

WIND POWER PROJECT OF CLP WIND FARMS (INDIA) PRIVATE LIMITED AT JATH



Document prepared by

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Summary:

Bureau Veritas Certification has conducted the validation of the “**Wind Power Project of CLP Wind Farms (India) Private Limited at Jath**” project of **CLP Wind Farms (India) Private Limited.**, located across villages Jath, Devnal, Untwadi, Khojanwadi, Valsang, Mendhegiri, Amrutwadi, Salagiri & Achakanalli in Sangli District of Maharashtra state in India on the basis of Verified Carbon Standard Version 3.5 as well as criteria given to provide for consistent project operations, monitoring and reporting.

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) visit to the project site; iii) resolution of outstanding issues and the iv) issuance of the final validation report and opinion. The overall validation was conducted using Bureau Veritas Certification internal procedures.

In summary, it is Bureau Veritas Certification's opinion that as the project correctly applied the baseline and monitoring methodology ACM 0002, version 16.0. The project is in compliance with VCS criteria and the relevant host country criteria.

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Abbreviations:

VER	Voluntary Emission Reduction
VCS	Verified Carbon Standard
VCU	Voluntary Carbon Unit
CAR	Corrective Action Request
CL	Clarification Request
VVB	Validation & Verification Body
FAR	Forward Action Request
CO ₂	Carbon Dioxide
DR	Document Review
GHG	Green House Gases
I	Interview
MV	Means of Validation
MP	Monitoring Plan
MR	Monitoring Report
PD	Project Document
UNFCCC	United Nations Framework Convention for Climate Change
CDM	Clean Development Mechanism
HCA	Host Country Approval
MU	Million Units
kW	Kilowatt
kWh	Kilowatt-hour
MW	Megawatt
MWh	Megawatt-hour
EF	Emission factor
EPA	Energy Purchase agreement
JMR	Joint Meter Reading
CEA	Central Electricity Authority
MSEDCL	Maharashtra State Electricity Distribution Co. Ltd.
MSETCL	Maharashtra State Electricity Transmission Co. Ltd.
MEDA	Maharashtra Energy Development Agency
MERC	Maharashtra Electricity Regulatory Commission
PP	Project Participant
WTG	Wind Turbine Generator

1. INTRODUCTION

1.1 Objective

The validation serves as project design verification and is a requirement of all projects. The validation is an independent third party assessment of the project design. 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 voluntary emission reductions (VERs) or voluntary carbon units (VCUs).

1.2 Scope and Criteria

The validation scope is defined as an independent and objective review of the project document, the project's baseline and monitoring plan and other relevant documents. The information in these documents is reviewed against criteria as described under VCS Version 3.5 standard. The validation team was provided with a VCS PD (/1/) along with other relevant documents. Based on this document and review and interviews performed, a validation of the above said VCS PD was conducted and reported.

1.3 Level of Assurance

The validation report is based on the documents made available to validator and information provided during interviews. Based on the process and procedures conducted for supplementary validation, Bureau Veritas can conclude with **REASONABLE** assurance that the GHG assertion is realistic and measurable. The project activity complies with the guidelines/criteria provided by VCS association.

1.4 Summary Description of the Project

The project activity involves the installation of 30 Wind Turbine Generators (WTGs) of Gamesa make of capacity 2.0 MW each in Jath, Devnal, Untwadi, Khojanwadi, Valsang, Mendhegiri, Amrutwadi, Salagiri & Achakanalli villages in Sangli District of Maharashtra state in India. The total capacity of the project activity is 60 MW and the entire power generated by the project activity will be exported to the NEWNE grid with a firm power purchase agreement with the Maharashtra State Electricity Distribution Company Ltd. (MSEDCL) (/11/).

The project activity generates electricity using wind energy, which does not result in any greenhouse gas (GHG) emissions. Thus, this project activity will lead to a reduction in GHG emissions that would otherwise have occurred when using electricity generated from conventional fossil fuel based sources in the NEWNE grid.

2 VALIDATION PROCESS

2.1 Method and Criteria

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

In order to ensure transparency, a validation report is based according to the Verified Carbon Standard Version 3.5 March 2015, and Validation report template version 3.3 which are the latest available at the VCS official website (<http://v-c-s.org/>). The protocol adopted for the validation shows, in a transparent manner, criteria (requirements), means of validation and the results from validating the identified criteria. The validation protocol serves the following purposes:

- ✓ It organizes details and clarifies the requirements a CDM 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 validation team was provided with a VCS PD along with other relevant documents. The validation protocol forms a part of Bureau Veritas' validation report.

2.2 Document Review

The validation team was provided with VCS Project Document along with other relevant supporting documents. The review of these documents and other related documents was carried out on and from 10/08/2015. The documents provided by the PP including VCD PD and additional background documents related to VCS PD were reviewed. Guidelines for completing VCS PD (VCS Version 3 dated 4 October 2012 v3.3), approved methodology, clarifications on validation requirements to be checked by Validation & Verification Bodies (VVBs) were also reviewed. Bureau Veritas Certification raised corrective action and clarification requests [CARs and CLs] as assessment findings. The validation findings presented in this report relate to the project as described in the VCS PD dated 29/08/2015 (/2/). This version of the Project Document is in line with the latest format for the VCS PD and guidance for completion of the VCS PD as provided by VCS Version 3.

2.3 Interviews

On and from 11/08/2015, Bureau Veritas Certification performed interviews with representatives of CLP Wind Farms (India) Pvt. Ltd. (Project Owner and Project Proponent) and O & M Service provider Gamesa Wind Turbines Pvt. Ltd., to confirm selected information and to resolve issues identified in the document review.

