |                      |       |                      |        |                      |        |                      |        |                      |        |                      |        |                                                                                                                                                                              |
| ER <sub>y=2009</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 63,313                                                                                                                                                                                 |                             |                      |       |                      |        |                      |        |                      |        |                      |        |                      |        |                                                                                                                                                                              |
| ER <sub>y=2010</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 90,803                                                                                                                                                                                 |                             |                      |       |                      |        |                      |        |                      |        |                      |        |                      |        |                                                                                                                                                                              |
| ER <sub>y=2011</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 97,069                                                                                                                                                                                 |                             |                      |       |                      |        |                      |        |                      |        |                      |        |                      |        |                                                                                                                                                                              |
| ER <sub>y=2012</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 93,181                                                                                                                                                                                 |                             |                      |       |                      |        |                      |        |                      |        |                      |        |                      |        |                                                                                                                                                                              |
| ER <sub>y=2013</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 94,515                                                                                                                                                                                 |                             |                      |       |                      |        |                      |        |                      |        |                      |        |                      |        |                                                                                                                                                                              |

## 4.3 Quality of Evidence to Determine GHG Emission Reductions and Removals

The emission reductions are calculated on the basis of the JMR readings at the project location. The electrical meters are locked and sealed and thus are tamper free. Duly tested and calibrated energy meters were installed for the project activity. Electricity generated are monitored by individual energy meters, except for the two sub projects Ambica cotton mills limited (two WTGs) and SRG Apparels Pvt. Ltd (two WTGs) wherein two WTGs are connected to a single meter and are identified by HTSC no 183 and 2618 respectively. Of 84 WTGs in the project activity, the electricity is monitored by means of 82 energy meters. First calibration is due after 5 years from the date of commissioning of each WTG. The verification team has reviewed the due calibration certificates for 23 WTGs which is later to the 5 years as per CEA guidelines. The main meters will be calibrated as per as per guidelines provided by CEA. The accuracy class of the main meters is not inferior to 0.5s and the calibration frequency is 5 years. As already mentioned in section 4.2, the readings of the JMR are taken jointly. The readings of the JMR are cross checked with the invoices issued by respective project participant to state electricity board. Other than this, several documents were submitted by the project participant as evidence to determine emission reductions and to cross check the values. These values were cross checked and the verification team is satisfied with the quality of the evidence used to determine emission reductions.

Apart from the JMR, daily generation is recorded and is reported to the local office of the O&M company. All the copies of such daily generation, comparison with previous year's generation, preventive maintenance schedule, breakdown records etc. are stored at the office of the O&M company near the site. The daily generation is also uploaded in the internet so that the PP can cross check with the figures obtained from the site representative. A set of all the monitoring data is also sent to the head office of the PP. The data right from the commissioning of the WTG were found to be archived.

The site representative of the PP ensures that the monitoring of the site is done on a continuous basis by the O&M company. The representative is also informed within a day in case of any break down at the site. The representative was found to cross check the daily generation data.

## 4.4 Non-Permanence Risk Analysis

Not applicable for a renewable energy project.

## 5 Verification conclusion

EPIC Sustainability Services Private Limited has been engaged by TASMA to perform the first periodic verification of the VCS project "Bundled Wind Power Project in Tamilnadu, India, co-ordinated by Tamilnadu Spinning Mills Association (TASMA V1A)" for the period from 02/04/2008 to 31/12/2013.

The verification was based on the validated PD, the baseline and monitoring methodology (ACM 002 Version 10.0), the Monitoring Report, emission reduction spread sheets and other supporting documents made available to EPIC verification team by the project participant. The management of TASMA was responsible for the preparation and reporting of GHG emissions data, and the reported GHG emissions reduction on the basis set out within the project monitoring plan.

It is the responsibility of EPIC verification team to express an independent GHG verification opinion on the GHG emissions from the project for the monitoring period starting from 2<sup>nd</sup> April 2008 to 31<sup>st</sup> December 2013 and on the calculation of GHG emission reductions from the project based on the verified emissions for the same period.

The verification was carried out in accordance with the requirements of the Validation and Verification standard Version 7.0 and VCS Standard 3.4. As a result of the verification, the verification team confirms that for the reporting period:

- all operations of the project were implemented as described in the registered PD, (project ID 1352) ,
- the monitoring plan is in accordance with the approved monitoring methodology, ACM002 version 10 applied by the project activity.
- the monitoring has been carried out in accordance with the validated PD version 2.0 dated 15<sup>th</sup> March 2010.
- the monitoring aspects (i.e. additional monitoring parameters, monitoring frequency and calibration frequency) were in place and functional, with the installed equipment essential for generating emission reduction operating appropriately and the calibration of all the equipment had been carried out accordingly in line with registered PD.
- the GHG emission reductions achieved were calculated correctly on the basis of approved monitoring methodology ACM002 version 10.

