

VALIDATION REPORT OF “TUPPADAHALLI WIND ENERGY PROJECT”



Document Prepared By Bureau Veritas Holdings SAS

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Summary:

Bureau Veritas Certification has conducted the validation of the ‘Tuppadahalli Wind Energy Project’ project of Tuppadahalli Energy India Pvt. Ltd, located at Karnataka State of India. The total installed capacity of this project activity is 56.10 MW from 34 WTGs and the capacity of each WTG is 1.65 MW. The project activity exports the entire power generated to the state grid maintained by the Karnataka Power Transmission Corporation Limited (KPTCL). The electricity generated will be supplied to Mangalore Electricity Supply Company (MESCOM).

The validation scope is defined as an independent and objective review of the project design document, the project’s baseline study, monitoring plan and other relevant documents, and consisted of the following three phases

- i) Desk review of the project design and the baseline and monitoring plan;
- ii) Physical site inspection and follow-up interviews with project stakeholders;
- iii) Resolution of outstanding issues and the issuance of the final validation report and opinion.

The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the validation process is a list of Clarification and Corrective Actions Requests (CL and CAR), presented in Appendix A. Taking into account this output, the project proponent revised its project design document.

In Bureau Veritas Certification’s opinion that the project correctly applies the baseline and monitoring methodology ACM0002 version 12.2.0 and meets the relevant requirements for the VCS and the relevant host country criteria.

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1 INTRODUCTION

1.1 Objective

The validation serves as project design validation and is a requirement of all projects. The validation is an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant VCS and host country criteria are validated in order to confirm that the project design, as documented, is sound and reasonable, and meet the stated requirements and identified criteria. Validation is a requirement for all VCS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of verified emission reductions (VERs).

1.2 Scope and Criteria

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The validation follows VCS Standard and latest policy announcements, from VSC Board, presently applicable to the validation of project activity.

The validation is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3 Level of assurance

Validation is a requirement for all VCS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emission reductions. Based on the process and procedure conducted, it can be concluded that the GHG assertion is materially correct and is a fair representation of GHG data and information which has been prepared in accordance with the VCS Standard. The validation team considers the assurance level as 'limited' since some of the data used (E.g. Emission factor) are from the publicly available databases such as CEA database for emission factor of the grid, for which detailed testing of GHG assertion is beyond the domain of project proponent, stake holder and the validation team.

1.4 Summary Description of the Project

The project activity is the installation of Wind Turbine Generators (WTG's) in Shimoga and Chitradurga Districts of Karnataka, India promoted by the project proponent, an Indian company that is a 100% subsidiary of the Spanish Acciona group of companies, i.e., Acciona Energía Internacional, S.A. and Acciona, S.A. The total installed capacity of this project activity is 56.1 MW from 34 WTGs and the capacity of each WTG is 1.65 MW. The entire power generated will be exported to the state grid maintained by the Karnataka Power Transmission Corporation Limited (KPTCL). The electricity generated will be supplied to Mangalore Electricity Supply Company (MESCOM) under a long-term Power Purchase Agreement (PPA). MESCOM is a licensed electricity distribution company, owned and controlled by the State Government of Karnataka, and an integral part of the Southern Regional Grid.

In the absence of the project activity the equivalent amount of electricity would have been generated from the grid connected/new power plants in the southern grid which are/will be predominately based on fossil fuels. The fossil fuel based power generation has been the mainstay of electricity generation in the Indian Power Sector.

2 VALIDATION PROCESS

2.1 Method and Criteria

The proposed project activity is registered under CDM with UNFCCC number 5198. However, a member of validation team has done the site visit, interview with the project participant and document review on 11/07/2012.

Based on the above assessment the validation team confirms that the project description provided in the PD is accurate and complete.