Interviewed organization	Interview topics
CLP Wind Farms (India) Pvt. Ltd.	• Project design and implementation status. • Supporting data, evidences and documentation • Project start date and Crediting Period • Baseline & Additionality • Emission reduction calculations • Legal compliances • Resolution of CAR(s) and CL(s)
Gamesa Wind Turbines Pvt. Ltd.	• Project technology, operation and maintenance. • Monitoring System and metering system to be adopted at site • Apportioning procedures for electricity generation from project & non-project WTGs

2.4 Site Inspections

As part of the validation of the project under VCS, the validation team of Bureau Veritas conducted a site visit to confirm the selected information and to resolve issues identified in the document review. The validation team has reviewed the following documents to confirm the implementation and operation status and provided in the registered PDD and revised PD:

- a) Monthly Share certificate issued by MSEDCL
- b) Meter test records of the energy meters
- c) Emission reduction spreadsheet.
- d) Invoices raised by CLP Wind Farms (India) Pvt. Ltd. on MSEDCL
- e) Commissioning certificate for all the WTGs.
- f) Power Purchase Agreements signed between MSEDCL and CLP Wind Farms (India) P Ltd.

2.5 Resolution of Findings

The objective of this phase of the validation is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification conclusion on the project design. The validation assessment resulted in a total of **03 CARs** and **05 CLs**. The specific issue pertaining to each finding is included in the Table 3 "Resolution of Corrective Action and Clarification Requests". Each issue raised was responded to satisfactorily by the PP. The validation team reviewed responses received from the PP and the additional documents sent in support of the same and closed each of the findings before proceeding with the final report.

2.6 Forward Action Requests

3 VALIDATION FINDINGS

3.1 Project Details

The proposed project is the installation and operation of Wind Turbine Generators which convert wind energy to electrical energy. It has employed G-97 model turbines made by Gamesa. The total installed capacity of the project is 60 MW. The number of turbines in the project is 30 of 2 MW capacities each. The project is located in Maharashtra state in India. The project is promoted by CLP Wind Farms (India) Private Limited. It is not a large scale project as the number of annual emission reductions is less than 300,000 tCO₂.

At the time of the site visit carried out by Bureau Veritas, the project wind turbines were in operation and generating electricity fed to the grid. In the Project Description, wind mill latitude and longitude co-ordinates were listed for each of the 30 WTGs. Some of the co-ordinate values were in error but were subsequently corrected by the PP in response to CAR 3 raised by the BV team.

3.2 Application of Methodology

3.2.1 Title and Reference

The project has applied approved methodology ACM 0002 v16.0 which is valid at the time of this validation.

3.2.2 Applicability

The applicability of methodology ACM 0002 v16.0 is demonstrated. This is explained in more detail below. The relevant methodology criteria are shown in brackets.

The project is the construction and operation of a green-field power plant [satisfies #2.1 of methodology]

The project is a greenfield renewable (wind) energy power generation plant [satisfies #2.2 (3) & 4 (a) of methodology]

Project does not involve a switch from fossil fuel/s to renewable energy power generation nor is biomass based. [satisfies #9 of methodology]

Methodological tool “Tool to calculate the emission factor for an electricity system” EB 75 Annex 15] is applicable to the project as the project electricity system (the NEWNE grid) is located within India and therefore, neither partially nor totally in any Annex 1 country. [in line with #11 of ACM 0002]

The methodology is hence applicable to the project, along with its referred tools.

3.2.3 Project Boundary

The project boundary includes Wind power generation turbines, monitoring station, sub-station and associated equipment. Output from the wind turbines is pooled at the MSETCL (Maharashtra State Electricity Transmission Company Limited) Jath sub-station. The voltage is stepped up from 33 kV to 132 kV before the grid interconnection point. The proposed project is located in NEWNE grids of the Indian Electricity system, which is the spatial boundary for the project.

The arrangements at the sub-station were confirmed to be in place during the site visit. The main emission source in the baseline comes from the operation of grid connected power plants that predominantly use coal or other fossil fuels for power generation and consequently give rise to CO₂ emissions.

The wind mills in the project are expected to have a technical lifetime of 20 years. The project temporal boundary can hence be considered to be 20 years.

The validation team has confirmed that the project boundary and the selected emission source are both justified for the project.

3.2.4 Baseline Scenario

The methodology ACM 0002 v16.0, applicable to this project has itself prescribed the baseline scenario for green-field projects in clause 5.2.1 paragraph 23, which is

“If the project activity is the installation of a Greenfield power plant, the baseline scenario is 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, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system”.

The project is based in India and prevailing laws do not restrict or prohibit the continuation of grid connected fossil fuel power plants or the construction of new such plants. The baseline scenario is uninhibited by national / sectoral policies or circumstances in the host country.

Value of the combined margin emission factor ($EF_{CMgrid,y}$) is drawn from as a weighted average of the operating margin ($EF_{OMgrid,y}$) and build margin ($EF_{BMgrid,y}$) emission factors. The latter are sourced from version 10 of the CEA database. This is an authentic source of data for emission factor values, computation of which is based on the EB 75 Annex 15 Methodological Tool to calculate the emission factor for an electricity system.

The baseline scenario reasonably represents what would have happened in the absence of the project and is justified in the opinion of the validation team.

3.2.5 *Additionality*

Project proponent has used the “Tool for the demonstration and assessment of additionality” (v7.0.0) (EB 70 Annex 8) to demonstrate how the project is not a business as usual scenario.

The project is a purely voluntary initiative of CLP Wind Farms (India) Pvt. Ltd. It is a business decision of the PP. The project is not in any way mandated by any law, statute or other regulatory framework. Neither is it the outcome of any systematically enforced law, statute or regulatory framework or policy that was implemented

- a) Since 11th November 2001 to provide a comparative advantage to less emission intensive technologies or activities (E minus policies) or,
- b) Since 11th December 1997 to provide a comparative advantage to more emission intensive technologies or activities

There are no criteria to be met by the project in the form of regulatory surplus.

The additionality of the project is demonstrated by the PP in the VCS PD through an investment analysis. A number of inputs have been used in the investment analysis (/3/). They were validated by Bureau Veritas. The validation conclusions are summarised below.

The input values to the financial analysis relate to the PP's investment decision date and are therefore, valid input values. This date is **10th May 2013**, on which the decision to invest in the wind power plant was taken. The validation team confirmed this date from the extract of the resolution of the Board of Directors of CLP Wind Farms (India) Pvt. Ltd (/6/).