We have verified that the information included in the final monitoring report (version 03.0, dated 30<sup>th</sup> October 2014) was correct and that the emission reductions achieved had been determined correctly. In our opinion, the GHG emission reductions for the period from 2<sup>nd</sup> April 2008 to 31<sup>st</sup> December 2013 stated in the latest revised monitoring report (version 03.0, dated 30<sup>th</sup> October 2014) for the project are fairly stated. The verifier confirms that the GHG emission reductions were calculated without material misstatements for the whole monitoring period. Our opinion is based on the project's GHG emissions and resulting GHG emission reductions reported, and, to the valid and registered project baseline and monitoring documents. We confirm the following:

Verification period: From [02-April-2008] to [31-December-2013]

Verified GHG emission reductions and removals in the above verification period:

| Year         | Baseline emissions or removals (tCO <sub>2</sub> e) | Project emissions or removals (tCO <sub>2</sub> e) | Leakage emissions (tCO <sub>2</sub> e) | Net GHG emission reductions or removals (tCO <sub>2</sub> e) |
|--------------|-----------------------------------------------------|----------------------------------------------------|----------------------------------------|--------------------------------------------------------------|
| Year 2008    | 8,619                                               | 0                                                  | 0                                      | 8,619                                                        |
| Year 2009    | 63,313                                              | 0                                                  | 0                                      | 63,313                                                       |
| Year 2010    | 90,803                                              | 0                                                  | 0                                      | 90,803                                                       |
| Year 2011    | 97,069                                              | 0                                                  | 0                                      | 97,069                                                       |
| Year 2012    | 93,181                                              | 0                                                  | 0                                      | 93,181                                                       |
| Year 2013    | 94,515                                              | 0                                                  | 0                                      | 94,515                                                       |
| <b>Total</b> | 447,500                                             | 0                                                  | 0                                      | 447,500                                                      |

|                                                                                                          |                                                                                                          |
|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Prepared by :<br><br> | Approved by:<br><br> |
| (A. Prabu Das)<br><br>Verification Team Leader                                                           | (K. Sudheendra)<br><br>Head-Operations                                                                   |

## 6 REFERENCES

|   |                                                                                                                                                                               |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Validation and verification Standard version 7.0                                                                                                                              |
| 2 | VCS Standard version 3.4                                                                                                                                                      |
| 3 | Commissioning Certificates for all 84 WTGs                                                                                                                                    |
| 4 | Power Purchase Agreements for all 84 WTGs                                                                                                                                     |
| 5 | Monitoring report Version 1.0 and its related documents<br>Monitoring report Version 2.0 and its related documents<br>Monitoring report Version 3.0 and its related documents |
| 6 | Registered PD dated 15 <sup>th</sup> March 2010                                                                                                                               |
| 7 | Validation report dated 31 <sup>st</sup> March 2010                                                                                                                           |
| 8 | Calibration certificates for the energy meters for 23 WTGs                                                                                                                    |
| 9 | JMR records and Invoices for the period from 2 <sup>nd</sup> April 2008 to 31 <sup>st</sup> December 2013                                                                     |

## Verification checklist

**Project name:** Bundled Wind Power Project in Tamilnadu, India, co-ordinated by Tamilnadu Spinning Mills Association (TASMA V1A)

**TABLE 1: VERIFICATION REQUIREMENTS BASED ON CDM VALIDATION AND VERIFICATION STANDARD VERSION 7.0**

|   | Checklist Questions                                                                                                                              | Comments by verifier                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Conclusion   |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
|   | <b>Compliance of the project implementation with the registered project design document</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |
| 1 | Was an on-site visit conducted for this verification? If no, please justify the rationale of the decision.<br>(Refer VVS 272)                    | The verification team visited physically to the sites mentioned in the validated PD and monitoring report and found that all the machines were commissioned and operational as on date. The team also visited substations which are at the windmill site itself. The electricity is supplied to TNEB and/or used the grid for captive use as applicable.                                                                                                                                                                  | <b>OK</b>    |
| 2 | Are all physical features of the VCS project activity proposed in the registered PD in place?<br>(Refer 272)                                     | The physical features, as required by the registered PD, include power generation facility i.e. WTGs and energy meters. The verification team was able to confirm that all physical features of the proposed project activity matches with that mentioned in the registered PD. Unique identification number matches with that mentioned in the PD.<br><br>In discussions with the PP it was observed that the project was in CDM pipeline also. But evidence that there will not be any double counting is not provided. | <b>CAR 1</b> |
| 3 | Have the project participants operated the proposed VCS project activity as per the registered PD or any approved revised PD?<br>(Refer VVS 272) | PP has implemented and operated the project as per the registered PD. This was also evident from the invoices and JMR reports available at substations provided by the PP.<br><br>It is to be verified that the double counting of emission reductions do not take place throughout the crediting period of this VCS project activity.                                                                                                                                                                                    | <b>FAR 1</b> |
| 4 | For this monitoring period, what is the status                                                                                                   | All the windmills in the project activity are commissioned and operational.                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>OK</b>    |