2.2 Document Review

The validation team has assessed the accuracy of the project description through a combination of steps consisting of review of contract related to the project activity, Scrutiny of technical specification, site visit and interview of the project proponent and their representatives. Following supporting documents were reviewed for the current validation period:

- Registered CDM and the Validation Report
- Monitoring report and emission reduction spreadsheet for the current verification period.
- Form B or JMR statements from August 2011 to March 2012.
- Invoice Copies from August 2011 to March 2012.
- Payment Receipt Copies from August 2011 to March 2012.
- Emission Reduction Calculation Sheet
- Calibration Certificates

2.3 Interviews

The validation team has conducted the interview process; following is the list of persons interviewed:-

SR. NO	NAME OF THE PERSONS INTERVIEWED	ORGANIZATION
1	Mr. Uttang Dutt	Finance Manager - Acciona Energy

2	Mr. Oxford	Project Manager - Acciona Energy
3	Mr. Raghavendra	O&M Incharge - Vestas Wind Technology India Private Limited

While interviewing the above mentioned personals, the validation team understood the project implementation, operation and maintenance, Quality Assurance/Quality Check, Data archiving procedure, which is in accordance with the applied methodology ACM002 version 12.2.0 and the same is described in the VCS PD and registered PDD under CDM with UNFCCC ref number 5198.

2.4 Site Inspections

The physical site inspection was carried out by a member of the validation team on 11/07/2012 to cover following objectives:

- To ensure that project activity has been implemented and operated as per the description contained in the VCS PD and the MR
- To ensure that the monitoring and data recording has been carried out in accordance with the applied monitoring methodology ACM 0002. version 12.2.0 (applied by the project participant)

The methods adopted to meet the above-mentioned objectives consists of the interaction with the plant personnel, visit to the WTGs and to the substation (Shivani substation). In addition to the physical site visit, there was an office discussion on 12/07/2012 where all documents were reviewed by the verification team followed by discussions with the management and operation of the project activity.

2.5 Resolution of Any Material Discrepancy

Based on the physical site visit, personal interview and document review, the validation team has raised 6 Corrective Action Request (CAR) and 1 Clarification Request (CL), which are presented below:-

CAR 1	Justification for acceptance
The Project Start date was was not mentioned as per the VCS standards and hence CAR 1 was raised.	In response, the PP revised the project start date as per the VCS Standards in the VCD PD and hence CAR 1 was closed.
CAR 2	Justification for acceptance
The Project crediting period was was not mentioned as per the VCS standards and	In response, the PP revised the project crediting period as per the VCS Standards in the VCD PD and hence

hence CAR 2 was raised.	CAR 2 was closed.
CAR 3	Justification for acceptance
The roles and responsibilities of the project proponent were not mentioned in the VCS PD and hence CAR 3 was raised.	In response, the PP included the roles and responsibilities in the revised VCS PD and hence CAR 3 was closed.
CAR 4	Justification for acceptance
The project got registered under UNFCCC on 26th March, 2012, whereas the PP claims the crediting period from 1st April, 2012. CAR 4 was raised to enquire that how the PP will show that there was no double counting.	In response, the PP informed UNFCCC that they won't claim the ERs from 26 th March, 2012 to 31 st March, 2012. The email communication and the acknowledgement received from UNFCCC has been provided to the DOE and hence CAR 4 was closed.
CAR 5	Justification for acceptance
The table explaining the Project Scale and Estimated GHG Emission Reductions was not as per the VCS standards and hence CAR 5 was raised.	In response, the PP revised the VCS PD in line with the VCS standards and hence CAR 5 was closed.
CAR 6	Justification for acceptance
The conditions existing prior to the project initiation was not mentioned as per the guidelines of VCS standard and hence CAR 6 was raised.	In response, the PP revised the VCS PD saying that the project was a Greenfield project and there was no other Renewable Energy or conventional power plants existing at the same location prior to the project activity and hence CAR 6 was closed.
CL 1	Justification for acceptance
The latitude and longitude of the project site were not matching with the latitude and longitude mentioned in the registered CDM PDD and hence CL 1 was raised.	In response, the PP revised the latitude and longitude of the project site in the VCS Project Description and hence CL 1 was closed.

3 VALIDATION FINDINGS

3.1 Project Design

- **Project scope, type, technologies and measures implemented, and eligibility of the project**

Project scope, type, technologies and measures implemented by the project activity has been assessed by the validation team, and same has been cross checked with the registered CDM project as the project activity is already registered under CDM (UNFCCC ref Number 5198).

The validation team confirms that project design, technology and measure implemented by the project activity is as per the actual scenario observed during the physical site visit and also the project activity has met all the applicability criteria of the applied methodology ACM0002 version 12.2.0.

- **Project proponent**

The project participant for the project activity is “Tuppadahalli Energy India Pvt. Ltd”, the same is confirmed with the Host Country Approval issued to project participant, dated 27/09/2011.