During the validation, Bureau Veritas raised CAR 4 and CL 6 to address some inadequacies in the input parameters for the investment analysis. The two findings were closed after satisfactory responses were received from the PP.

1. **Project Cost** : INR 4230 million is based on Gamesa offer letter dated 27/12/2012 (/12/). This includes cost of design, manufacture, testing, sourcing and supply of WTGs, as well as erection & commissioning and development and other costs related to obtaining necessary Government approvals, permits and clearances (/7/, /8/, /9/, /10/). The project cost from actual Purchase Orders placed by CLP on Gamesa was observed to be INR 4119 million only. This is (-) 2.6% lower than the estimation in the financial analysis. The difference is not significant enough to affect the outcome as the financial model is resistant to a (-) 10% variation in the project cost.
2. **Debt: equity ratio**: 70:30 is assumed on the basis of prevailing MERC tariff order dated 22nd March 2013, valid and applicable at the time of the investment decision. Subsequent letter of intent for loan disbursement from the financing institution IDFC also indicates the same ratio.
3. **Loan terms** (Rate of interest-12.87%, Number of instalments-40, moratorium- Nil): based on MERC tariff order dated 22nd March 2013 and supported by the lending institution's Letter of intent for loan, dated 12/02/2015. The actual rate of interest proposed by IDFC in their Letter of intent dated 12/02/2015 (/13/) was seen to be 11%. The financial analysis is not materially affected even if this lower value of the interest rate is used.
4. **Plant Load Factor (PLF)** : 23.05% is the estimated PLF for the financial analysis. The value is drawn from a wind potential assessment study conducted by an independent third party contracted by the PP and thus fulfils EB 48 Annex 11 requirements. Actual generation records of the project were reviewed at the plant site, from which the generation over a one year duration (1st Aug 2014 to 31st July 2015) was observed to be 23.49%. The actual generation is just 2% higher than the PLF assumed in the analysis. This range of variation is covered under the model's sensitivity analysis which returns the same result for a +/-10% spread over the base case (23.05%).
5. **Project lifetime** : 20 years, which is a normal lifetime for guaranteed by manufacturers of wind mills.
6. **Operations & Maintenance (O&M)**: Estimations in terms of absolute O&M costs of Rs.74.16 million (i.e @Rs.2.2 million per WTG) with a 6% y-o-y escalation are estimations as per the wind turbine manufacturer's initial offer of 27th Dec 2012. The offer was received as an e-mail quote from M/s. Gamesa. The O&M cost was cross-checked with actual costs payable during operation year to year, from the O&M agreement between Gamesa Wind Turbines Pvt. Ltd. and CLP Wind Farms (India) Pvt. Ltd. This was found to be Rs.2.44 million per WTG, which is slightly higher than estimated.
7. **Tariff** : Tariff (Rs.5.81 per kWh) for the analysis is based on MERC tariff order dated 22nd March 2013, available as a public source of information on MERC's web site http://www.mercindia.org.in/pdf/Order%2058%2042/Order_6_of_2013_22_March_2013.pdf. Subsequent invoices raised by CLP Wind Farms (I) P Ltd. have also applied the same tariff. MERC has decreed the same tariff for 13 years from its order. What value the tariff will take thereafter was not known to the Project proponent at the time of the investment decision in 2013. However, the same tariff value is considered throughout the project lifetime. The validation team believes this to be a conservative approach. It could be expected that over the years the investment in the project would be recovered, thus lowering the fixed costs. Regulated tariffs are dependent on costs of operation and hence they would only reduce over the years.

8. **Tax related assumptions** such as rate of income tax (30%), MAT (18.5%), Service Tax (12%), Surcharge (5%), Education cess (3%), Depreciation (5% SLM depreciation & 7.69% W.D.V tax depreciation) and Salvage value (10%) are based on then prevailing taxation and depreciation rates at the time of the investment decision. The rates were validated by the financial expert in the validation team.
9. **Insurance:** Rs.6.35 million is the absolute cost of insurance considered in the analysis and is derived from the Tariff Advisory Committee rate schedule.
10. **Other assumptions:** The project will not be claiming any generation based incentive (GBI). There is a scheme in the host country that provides a financial incentive to wind mill owners and is based on the quantity of power generated. At the time of investment decision, it was unclear whether this scheme would be applicable. The Government of India Ministry of New & Renewable Energy circular for extension of the GBI scheme for wind power projects for the 12th plan period appeared only on 04/09/2013, nearly 4 months post-investment decision. The validation team was informed that the PP has opted not to claim GBI. However, the team noted that even if GBI benefits were to be factored into the computations, the conclusion of the analysis would still be the same.

The validation team believes the input values used for the investment analysis to be based on reasonable assumptions and data sources.

The financial analysis computes equity IRR of **11.73%** in the base case. The financial analysis was subjected to a sensitivity analysis to test if the model would remain robust for +/- 10% variations in selected input values that have a significant bearing on the model's outcome. It is seen that for this range of variation, the conclusions of the analysis are not materially impacted.

The benchmark for the investment analysis is a default value that is specified in Appendix to the Guidelines on Investment Analysis of EB 62 Annex 5. The country specific Return on Equity (RoE) value for India is 11.75%. The corresponding real term value, obtained by adding the 10 year forecast rate of inflation for the host country (6.00%), as provided by the Reserve Bank of India, comes to **18.46%**¹ and is therefore an appropriate benchmark to consider evaluating the IRR value from the investment analysis.

Results of the investment analysis indicate that the equity IRR value does not cross the benchmark rate of 18.46% even under reasonable variations in the input parameters significantly impacting the analysis. Investment in the project is therefore not economically attractive to an investor expecting a minimum benchmark rate of return.

¹ The nominal benchmark is computed: $(1 + \text{Real Benchmark\%}) * (1 + \text{Rate of Inflation\%}) - 1$.