|   | Checklist Questions                                                                                                                                                                                                                                                                                                                                                                        | Comments by verifier                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Conclusion |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
|   | of the implementation of the project?<br><br>For project activities that consist of more than one site, the DOE shall describe the status of implementation and starting date of operation for each site.<br>(Refer VVS 273 (a))                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |
| 5 | For project activities with phased implementation, what is the progress of the proposed project activity achieved in each phase under verification. If the phased implementation is delayed, describe the reasons and present the expected implementation dates;<br>(Refer VVS 273 (a))                                                                                                    | As all the windmills are commissioned, the query is not applicable                                                                                                                                                                                                                                                                                                                                                                                                       | OK         |
| 6 | Describe the actual operation of the project activity.<br>(Refer VVS 273 (b))                                                                                                                                                                                                                                                                                                              | All the windmills are commissioned and operational. The verification team based on the on-site visit confirmed that net electricity supplied to the grid by each WTG is measured through the meter readings of the energy meters installed by electricity board, which have facility to record export and import of energy. The team has checked the electronic archiving of all the monitored data. The energy meters are calibrated as per guidelines provided by CEA. |            |
| 7 | Any information (data and variables) provided in the monitoring report that is different from that stated in the registered PD or any approved revised PD? (that has caused an increase in estimates of the emission reductions in the current monitoring period or is highly likely to increase the estimates of emission reductions in the future monitoring)<br><br>(Refer VVS 273 (c)) | It is found that the JMR readings are dated 5 <sup>th</sup> or 15 <sup>th</sup> of each month. How the electricity exported is calculated for the month of December 2013 i.e the end of the monitoring period, is not clear. PP is requested to take corrective action.                                                                                                                                                                                                  | CAR-2      |
|   | <b>Compliance of the monitoring plan with the monitoring methodology including applicable tool(s)</b>                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |
|   | <b>The monitoring plan of the proposed VCS project activity shall comply with the ap-</b>                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |

|    | Checklist Questions                                                                                                                                                                                                                                                                                                                                                                                                              | Comments by verifier                                                                                                                                                                                                                              | Conclusion |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
|    | <b>plied methodology.</b>                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                   |            |
| 8  | For monitoring aspects that are not specified in the methodology and where applicable the standardized baseline, particularly in the case of small-scale methodologies (e.g. additional monitoring parameters, monitoring frequency and calibration frequency), these should be brought to the attention of the Board issues which may enhance the level of accuracy and completeness of the monitoring plan.<br>(Refer VVS 276) | Not applicable                                                                                                                                                                                                                                    | OK         |
|    | <b>Compliance of monitoring activities with the registered monitoring plan.</b>                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                   |            |
|    | <b>Determine whether the monitoring of parameters related to the GHG emissions reductions in the project activity has been implemented in accordance with the monitoring plan contained in the registered PD or any accepted revised monitoring plan.</b>                                                                                                                                                                        |                                                                                                                                                                                                                                                   |            |
| 9  | Is the monitoring plan of the VCS project activity complying with the methodology applied by the registered VCS project activity or an approved revised PD?<br>(Refer VVS 278)                                                                                                                                                                                                                                                   | Yes. Monitoring plan and applied methodology have been properly implemented and duly followed by PP. Net electricity export to the grid is calculated based on the export and import data available from the JMR and cross checked with invoices. | OK         |
| 10 | Has the monitoring plan been properly implemented and followed by the project participants?<br>(Refer VVS 279 (a))                                                                                                                                                                                                                                                                                                               | Yes. Monitoring plan and applied methodology have been properly implemented and duly followed by PP                                                                                                                                               | OK         |
| 11 | Have all parameters stated in the monitoring plan, and relevant CDM Executive Board decisions been sufficiently monitored and updated as applicable, including:<br>(Refer VVS 279 (b))                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                   |            |

|    | Checklist Questions                                                                                                                                                                                                                                                                                                               | Comments by verifier                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Conclusion |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
|    | i) project emission parameters                                                                                                                                                                                                                                                                                                    | For wind projects, there is no project emission. It is as per applied methodology.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | OK         |
|    | ii) baseline emission parameters                                                                                                                                                                                                                                                                                                  | <p>Baseline emission is based on the net electricity exported to the grid. Monthly net electricity generation from the WTGs is calculated from the JMR and invoices. As per registered PD, Emission factor was calculated ex ante and it remains the same for the entire crediting period. The values thus calculated are used for calculating the baseline emission. So, the verification team concludes that baseline emission is calculated as per VCS requirements.</p> <p>From the report it is observed that there is a difference in actual ER and estimated ER. But reason for less net electricity generation, which depends on wind speed, wind availability, machine availability and grid availability, is not reflected in the monitoring report.</p> | CR-1       |
|    | iii) leakage parameters                                                                                                                                                                                                                                                                                                           | This parameter was adequately justified in the monitoring report.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | OK         |
|    | iv) Management and operational system: the responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan?                                                                                                                               | It is demonstrated that project management system procedures, including responsibility and authority of monitoring and reporting activities comply with registered monitoring plan. The emergency preparedness mentioned in the monitoring report is complete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | OK         |
| 12 | Has the equipment used for monitoring is in accordance with section 4 below and is controlled and calibrated in accordance with the monitoring plan, the applied methodology, the applied standardized baseline, the Board guidance, local/national standards, or as per the manufacturer's specification?<br>(Refer VVS 279 (c)) | <p>Energy meters are to be calibrated every 5 years as per validated monitoring plan which is also as per CEA guidelines. The energy meters are factory tested and supplied for commissioning to the state electricity board, which certifies its installation while the WTG is commissioned in line with the Power Purchase Agreement (PPA).</p> <p>Calibration certificates are not provided for 23 WTGs which are due for calibration.</p>                                                                                                                                                                                                                                                                                                                      | GAR-3      |
| 13 | Are monitoring results consistently recorded as per approved frequency?<br>(Refer VVS 279 (d))                                                                                                                                                                                                                                    | Yes. Clarification is raised as the frequency of calibration of Energy meters is not mentioned explicitly in the monitoring report                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CR-2       |