- **Project start date**

The start date of the project activity is 29/07/2011, which is the commissioning date of the project activity and the same is checked with the commissioning certificate issued by Mangalore Electricity Supply Company Limited.

- **Project crediting period**

The crediting period of the project activity is from on 29/07/2011 to 01/04/ 2012 mentioned in the VCS PD. The expected operational lifetime of the project activity is 20 years and the project proponent expects to go for a renewable crediting period of 7 years. So, the first crediting period will go from 1 April 2012 to 31 March 2019 since the project is registered under UNFCCC. The project has a seven year twice renewable project crediting period and will not go for VCU issuance beyond the end of those periods. Although the project was registered under the UNFCCC Kyoto Protocol as a CDM project with effect from 26 March 2012, the project owner will claim VCUs until 31 March 2012 and confirms that CERs will not be claimed under the UNFCCC or any other GHG mechanism for the period 26 March 2012 until 31 March 2012 and there will be no double counting of carbon credits. The change in start date has been informed to UNFCCC and they have acknowledged the change in start date to 1 April 2012.

- **Project scale and estimated GHG emission reductions or removals**

The estimated annual GHG emission reductions are 128, 809 tCO₂e which is less than 1,000,000 tCO₂e per year;

- **Project location**

The project activity is located located near Village of Tuppadahalli in the Hollalkere and Chennagiri Taluk in the district of Shimoga and Chittradurga in the Indian state of Karnataka and the same were cross checked with the commissioning certificate of the project activity.

Ownership and other programs

- **Participation under other GHG programs**

The proposed project activity participated and successfully registered under Clean Development Mechanism (CDM) on 26/03/2012. The validation team has checked the same with UNFCCC website.

- **Other forms of environmental credit sought or received**

The proposed project activity also participated and successfully registered under Clean Development Mechanism (CDM) on 26/03/2012. The validation team has checked the same with UNFCCC website.

- **Rejection by other GHG programs**

The proposed project activity participated and successfully registered under Clean Development Mechanism (CDM) on 26/03/2012. The validation team has checked the same with UNFCCC website.

Additional information relevant to the project

- **Eligibility criteria for grouped projects**

The proposed project activity is not a grouped project. Hence not applicable to the project activity

- **Leakage management for AFOLU projects**

The proposed project activity does not involve any leakage and the same is considered as zero, which is prescribed by the applied methodology ACM0002 Version 12.2.0

3.2 Application of Methodology

3.2.1 Title and Reference

The project activity “Tuppadahalli Wind Energy Project” has applied the approved methodology ACM0002, version 12.2.0 “Consolidated baseline methodology for Grid connected electricity generation from renewable sources”

Reference: Consolidated Baseline methodology ACM 0002 (Version 12.2.0, EB 65)

The applied methodology is applicable to the type of project activity, as the same methodology is applied for the project activity which is registered under CDM with UNFCCC Ref 5198.

3.2.2 Applicability

The approved methodology applicable to the project activity is ACM0002, version 12.2.0 “Consolidated baseline methodology for Grid connected electricity generation from renewable sources”. The validation team has reviewed the justification provided by the project participant in

the registered PDD under CDM (UNFCCC Ref: 5198) and confirms that the proposed project satisfies all the applicability condition specified in the applied methodology.

3.2.3 Project Boundary

The validation team has reviewed the project boundary for the project activity indicated in the registered PDD under CDM (UNFCCC Ref: 5198) and the same is in accordance with the definition provided by the applied methodology ACM 0002, version 12.2.0. i.e. "The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to".

3.2.4 Baseline Scenario

The project activity is the installation of a new grid connected renewable power plant, hence the baseline scenario is prescribed by the applied approved methodology ACM002, version 12.2.0 i.e. "Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources". The same was checked with the baseline scenario mentioned in the registered PDD under CDM (UNFCCC Ref: 5198).

3.2.5 Additionality

The validation team has reviewed the documents such as Investment analysis sheet, registered PDD and sources of the parameters of the project activity registered under CDM with UNFCCC Ref 5198 and confirm that the project participant has used the latest available Tool for demonstration of additionality and fulfil the requirement of VCS standard.

3.2.6 Quantification of GHG Emission Reductions and Removals

- Quantification of baseline emissions**

The emission reduction calculation has been done as per the methodology ACM0002, Version 12.2.0.