This is then $(1+11.75\%)*(1+6.0\%) - 1 = 18.46\%$

Common practice analysis (CPA)

For a demonstration of the additionality of the project, it is also required to be shown that similar projects are not common practice in the defined geographic region in which the project is located. EB 84 Annex 07 guidance of the UNFCCC is a set of guidelines on Common Practice Analysis (Methodological Tool: Common Practice v3.1). The CPA is demonstrated in the VCS PD in accordance with these guidelines. In the initial version of the Project Description, the actual names of the projects in the geographical region had not been mentioned. The validation team raised CAR 2 and in response, the PP submitted a detailed list of projects that were considered for the CPA, in the form of an excel sheet from which it was possible for the team to confirm the number of projects N_{all} and N_{diff} .

For the purpose of the CPA,

- Geographic region is considered as the entire host country (India). The guidelines also have specified that the host country as a whole should be considered as a default for CPA.
- The technology measure is a switch from fossil fuel based power generation (that would have continued in the absence of the project) to renewable energy (wind energy) generation. This meets paragraph #2 of the CPA guidelines.
- All power plants are considered for the CPA as they have outputs in common with the project, viz., the generated electricity from those plants. This is as per paragraph #3 of CPA Guidelines
- To distinguish between the project and other 'similar' power generation plants, the criteria used are as per paragraph #4 of EB 84 Annex 07.
- The CPA is discussed in the VCS PD as per the step-wise procedure specified in the Guidelines.
- Step 1 calculates the output range as +50%/-50% of the project capacity, i.e. 30 MW to 90 MW
- Step 2 : the number N_{all} (all plants that fall in the defined output range 30 MW to 90 MW and have started commercial operation before the project start date) is 46. Data for arriving at this number is sourced from the Indian Wind Power Directory published by CECL, Bhopal. This is a comprehensive directory of wind power installations in India, published by a reputable source.
- Step 3 identifies all those plants that apply technology different from the project. The number of such projects N_{diff} is 39 and is determined by excluding such plants from the "list of all plants identified N_{all} ".
- The diffusion of plants with technology similar to the project and delivering output within the defined range 30 MW to 90 MW is determined from the diffusion factor ($F = 1 - N_{diff}/N_{all}$)
- The diffusion factor is $1 - 39/46 = 0.152$, which is less than 0.2. As per the guidelines on CPA, the project is considered "common practice" only if $F > 0.2$. It is hence shown that the project is not common practice in the chosen geographical region.

The validation team has accepted that the 60 MW wind power project of CLP Wind Farms (India) P Ltd. is additional because

- 1) *The PP has objectively demonstrated and the team has validated that investment in the project does not meet a minimum benchmark rate of return for the IRR and*

- 2) The PP has also shown through an objective analysis that the project is not common practice in the host country.

3.2.6 Quantification of GHG Emission Reductions and Removals

ACM 0002 methodology applied to this project has specified the quantification methodology for emission reductions. The emission reductions are based on amount of electricity generated by the project and the grid emission factor sourced from reliable sources.

Electricity generation by the project is the equivalent generation that would have occurred in the baseline scenario, but from grid connected fossil fuel generation plants. The estimated generation is dependent on expected value of the PLF for the project, taken as 23.05%. Since the capacity of the project is 60 MW, the estimated annual generation would be

$$60 \text{ MW} \times 1000 \text{ (conversion factor)} \times 23.05\% \text{ (PLF)} \times 8760 \text{ (total hours per year of operation)} = 121150800 \text{ kWh}$$

The grid emission factor is a weighted average (Combined margin $EF_{\text{grid,CM,y}}$) computed for the Operating (OM) and Build (BM) margin emission factors ($EF_{\text{grid,OM,y}}$ and $EF_{\text{grid,BM,y}}$ respectively), whose values have been sourced from the Government of India Ministry of Power Central Electricity Authority database. This data base provides updated values of power generation and emissions from various grid connected power plants in India and is considered to be an authentic data source for values of power generation and emission factors. The OM and BM values in this database have been computed using the methodological "Tool to calculate the emission factor for an electricity system" (EB 75 Annex 15) version 4. Version 10 of the CEA database was used to source the emission factors. This is the latest updated version published by CEA.

The grid emission factor $EF_{\text{grid,CM,y}}$ is **0.9770 tCO₂ per MWh** of generation. The EB 75 emission factor calculation tool provides an option to the PP to use 'ex-ante' or 'ex-post' values. For this project, the PP has opted to use the 'ex-ante' option which means that the grid emission factor will stay constant throughout the term of the crediting period.

The methodology does call for calculation of project emissions from fossil fuel sources. (paragraph 37 of ACM 0002 v16.0). During the site visit it was observed that the only fossil fuel consumption in the project would be from back up diesel generators that would be put in operation only during emergencies. As such the consumption of diesel in these back up power generation sources is expected to be very small. However, as the methodology does not require the calculation of project emissions from backup generators, the same is not included.

No leakage emissions are required to be computed as per paragraph 61 of ACM 0002.

The net emission reductions expected from the operation of the project are **118,364 tCO_{2e}** per year.

The validation team confirms that all relevant assumptions and data are listed in the project description, including their references and sources. All data and parameter values used in the project description are considered reasonable in the context of the project.

All estimates of the baseline emissions can be replicated using the data and parameter values provided in the project description. The methodology and referenced tools have been applied correctly to calculate baseline emissions, project emissions, leakage and net GHG emission reductions and removals.

3.2.7 Methodology Deviations

The project has not applied any deviations from the approved methodology.

3.2.8 Monitoring Plan

Monitoring plan of the project essentially involves taking energy readings from sub-station main and check meters. Main meter readings are used to reach energy generation values that are billed to the purchaser, viz., MSEDCL. These readings are taken by MSEDCL authorities each month in the presence of Gamesa personnel acting on behalf of the PP. These readings are recorded on Joint Meter Reading Reports (JMRs) prepared for each month and signed jointly by MSEDCL (/14/) and Gamesa officials. Check meter readings are also taken to support main meter readings and are used in the event of main meter failure or malfunction.