|    | Checklist Questions                                                                                                                                                                                                                                                                                  | Comments by verifier                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Conclusion                         |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| 14 | Have quality assurance and quality control procedures been applied in accordance with the monitoring plan or revised monitoring plan?<br>(Refer VVS 279 (e))                                                                                                                                         | The details of energy meter and calibrations details are provided in Appendix I of this monitoring report. For all the 84 WTGs the calibration is based on the requirements of the registered PD which is five years from the date of commissioning as per CEA guidelines. For 23 WTGs, as the five year period was completed, the calibration certificates due were checked. Hence it is verified that the QA/QC procedures are implemented as per the registered monitoring plan. | OK                                 |
|    | <b>Compliance with the calibration frequency requirements for measuring instruments.</b>                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                    |
|    | <b>Determine whether the calibration of those measuring equipments that have an impact on the claimed emission reductions is conducted by the project participants at a frequency specified in the applied monitoring methodology, the applied standardized baseline and/or the monitoring plan.</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                    |
| 15 | Identify if there is any monitoring equipment not calibrated in accordance with the monitoring plan, the applied monitoring methodology, the Board guidance, local/national standards, or as per the manufacturer's specification?<br>(Refer VVS 282)                                                | The monitoring equipment, which is the energy meter are subjected to calibration procedures which is under the control of the regulatory authority and it is verified that it is in accordance with the requirements of the registered Monitoring plan.<br><br>However Calibration certificates which are due for the 23 WTGs are not provided.<br>Refer S. No 12                                                                                                                   | <b>Depends on closure of CAR-3</b> |

|    | Checklist Questions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Comments by verifier | Conclusion |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------|
| 16 | <p>If there is delayed and the calibration has been implemented after the monitoring period in consideration (i.e. the results of delayed calibration are available), has the following conservative approach adopted in the calculation of emission reductions:</p> <p>(a) Applying the maximum permissible error of the instrument to the measured values taken during the period between the scheduled date of calibration and the actual date of calibration, if the results of the delayed calibration do not show any errors in the measuring equipment, or if the error is smaller than the maximum permissible error; or (Refer VVS 283)</p> | Refer S. No 15       | OK         |
| 17 | <p>(b) Applying the error identified in the delayed calibration test, if the error is beyond the maximum permissible error of the measuring equipment. (Refer VVS 283)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Refer S. No 15       | OK         |
| 18 | <p>Confirm that the error has been applied:</p> <p>(a) In a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed emission reductions;</p>                                                                                                                                                                                                                                                                                                                                                                                                                                            | Refer S. No 15       | OK         |
|    | <p>(b) For all measured values taken during the period between the scheduled date of calibration and the actual date of calibration. (Refer VVS 284)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Refer S. No 15       | OK         |

|    | Checklist Questions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Comments by verifier | Conclusion |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------|
| 19 | In cases where the results of the delayed calibration are not available, or the calibration has not been conducted at the time of verification, the verification team, prior to finalizing verification, shall request the project participants to conduct the required calibration and shall determine whether the project participants have calculated the emission reductions conservatively using the approach mentioned in paragraph 4.2 above.<br>(Refer VVS 285)                                                                                                                                       | Refer S. No 15       |            |
| 20 | In cases where the verification team determines that it is not possible for the project participants to conduct the calibration at a frequency specified by either the applied methodology, the applied standardized baseline, guidance provided by the Board, and/or the registered monitoring plan due to reasons beyond the control of project participants (For example, due to the contractual terms between the project participant and purchasing/selling entities), the verification team, shall follow the requirements for post registration changes in section of E of the VVS.<br>(Refer VVS 286) | Refer S. No 15       |            |