Baseline Emission (BE_y): $BE_y = EG_{BL,y} * EF_{CO_2} \dots \dots \dots (1)$

The value of $EG_{BL,y} = 57,918$ MWh/year and $EF_{CO_2} = 0.9445$ tCO₂e/MWh and it is fixed ex ante for the crediting period.

$$BE_y = 54,703 \text{ tCO}_2/\text{year}$$

- Quantification of project emissions**

This project activity is a grid connected wind power generation. Hence there is no project emission from the project activity.

$$PE_y = 0 \text{ tCO}_2/\text{year}$$

- **Quantification of leakage**

As per the ACM0002 version 12.2.0 the leakage is considered as zero, $L_y = 0$.

- **Summary of GHG emission reductions or removals**

Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y$$

Where:

ER_y = Emission reductions in year y (tCO_2e)

BE_y = Baseline emissions in year y (tCO_2e)

PE_y = Project emissions in year y (tCO_2e)

LE_y = Leakage emissions in year y (tCO_2e)

Since PE_y and LE_y is zero as explained above, $ER_y = BE_y$

$$ER_y = 54,703 \text{ tCO}_2$$

3.2.7 Methodology Deviations

There is no deviation from the applied methodology

3.2.8 Monitoring Plan

The project activity is registered under CDM with UNFCCC Ref: 5198. The validation team has checked the monitoring plan, monitored parameter, monitoring equipments and procedure mentioned in the registered PDD and the same was verified during the site visit on 11/07/2012.

3.3 Environmental Impact

The project activity does not require any environmental impact assessment (EIA) to be conducted as per EIA notification. Furthermore the Environmental Impact Assessment study is not required for wind power project as there is no negative environmental impact due to the project activity and wind energy is one of the cleanest sources of energy.

3.4 Comments by stakeholders

The stakeholders were happy with the development of the project in the region. They were happy to get the employment and also appreciated the development that the project activity brought to the region.

4 VALIDATION CONCLUSION

Bureau Veritas Certification has performed a validation of the "Tuppadahalli Wind Energy Project". The validation was performed on the basis of VCS standard and host country criteria

and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The validation consisted of the following three phases:

- i) A desk review of the project document, the baseline and monitoring plan;
- ii) Follow-up interviews with project stakeholders;
- iii) The resolution of outstanding issues and the issuance of the final validation report and opinion.

By description of the project, the project is likely to result in reductions of GHG emissions partially. An analysis of the project description demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions as:-

GHG Emission Reductions or Removals	tCO ₂ e
Baseline Emissions	54,703
Project Emissions	0
Leakage	0
Net GHG emission reductions or removals	54,703

5 REFERENCES

1. Registered PDD under CDM (UNFCCC Ref: 5198)
2. Host Country Approval from Ministry of Environment & Forests with reference no: 4/12/2011-CCC, Dt.27/09/2011
3. Form- B for the Months July, 2011 to March, 2012
4. Invoices raised by the project proponent for the period July, 2011 to March, 2012
5. Energy meter calibration report by KPTCL dated 28/03/2012
6. Emission reduction spreadsheet
7. VCS Standard, Version 3.2 dated 1st February 2012 and VCS Programme Guide Version 3.3 dated on 1st May, 2012
8. CDM Approved methodology ACM 0002 version 12.2.0 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”

6 C.V. OF THE DOE'S VALIDATION TEAM MEMBERS

V. SenthilKumar Team Member, Lead Verifier – Climate Change

He is a Environmental Engineer with over 5 years of experience in the field of Consultancy related to Training and Implementation of Management Systems (ISO : 9000, 14000 & 18000) for various organizations. For the last 4 years, he is involved in different type of Clean Development Mechanism Projects. He has also experience in offering project management services to various renewable energy projects. Has undergone training related to Clean Development Mechanism and is currently involved in validation and verification of CDM project activities.

Nazia Naqvi, Team Member, Verifier – Climate Change

Ms. Nazia Naqvi is a Post-graduate in M.Sc Energy Systems with over 3 years of experience in the field of clean development mechanism. She is working in Bureau Veritas Certification (India) Pvt. Ltd. as Verifier-Climate Change. She has received extensive training in CDM validation and verification processes and participated in assessment of CDM/VCS projects.

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