Main and check meters measure energy generation not only from project wind mills but also from non-project WTGs that belong to wind mill owners other than CLP Wind Farms (I) P Ltd. MSEDCL follows an apportioning procedure to allocate the share of energy generation to various wind mill owners. Since the project is also in operation, the validation team reviewed a few sample records to confirm that this procedure was being followed. The share of electricity generation accruing to the PP is reflected in the "Monthly Credit Note" issued by MSEDCL. The net "kWh delivered" value that appears in the Monthly credit note is also charged in the PP's monthly invoice to MSEDCL (/15/) who makes payment for the same.

The only parameter in the project monitoring plan is $EG_{PJ,y}$ which is the quantity of net (i.e. electricity export by the project less electricity imported by it from the grid) electricity supplied by the project plant to the grid during the monitoring period. This is based on energy meter readings taken on the main meters at the sub-station and further apportioned to individual owners by MSEDCL as described above.

The energy meters are the basic source of measurement data. The meters undergo annual *in situ* testing as stipulated in the terms and conditions of the Energy Purchase Agreement between MSEDCL and CLP Wind Farms (India) Pvt. Ltd.

The monitoring arrangements were already in place as observed by Bureau Veritas during its site visit to the Jath project site and MSEDCL sub-station. Energy main and check meters were positioned on a total of 8 feeders. The meters are housed in sealed enclosures and are free from tampering or interference. Each feeder carries the electricity output from WTGs belonging to wind mill owners whose output is pooled at the sub-station. The incomers from the WTGs are at a voltage level of 33 kV which is stepped up by transformers at the sub-station to 132 kV before injection into the grid.

The validation team confirms that the project's monitoring plan is in adherence to the requirements of the applied methodology ACM 0002 and its referenced tools.

3.3 Non-Permanence Risk Analysis

The risk due to non-permanence is not relevant to the subject project. The lifetime of the project is limited to 20 years only and emission reductions will result and be claimed only upto the end of 20 years. As the investment in the project takes place in the initial year, there is minimal chance of the project facing early closure. Also, tariff for electricity generated by the project is defined by the MERC's tariff order. The Energy Purchase Agreement is also signed and hence, there is nothing to indicate that the project will not continue and operate for its full term of 20 years. Moreover, the project is not an AFOLU project but a wind power project.

3.4 Environmental Impact

Host country law does not mandate the project to conduct any Environment Impact Assessment (EIA). Wind power projects are excluded from the positive list of projects specified in the Gazette Notification of the Ministry of Environment & Forests dated 14th Sep 2006.

3.5 Comments by Stakeholders

The PP conducted a consultation meeting with the local stakeholders at the Jath site on 8th Jan 2014. Stakeholders comprised of villagers from nearby villages, employees of CLP Wind Farms (India) Pvt. Ltd. and those of Gamesa and contractors working at the site. The stakeholders were invited by letters sent and through public notice. Evidence of the consultation meeting (signed attendance of the stakeholders and photographs) was presented to Bureau Veritas and verified by the team (/5/).

4 VALIDATION CONCLUSION

Bureau Veritas Certification has performed a validation of the project activity “**Wind Power Project of CLP Wind Farms (India) Private Limited at Jath**” by *CLP Wind Farms (India) Pvt. Ltd.* The validation was performed on the basis of VCS Standard v3.5 and other related documents and consisted of the following three phases: i) a desk review of the project design, 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 systematic analysis of the project activity, it is seen that the project is likely to result in reductions of GHG emissions. An analysis of the investment barrier 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.

The review of the project design documentation and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfilment of stated criteria. The VCS-PD was subsequently revised on 29/08/2015 to resolve the issues that arose during the interviews and subsequent interactions.

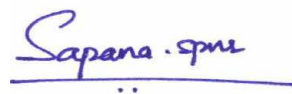
In our opinion, the project correctly applies and meets the relevant VCS Standard v3.5 requirements.

The validation is based on the information made available to us and the engagement conditions detailed in this report.



Team Leader

04th September 2015
Mumbai



Internal Technical Reviewer

04th September 2015
Mumbai

APPENDIX I

TABLE 1 VALIDATION REQUIREMENTS BASED ON THE VERIFIED CARBON STANDARD V3.5

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
VCS Program specific issues					
Have the project(s) created another form of environmental credit (for example renewable energy certificates)?	VCS	3.11.2	No other form of environmental credit will be generated for emission reductions under the VCS program (Section 1.12.3)	✓	✓
If yes, have the project participants provided a letter from the program operator that the credit has not been used and has been cancelled from the relevant program?	VCS	3.11.2	Confirmed by CLP in section 1.12.3	✓	✓
Are the VCS PD, monitoring reports, and other documents required under the VCS Program in English?	VCS	2.2.1	Yes	✓	✓
Project level requirements					
General requirements					
Have the project proponent applied an approved VCS Program methodology or a methodology from an approved GHG Program based on the list of current VCS Program approved GHG Programs and methodologies as set out on www.v-c-s.org ?	VCS	3.1.3	ACM 0002 v16 applied. It is an approved CDM Large scale methodology	✓	✓
Is the Project Start Date before 1 January 2002? (If yes, a CAR shall be raised as the Project Start Date for non-AFOLU projects for the VCS 2007.1 shall not be before	VCS	3.7	No	✓	✓

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
1 January 2002)					
Will this validation be completed within two years of the Project Start Date? If not, was this validation contracted before 19 November 2008? (If yes validation shall be completed by 19 November 2009 and proof of contracting prior to 19 November 2008 shall be provided)	VCS	3.7.2	Yes	✓	✓
Is the earliest Project Crediting Period Start Date under the VCS 2007.1 28 March 2006 for non-AFOLU projects and 1 January 2002 for AFOLU projects ?	VCS	3.7	N.A.	✓	✓
Does the project reduce GHG emissions from activities that are included in an emissions trading program; or take place in a jurisdiction or sector in which binding limits are established on GHG emissions?	VCS	3.11.2	Yes	✓	✓
If yes, have the project proponents provided evidence that the reductions or removals generated by the project have or will not be used in the emissions trading program or for the purpose of demonstrating compliance with the binding limits that are in place in that jurisdiction or sector? [Such evidence could include: a letter from the program operator or designated national authority that emissions allowances (or other GHG credits used in the program) equivalent to the reductions or removals generated by the project have been cancelled from the program; or national cap as applicable or; purchase and cancellation of GHG allowances equivalent to the GHG emissions reductions or removals generated by the	VCS	3.11.2	Affirmed by PP in section 1.12	✓	✓