|    | Checklist Questions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Comments by verifier                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Conclusion |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 21 | In cases where neither the applied monitoring methodology, where applicable, the applied standardized baseline nor the monitoring plan specify any requirements for calibration frequency for measuring equipments, the verification team shall determine whether the equipments are calibrated either in accordance with the specifications of the local/national standards, or as per the manufacturer's specification. If neither local/national standards nor the manufacturer's specification are available, international standards may be used. Refer to appendix 1 of the VVS for an illustrative example to apply the above requirements.<br>(Refer VVS 287) | <p>The calibration certificates of the WTGs have been submitted and reviewed. The verification team has accepted the project deviation of applying the CEA guidelines for energy meter calibration which is the standard as issued by national regulatory authority of India. This approach is as per the Project standard guideline version 04, para 56(f) which states that "In cases where neither the selected methodology, nor the Board's guidance specify any requirements for calibration frequency for measuring equipments, project participants shall ensure that the equipment's are calibrated either in accordance with the local/national standards, or as per the manufacturer's specifications. If local/national standards or the manufacturer's specifications are not available, international standards may be used.</p> <p>In the absence of the implementation of periodic calibration, the energy meters are subjected to CEA guidelines applicable to India, dated 17-03-2006 which state that "All interface meters shall be tested at least once in five years. These meters shall also be tested whenever the energy and other quantities recorded by the meter are abnormal or inconsistent with electrically adjacent meters. Whenever there is unreasonable difference between the quantity recorded by interface meter and the corresponding value monitored at the billing center via communication network, the communication system and terminal equipment shall be tested and rectified."</p> <p>As per this guideline the verification team has reviewed the validity of the calibration (valid for a period of 5 years) as indicated in Appendix I of the Monitoring report</p> | OK         |
|    | <b>Assessment of data and calculation of emission reductions</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |
|    | <b>Assess the data and calculations of GHG emission reductions achieved by/resulting from the project activity by the application of the selected methodology and, where applicable, the applied standardized baseline.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |

|    | Checklist Questions                                                                                                                                                                                                                                                                                                                                                                                                           | Comments by verifier                                                                                                                                                                                                                                                                                                                                                            | Conclusion                             |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| 22 | If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, the verification team shall raise a CAR for the project participants to comply with the requirements of Appendix 1 of the Project Standard or submit a request for deviation prior to submitting the request for issuance, if appropriate; (Refer VVS 290 a) | Not applicable                                                                                                                                                                                                                                                                                                                                                                  | OK                                     |
| 23 | Has information provided in the monitoring report been crosschecked with other sources such as plant log books, inventories, purchase records, laboratory analysis? (Refer VVS 290 b)                                                                                                                                                                                                                                         | The energy generated is based on the Joint Meter Readings (JMR), which are taken monthly. Based on this the PP has raised invoices relating to financial transactions                                                                                                                                                                                                           | OK                                     |
| 24 | Have calculations of baseline emissions, proposed VCS project activity emissions and leakage, as appropriate, been carried out in accordance with the formulae and methods described in the monitoring plan, the applied methodology and where applicable, the applied standardized baseline? (Refer VVS 290 c)                                                                                                               | Yes, the information in the report has been crosschecked with the JMR reading along with invoices raised by the PP to the State Electricity board TNEB and the values used in the monitoring report are found to be correct. The equations used for calculating the emission reductions are in accordance with the methodology and in line with the registered monitoring plan. | OK                                     |
| 25 | Any assumptions used in emission calculations? If yes, they been justified? (Refer VVS 290 d)                                                                                                                                                                                                                                                                                                                                 | <p>Yes. Emission factor which is relevant as far as this project is concerned. The emission factor is determined ex ante and fixed for the crediting period and is correctly applied by the PP.</p> <p>But VER sheet is not provided.</p> <p>The emission factor assumed is not correct.<br/>The emission reductions for every year is not mentioned in the MR.</p>             | <p><b>CAR-4</b></p> <p><b>CR-3</b></p> |

|    | Checklist Questions                                                                                                                                                                                                                                                                                                                                                      | Comments by verifier                                                                                            | Conclusion |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------|
| 26 | Have appropriate emission factors, IPCC default values and other reference values been correctly applied?<br>(Refer VVS 290 e)                                                                                                                                                                                                                                           | The emission factor based on the CEA database as per the registered monitoring plan has been correctly applied. | OK         |
| 27 | For a registered VCS project activity using an approved standardized baseline that standardizes baseline emissions, have the standardized value(s) of the parameter(s) are applied using the correct version of the applied standardized baseline in accordance with the Project standard.<br>(Refer VVS 290 f)                                                          | Not applicable as the baseline is defined by the methodology, ACM 0002 itself                                   | OK         |
|    | <b>Post registration changes<br/>Temporary deviations from the registered monitoring plan, monitoring methodology and/or standardized baseline</b>                                                                                                                                                                                                                       |                                                                                                                 |            |
| 28 | Where the deviation is identified during verification, the DOE shall indicate in the verification report how the monitoring report reflects the application of the approved guidance from the Board regarding the deviation from the provisions of the registered monitoring plan, the applied methodology and /or the applied standardized baseline.<br>(Refer VVS 300) | Not applicable                                                                                                  | OK         |