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
project related to the program or national cap]					
Have project proponents claimed GHG credits from one project under more than one GHG Program? (If yes, a CAR shall be raised, as Project proponents shall not claim GHG credits from one project under more than one GHG Program)	VCS	3.11	No, as stated in section 1.12	✓	✓
Was this project rejected by other GHG Programs?	VCS	3.11	No	✓	✓
If yes, have project proponents:	VCS	3.11	N.A.	✓	✓
clearly stated in its VCS PD all GHG Programs for which the project has applied for credits and why the project was rejected? (Such information shall not be deemed commercially sensitive information	VCS	3.11	-		
provided the VCS Program validator and verifier, VCS Program project database and VCS Program Registry with the actual rejection document(s) including any additional explanations?	VCS	3.11	-		
Is this a renewal of the Project Crediting Period?	VCS	3.11	No	✓	✓
If yes have a VCS Program approved validator determined that the original project baseline scenario(s) and additionality is still valid or has been updated taking account of new data and changed VCS Program requirements where applicable?	VCS	3.11	N.A.	✓	✓

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
Standards and factors					
Do standards and factors used to derive GHG emission data as well as any supporting data for additionality and baseline scenario(s) meet the following requirements:	VCS	1.1	Yes	✓	✓
be publicly available from a reputable and recognised source (e.g. IPCC, published Government data etc)?	VCS	1.1	yes	✓	✓
be reviewed as part of its publication by a recognised competent organization?			Yes, as applicable, e.g. CEA database	✓	✓
Project grouping					
Is this a grouped project?	VCS	3.4	No	✓	✓
If yes , was this grouped project described in one VCS PD?	VCS	3.4	No	✓	✓
Does this PD include a description of the central GHG information system and controls associated with the project and its monitoring?	VCS	3.4	N.A. as it is not a grouped project	✓	✓
What is the sampling carried out by the VCS verifier?	VCS	3.4	N.A.	✓	✓
Have the sampling of a grouped project taken account of any sub groups and associated activities within each sub group?	VCS	3.4	N.A.	✓	✓
Do this project, which intends to apply for the VCS Program VCUs as part of a grouped project also comply	VCS	3.4	N.A.	✓	✓

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
with the VCS Program requirements for grouped projects, detailed in the most recent version of the Program Guidelines 2007.1 on www.v-c-s.org ?					
Content of the VCS PD					
Is the PDD used as a basis for validation prepared in accordance with the latest template and guidance from the VCS?	PD Temp		Version 3.2 – it is the latest	✓	✓
Is there a project title?	PD temp	1.1.	Yes	✓	✓
Type/Category of the project	PD temp	1.2	Yes	✓	✓
Is it defined whether the project category is part of a GHG program that has been approved by the VCS Board?	PD temp	1.2	Yes	✓	✓
Is it specified if the project is a Grouped project?	PD temp	1.2	Specified that it is not a grouped project	✓	✓
Is the amount of emission reductions over the crediting period estimated, including project size? (Micro project: Less than 300,000 tonnes CO ₂ equivalent emissions reductions per year; Mega Project: More than 300,000 tonnes CO ₂ equivalent emissions reductions per year)	PD temp	1.7	It is classified as a “Project” since the emission reductions are less than 300,000 tCO ₂ per year (120,162 tCO ₂)	✓	✓
Is a brief description of the project provided?	PD	1.8	Yes	✓	✓

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
	temp				
Is the project location, including geographic and physical information allowing the unique identification and delineation of the specific extent of the project, and including GPS project boundaries, provided?	PD temp	1.9	The Project location table in section 1.9 has many mistakes in the latitude and longitude co-ordinate values.	~~CAR-3~~	✓
Duration of the project activity/crediting period	PD temp	1.6	Yes	✓	✓
Is the project start date, i.e., the date on which the project began reducing or removing GHG emissions*, provided?	PD temp	1.6	It is 26 th March 2014	✓	✓
Is the crediting period start date, i.e., the date the first monitoring period commenced, provided? (VCS project crediting period: A maximum of ten years which may be renewed at most two times)	PD temp	1.6	This is also 26 th March 2014	✓	✓
Are the conditions prior to project initiation provided?	PD temp	1.10	Provided	✓	✓
Is a description of how the project will achieve GHG emission reductions and/or removal enhancements provided?	PD temp	1.8	Yes	✓	✓
Are project technologies, products, services and the expected level of activity described?	PD temp	1.8	Yes. Consists of 2 MW wind turbine generators. Make: Gamesa	✓	✓
Does the VCS PD include identification of relevant local laws and regulations related to the project and	PD	1.11	Section 1.11: Please clarify what are the applicable local laws and regulations related to	GL-1	✓

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
demonstration of compliance with them?	temp		the project at Jath		
Are risks that may substantially affect the project's GHG emission reductions or removal enhancements identified?	PD temp	1.13	There are no such risks envisaged. This was seen from the site visit.	✓	✓
Is confirmation that the project was not implemented to create GHG emissions primarily for the purpose of its subsequent removal or destruction demonstrated?	PD temp	1.12	The PP is a major wind power developer. This is one of their main businesses. The project is set up as a part of its business operations.	✓	✓
Has the project created another form of environmental credit (for example renewable energy certificates)?	PD temp	1.12	No	✓	✓
If yes, has the proponent provided a letter from the program operator that the credit has not been used and has been cancelled from the relevant program?	PD temp	1.12	N.A.	✓	✓
Was the project rejected under other GHG programs (if applicable)	PD temp	1.12	No	✓	✓
If yes, does the project:	PD temp	1.12	N.A.	✓	✓
clearly state in its VCS PD all GHG programs for which the project has applied for credits and why the project was rejected? (Such information shall not be deemed commercially sensitive information)	PD temp	1.12	-	✓	✓
provide the VCS verifier and Registry with the actual rejection document(s) including explanation?	PD temp	1.12	-	✓	✓