|    | Checklist Questions                                                                                                                                                                                                                                                                                                                                                                                                  | Comments by verifier | Conclusion |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------|
| 29 | Where the deviation is identified prior to verification, the DOE shall state its opinion on whether the deviation reflects the application of the approved guidance from the Board regarding the deviation from the provisions of the registered monitoring plan, the applied methodology and /or the applied standardized baseline and as per the applicable provisions of the Project Standard.<br>(Refer VVS 301) | Not applicable.      | OK         |
|    | <b>Corrections</b>                                                                                                                                                                                                                                                                                                                                                                                                   |                      |            |
| 30 | If the DOE identifies that the project participants have made corrections to project information or parameters determined at validation, the DOE shall determine whether:<br>(a) The corrected information is an accurate reflection of actual project information; and/or<br>(Refer VVS 303 a)                                                                                                                      | Not applicable.      | OK         |
| 31 | The corrected parameters are in accordance with the applied methodology the monitoring plan and /or the applied standardized baseline.<br>(Refer VVS 303 b)                                                                                                                                                                                                                                                          | Not applicable.      | OK         |
|    | <b>Changes to the start date of the crediting period</b>                                                                                                                                                                                                                                                                                                                                                             |                      |            |
| 32 | The DOE shall indicate if the requirements in the Project standard have been met and shall submit a request for post registration changes in accordance with the Project cycle procedure.<br>(Refer VVS 306)                                                                                                                                                                                                         | Not applicable       | OK         |
|    | <b>Permanent changes from the registered monitoring plan or monitoring methodology</b>                                                                                                                                                                                                                                                                                                                               |                      |            |

|    | Checklist Questions                                                                                                                                                                                                                                                                                                                                                                                              | Comments by verifier                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Conclusion   |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 33 | <p>The DOE shall determine whether the changes to the monitoring plan contained in the registered PDD proposed by the project participants are in compliance with the applied methodology and, where applicable, the applied standardized baseline and do not reduce the level of accuracy of the monitoring compared with the requirements contained in the registered monitoring plan.<br/>(Refer VVS 308)</p> | <p>Project Deviation 1:<br/>The initial commissioning date of the WTGs is considered as the initial calibration date of the energy meters, which is in line with the registered monitoring plan. Further, these meters are certified as factory calibrated by the manufacturer and are installed by the regulatory authority as per the requirements in the power purchase agreements. The project deviation relates that if the meters are commissioned and the initial calibration is done by the manufacturer, the validity of the calibration, up to a period of five years in the subsequent monitoring periods can be cross checked by verification of the monthly invoices raised by the PP, which is indicative of the accurate functioning of the energy meters as the invoices are based on the joint meter readings, agreed by the PP and the regulatory authority. The validity of calibration for a period of five years is in line with the registered monitoring plan and CEA guidelines, 2006.</p> <p>In order to ensure that the project deviation is applied, this is raised as a FAR for cross check during subsequent verifications.</p> <p>The project deviation relates that if the meters are commissioned and the initial calibration is done by the manufacturer, the validity of the calibration, up to a period of five years in the subsequent monitoring periods can be cross checked by verification of the monthly invoices raised by the PP, which is indicative of the accurate functioning of the energy meters</p> | <b>FAR 2</b> |

|    | Checklist Questions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Comments by verifier | Conclusion |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------|
| 34 | In cases where the proposed changes refer to a later version of the applied methodology and /or the applied standardized baseline in the registered PD, the DOE shall determine whether the application of any later version of the applied methodology any applicable tool(s) and/or the applied standardized baseline does not impact the conservativeness of the monitoring and verification process, including the related emission reduction calculations.<br>(Refer VVS 309)                                                                                                                                                                        | Not applicable.      | OK         |
| 35 | If the DOE identifies that the project participants are unable to implement the monitoring plan contained in the registered PD and it will not be possible to monitor the registered VCS project activity in accordance with a monitoring plan that would comply with the applied methodology any applicable tools, and, where applicable, the standardized baseline or the relevant provisions of appendix 1 of the Project standard, the DOE shall request guidance from the Board concerning the acceptability of the permanent changes in accordance with the section on post registration changes in the Project cycle procedure.<br>(Refer VVS 310) | Not applicable.      | OK         |

|    | Checklist Questions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Comments by verifier | Conclusion |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------|
| 36 | The DOE shall determine whether the permanent changes are likely to lead to a reduction in the accuracy of the calculation of emission reductions. In cases where the DOE considers that the permanent changes will lead to a reduction in the accuracy of the calculation of emission reductions, the DOE shall request the project participants to apply conservative assumptions or discount factors to the calculations to the extent required to ensure that emission reductions will not be over-estimated as a result of the permanent change.<br>(Refer VVS 311) | Not applicable.      | OK         |
|    | <b>Changes to the project design of a registered project activity</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |            |
| 37 | If the DOE identifies that the project design in the implementation or operation of the project activity does not conform with the description contained in the registered PD or the relevant provisions of appendix 1 of the Project standard, the DOE shall request guidance from the Board concerning the acceptability of the proposed or actual changes in accordance with the section on post registration changes in the Project cycle procedure.<br>(Refer VVS 315)                                                                                              | Not applicable.      | OK         |

|    | Checklist Questions                                                                                                                                                                                                                                                                                                                                              | Comments by verifier | Conclusion |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------|
| 38 | In case of actual changes, the DOE shall, by means of an on-site visit and review of the submitted revised PD by the project participants, which describes the nature and extent of the actual changes, determine whether this description accurately reflects the implementation, operation and monitoring of the modified project activity.<br>(Refer VVS 316) | Not applicable.      | OK         |
| 39 | The DOE shall conduct an on-site inspection to assess the impacts of the actual changes on the compliance of the monitoring plan, the level of accuracy of the monitoring activity, the applied monitoring methodology and including applicable tool(s) and/or, where applicable, the applied standardized baseline.<br>(Refer VVS 317)                          | Not applicable.      | OK         |

|    | Checklist Questions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Comments by verifier | Conclusion |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------|
| 40 | <p>The DOE shall, by means of reviewing the revised PD against applicable additionality and methodological requirements, determine whether the proposed or actual changes would adversely affect the conclusions of the validation report of the registered PD with regard to:</p> <p>(a) Additionality of the project activity;<br/> (b) Scale of the project activity;<br/> (c) Applicability and application of the approved baseline methodology and, where applicable, the approved standardized baseline under which the project activity has been registered; or<br/> (d) The compliance of the monitoring plan with the applied monitoring methodology and, where applicable, the applied standardized baseline<br/> (Refer VVS 318)</p> | Not applicable.      | OK         |
| 41 | <p>If the proposed or actual changes affect the additionality of the project activity then the DOE shall confirm that:</p> <p>(a) In the case of investment analysis, project participants have only modified the key parameters in the original spreadsheet calculations affected by the proposed or actual changes to the project activity;<br/> (b) In the case where only barriers have been claimed to demonstrate additionality, project participants have demonstrated that the barriers are still valid under the new circumstances.<br/> (Refer VVS 319)</p>                                                                                                                                                                            | Not applicable.      | OK         |

|    | Checklist Questions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Comments by verifier | Conclusion |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------|
| 42 | For registered VCS project activity using an approved standardized baseline that standardizes additionality:-<br>If the proposed or actual changes affect the additionality of the project activity then the DOE shall confirm that the project activity complies with the positive list of the applied standardized baseline in the registered PD.<br>(Refer VVS 320)                                                                                                                                                                                                                                                                                                                                                              | Not applicable.      | OK         |
| 43 | The DOE shall confirm that the applied methodology including applied tools and/or the applied standardized baseline do not impact the conservativeness of the monitoring and verification process and the related emission reduction calculations in cases where:<br>(a) The proposed or actual changes impact the implementation of the project activity;<br>(b) The original methodology and/or the original standardized baseline would no longer be applicable; and<br>(c) The project participant applies:<br>(i) A later version of the methodology and/or the standardized baseline; or<br>(ii) Another methodology and/or another standardized baseline that is(are) applicable to the project activity.<br>(Refer VVS 321) | Not applicable.      | OK         |

|    | Checklist Questions                                                                                                                                                                                                                                                                                                                                                     | Comments by verifier | Conclusion |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------|
| 44 | The DOE shall assess whether the revised PD complies with:<br>(a) The applied methodology, tools and/or standardized baseline;<br>(b) Any later version of the methodology and/or the standardized baseline; or<br>(c) The requirements of another methodology and/or another standardized baseline that is(are) applicable to the project activity.<br>(Refer VVS 322) | Not applicable.      | OK         |

**TABLE 2: RESOLUTION OF CORRECTIVE ACTION AND CLARIFICATION REQUESTS**

| Draft report clarifications and corrective action requests by validation team                                                                                                                                                                     | Ref. to checklist question in table 1 | Summary of project owner response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Verification team conclusion                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CAR 1</b><br>The project was claiming CDM also. But evidence for there will not be any double counting is not provided.                                                                                                                        | S. No 2                               | The evidence for there will not be any double counting for this crediting period is provided now.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | The verification team has reviewed the undertaking letter stating that there is no double counting for this crediting period which is accepted.<br><br>Conclusion:<br>CAR 1 is closed.  |
| <b>CAR 2</b><br>It is found that the JMR readings are dated 5 <sup>th</sup> or 15 <sup>th</sup> of each month. How the electricity exported is calculated for the month of December 2013 is not clear. PP is requested to take corrective action. | S. No 7                               | The calculation of electricity exported for the balance period up to 31 <sup>st</sup> Dec 2013 is done by following apportioning procedure.<br><u><b>For 5<sup>th</sup>:</b></u><br>End date as per JMR = 05.12.2013<br>End date as per monitoring period = 31.12.2013<br>End date of the next month = 05.01.2014<br>The daily readings are also noted in the log sheets. So, the net electricity exported to the grid is calculated from 6 <sup>th</sup> December 2013 to 31 <sup>st</sup> December 2013 is calculated as follows.<br>Apportioned Generation for balance period for Dec 13 = Daily electricity summation for 6 <sup>th</sup> December 2013 to 31 <sup>st</sup> December 2013. It is also crosschecked with the Jan 2014 invoice.<br>Similar way it is calculated for JMRs having end date on 15 <sup>th</sup> . | The verification team has reviewed the apportioning mechanism used for this project and checked the log sheets and accepted the same as correct.<br><br>Conclusion:<br>CAR 2 is closed. |
| <b>CAR 3</b>                                                                                                                                                                                                                                      | S. No 12                              | Calibration certificates are now provided.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Calibration certificate for the 23                                                                                                                                                      |