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
Are project proponents roles and responsibilities, including contact information of the project proponent, other project participants provided?	PD temp	1.3	Yes	✓	✓
Is any information relevant for the eligibility of the project and quantification of emission reductions or removal enhancements, including legislative, technical, economic, sectoral, social, environmental, geographic, site-specific and temporal information provided?	PD temp	1.11	Yes	✓	✓
Is there any commercially sensitive information that has been excluded from the public version of the VCS PD that will be displayed on the VCS Project Database?	PD temp	1.13	No such information that has been excluded	✓	✓
If yes, was it listed?	PD temp	1.13	N.A.	✓	✓
Are title and reference of the VCS methodology applied to the project activity and explanation of methodology choices provided?	PD temp	2.1	ACM 0002 v16 Grid-connected electricity generation from renewable sources --- Version 16.0, Sectoral Scope: 01, EB 81, Annex 9	✓	✓
Does the project use one of the VCS program approved project methodologies and provide information relevant to methodology deviations or methodology revisions?	PD temp	2.1	Approved methodology of CDM is used	✓	✓
Are the choice of the methodology and its applicability to the project activity justified?	PD temp	2.2	Yes	✓	✓

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
Are GHG sources, sinks and reservoirs identified for the baseline scenario and for the project?	PD temp	2.3	Yes	✓	✓
Is it described how the baseline scenario is identified and the identified baseline scenario?	PD temp	2.4	Yes	✓	✓
Has the project proponent selected the most reasonable baseline scenario for the project?	PD temp	2.4	Yes	✓	✓
Does it reflect what most likely would have occurred in the absence of the project?	PD temp	2.4	Yes. "The operation of grid-connected power plants and by the addition of new generation sources"	✓	✓
Is it described how the emissions of GHG by source in baseline scenario are reduced below those that would have occurred in the absence of the project activity (assessment and demonstration of additionality)?	PD temp	2.5	Yes	✓	✓
Has the project proponent demonstrated, in the VCS PD, in addition to describing how the project meets the VCS methodology, that the project is additional based on one of the tests, the project test, the performance test, and technology test?	PD temp	2.5	Additionality is based on investment analysis	✓	✓
Are title and reference of the VCS methodology (which includes the monitoring requirements) applied to the project activity and explanation of methodology choices provided?	PD temp	2.1	Yes	✓	✓
Is monitoring, including estimation, modelling, measurement or calculation approaches described?	PD temp	4.1	Yes	✓	✓

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
including:					
Purpose of monitoring?	PD temp	4.1	Yes	✓	✓
Types of data and information to be reported, including units of measurement?	PD temp	4.1	Yes	✓	✓
Origin of the data?	PD temp	4.1	Yes	✓	✓
Monitoring, including estimation, modelling, measurement or calculation approaches?	PD temp	4.1	Yes	✓	✓
Monitoring times and periods, considering the needs of intended users?	PD temp	4.1	Yes	✓	✓
Monitoring roles and responsibilities ?	PD temp	4.1	Yes	✓	✓
Managing data quality?	PD temp	4.1	Yes	✓	✓
Are data and parameters monitored/selecting relevant GHG sources, sinks and reservoirs for monitoring or estimating GHG emissions and removals described in the tabular form including:	PD temp	4.2	In standard format	✓	✓
Data unit?	PD	4.2	yes	✓	✓

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
	temp				
Description?	PD temp	4.2	yes	✓	✓
Source of data to be used?	PD temp	4.2	yes	✓	✓
Value of data applied for the purpose of calculating expected emissions reductions?	PD temp	4.2	yes	✓	✓
Description of measurement methods and procedures to be applied?	PD temp	4.2	yes	✓	✓
QA/QC procedures to be applied?	PD temp	4.2	yes	✓	✓
Any comment?	PD temp	4.2	yes	✓	✓
Is the monitoring plan described?	PD temp	4.3	yes	✓	✓
Are methodological choices explained?	PD temp	3.2	yes	✓	✓
Are GHG emissions and/or removals for the baseline scenario quantified?	PD temp	3.4	yes	✓	✓

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
Are GHG emissions and/or removals for the project quantified?	PD temp	3.4	yes	✓	✓
Are GHG emission reductions and removal enhancements for the GHG project quantified?	PD temp	3.4	yes	✓	✓
Was a summary of environmental impact assessment, when such an assessment is required by applicable legislation or regulation, provided? ISO14064-2, 5.2.k	ISO 1406 4-2	5	The proposed Project activity does not fall under the list of activities requiring EIA as the environmental impacts for such project are not considered as significant by the host Party or PP.	✓	✓
Were relevant outcomes from stakeholder consultations and mechanisms for on-going communication provided?	PD temp	6	PP is requested to provide evidence of stakeholder consultation described in the Project description at section 6	CL2	✓
Was chronological plan for the date of initiating project activities, date of terminating the project, frequency of monitoring and reporting and the project period, including relevant project activities in each step of the GHG project cycle provided?			Not applicable for this project as it is a recent project (started on 26-03-2014) and validation will be completed within 2 years of the start date. However, the PP has not provided the project investment decision date and evidence of the same. Inputs to the financial analysis can be regarded valid only if they are relevant to the date of investment decision.	CL3	✓
Was evidence of proof of title provided through one of	PD	1.12			