| Draft report clarifications and corrective action requests by validation team                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Ref. to checklist question in table 1 | Summary of project owner response                                                                                                                                                                      | Verification team conclusion                                                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| As per the validated PD, the energy meters are to be calibrated every 5 years. Calibration certificates are not provided for 23 WTGs which are due for calibration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       |                                                                                                                                                                                                        | windmills which are due for calibration is reviewed and accepted as all the meters are working with its intended accuracy.<br><br>Conclusion:<br>CAR 3 is closed. |
| <b>CAR 4</b><br>The emission factor is determined ex ante and fixed for the crediting period and is applied by the PP from the relevant source. However, the emission factor value assumed is not correct.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | S. No 25                              | The emission factor assumed is now corrected.                                                                                                                                                          | The verification team has checked the emission factor in the corrected VER sheet and accepted the same.<br><br>Conclusion:<br>CAR 4 is closed                     |
| <b>CR 1</b><br>Baseline emission is based on the net electricity exported to the grid. Monthly net electricity generation from the WTGs is calculated from the JMR and invoices. As per registered PD, Emission factor was calculated ex ante and it remains the same for the entire crediting period. The values thus calculated are used for calculating the baseline emission. So, the verification team concludes that baseline emission is calculated as per CDM requirements.<br><br>From the report it is observed that there is a difference in actual ER and estimated ER. But reason for difference in net electricity generation which depends on wind speed, wind availability, machine availability and grid availability is not reflected in the monitoring report. | S. No 11                              | The reasons which are mainly attributable for the difference in electricity generation are as follows;<br><br>1. Wind availability<br>2. Wind speed<br>3. Machine availability<br>4. Grid availability | The verification accepted the attribution factor for the deviation in the actual generation which is reasonable.<br><br>Conclusion:<br>CR 1 is closed             |

| Draft report clarifications and corrective action requests by validation team                                                                                                                                              | Ref. to checklist question in table 1 | Summary of project owner response                                                                       | Verification team conclusion                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CR 2</b><br>Clarify, as the frequency of calibration of Energy meters is not mentioned explicitly in the monitoring report                                                                                              | S. No 13                              | The frequency of calibration of Energy meters is now mentioned explicitly in the monitoring report      | The verification team has reviewed the monitoring report and now the frequency is now mentioned.<br><br>Conclusion:<br>CR 2 is closed                                                                                     |
| <b>CR 3</b><br>The emission reductions for every year (data vintages) are not mentioned in the MR.                                                                                                                         | S. No 25                              | The emission reductions for every year (data vintages) are now mentioned in the MR                      | The verification team has reviewed the monitoring report and now the ER for each data vintage is now mentioned.<br><br>Conclusion:<br>CR 3 is closed                                                                      |
| <b>FAR 1</b> (carried over from the validation report)<br>It has to be ensured that double counting of the emission reductions does not take place throughout the VCS crediting period as the PP may propose for CDM also. | Validation report                     | Undertaking letter is provided to support that no double counting takes place for this crediting period | The verification team has reviewed the undertaking letter stating that there is no double counting for this crediting period which has been accepted.<br><br>Conclusion:<br>FAR 1 is closed for this verification period. |
| <b>FAR 1</b> (raised in this verification)<br><br>It is to be verified the double counting of emission reductions do not take place throughout the crediting period of this VCS project activity                           | S. No.3                               |                                                                                                         |                                                                                                                                                                                                                           |

| Draft report clarifications and corrective action requests by validation team                                                                                                                                                                                                                                                                                                                                                       | Ref. to checklist question in table 1 | Summary of project owner response | Verification team conclusion |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------|------------------------------|
| <p>FAR 2 (raised in this verification)</p> <p>The project deviation relates that if the meters are commissioned and the initial calibration is done by the manufacturer, the validity of the calibration, up to a period of five years in the subsequent monitoring periods can be cross checked by verification of the monthly invoices raised by the PP, which is indicative of the accurate functioning of the energy meters</p> | S. No. 33                             |                                   |                              |