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
the following:	temp				
a right of use arising or granted under statute, regulation or decree by a competent authority?	PD temp	1.12	WTG commissioning certificates are in the name of the PP. Monthly JMRs are also in the PP's name. Invoices are raised every month by the PP for electricity generated from the 60 MW wind farm at Jath. All these documents can be considered as sufficient evidence of PP's right of use w.r.t. the GHG emission reductions. Furthermore, it was confirmed during the site visit that PP's access to the wind farm site is unencumbered.	✓	✓
a right of use arising under law?	PD temp	1.12	N.A.	✓	✓
a right of use arising by virtue of a property or contractual right in the plant, equipment or process that generates GHG emission reductions and/or removals (where the right includes the right of use of such reductions or removals and the project proponent has not been divested of such right of use)?	PD temp	1.12	BVCH requests the PP to provide documentary evidence of wind farm assets ownership	GL-4	✓
a right of use arising by virtue of a property or contractual right in the land, vegetation or conservational or management process that generates GHG emission reductions and/or removals (where such right includes the right of use of such reductions or removals and the project proponent has not been divested of such right of	PD temp	1.12	BVCH requests the PP to provide documentary evidence of ownership/leasehold of the land on which its windmill assets have been installed and commissioned	GL-5	✓

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
use)?					
an enforceable and irrevocable agreement with the holder of the property or contractual right in the plant, equipment or process that generates GHG emission reductions and/or removals which vests the right of use in the project proponent?	PD temp	1.12	Please refer to CL 4		
an enforceable and irrevocable agreement with the holder of the property or contractual right in the land, vegetation or conservational or management process that generates GHG emission reductions or removals which vests the right of use in the project proponent?	PD temp	1.12	Please refer to CL 5		
Does the project reduce GHG emissions from activities that participate in an emissions trading program, or take place in a jurisdiction or sector in which binding limits are established on GHG emissions?	PD temp	1.12	Yes	✓	✓
If yes, have project proponents provided evidence that the reductions or removals generated by the project have or will not be used in the Program or jurisdiction for the purpose of demonstrating compliance, such as:	PD temp	1.12	The project is not registered under any other GHG emission program, hence no further evidence is deemed necessary	✓	✓
a letter from the Program operator or designated national authority that emissions allowances (or other GHG credits used in the Program) equivalent to the reductions/removals generated by the project have been cancelled from the Program; or national cap as applicable?	PD temp	1.12	N.A.	✓	✓

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
purchase and cancellation of GHG allowances equivalent to the reductions/removals generated by the project related to the Program or national cap?	PD temp	1.12	N.A.	✓	✓
Additionality					
Has the project proponent demonstrated that the project is additional using one of the following tests: Test 1 - The project test; Test 2 – Performance test; Test 3 – Technology test?	VCS	3.14	Additionality is demonstrated by means of the CDM “Tool for the demonstration and assessment of additionality” v7	✓	✓
If the project proponent used Test 1:	VCS	3.14			
Step 1 – Regulatory Surplus - Is the project mandated by any systematically enforced law, statute or other regulatory framework? Laws, statutes, regulatory frameworks or policies implemented since 11 November 2001 that give comparative advantage to less emissions-intensive technologies or activities relative to more emissions-intensive technologies or activities need not be taken into account. Laws, statutes, regulatory frameworks or policies implemented since 11 December 1997 that give comparative advantage to more emissions-intensive technologies or activities relative to less emissions-intensive technologies or activities shall not be taken into account. (If yes a CAR shall be issued and the project shall be deemed non additional).	VCS	3.14	There is no legal/regulatory binding to set up the project	✓	✓
Step 2 – Implementation Barriers – Does the project face one (or more) distinct barrier(s) compared with	VCS	3.14	Yes	✓	✓

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
barriers faced by alternative projects?					
Investment Barrier – Does the project face capital or investment return constraints that can be overcome by the additional revenues associated with the generation of VCUs?	VCS	3.14	Yes. Investment in the project does not yield sufficient return on investment. Equity IRR : 13.32% Benchmark: 18.46% The assumptions used in investment analysis (Project cost/O&M cost/PLF/Bank loan terms are not included in the Project Description (VCS-PD) document. A few corrections also are required in the investment analysis workings. (Listed in CAR 4 in Table 3 below) The PP also needs to clarify on queries raised in CL 6 in Table 3 below	CAR 1 CAR 4 CL 6	✓
Technological Barriers – Does the project face technology-related barriers to its implementation?	VCS	3.14	No	✓	✓
Institutional barriers – Does the project face financial, organizational, cultural or social barriers that the VCU revenue stream can help overcome?	VCS	3.14	No	✓	✓

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
Step 3 – Common Practice	VCS	3.14		✓	✓
Is project type common practice in sector/region, compared with projects that have received no carbon finance?	VCS	3.14		✓	✓
if it is common practice, have the project proponents identified barriers faced compared with existing projects?	VCS	3.14		✓	✓
Is the demonstration that the project is not common practice based on guidance in the GHG Protocol for Project Accounting, Chapter 7?	VCS	3.14		✓	✓
Was data on all baseline candidates within the geographic area collected?	VCS	3.14		✓	✓
Was a relative percentage for each different technology or practice calculated? (Common practice refers to the predominant technologies or practices in a given market, as determined by the degree to which those technologies or practices have penetrated the market (defined by a specified geographic area). This percentage could be based on the number of plants or sites using each technology or practice, or could be weighted by the proportion of the total output for the market that is attributed to each technology or practice.)	VCS	3.14	The Common practice analysis has not provided names/titles of the projects considered. Which projects are in the N_{wind} , N_{all} , N_{diff} , etc. is not understood. Only numbers are provided.	~~CAR-2~~	✓
If the project proponent used Test 2:	VCS	3.14			

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
Step 1 – Regulatory Surplus - Is the project mandated by any systematically enforced law, statute or other regulatory framework? Laws, statutes, regulatory frameworks or policies implemented since 11 November 2001 that give comparative advantage to less emissions-intensive technologies or activities relative to more emissions-intensive technologies or activities need not be taken into account. Laws, statutes, regulatory frameworks or policies implemented since 11 December 1997 that give comparative advantage to more emissions-intensive technologies or activities relative to less emissions-intensive technologies or activities shall not be taken into account. (If yes a CAR shall be issued and the project shall be deemed non additional).	VCS	3.14	There is no mandate prescribed by law , statute or regulation.	✓	✓
Step 2: Performance Standard	VCS	3.14			
Are the emissions generated per unit output by the project below the level that has been approved by the VCS Program for the product, service, sector or industry, as the level defined to ensure that the project is not business-as-usual?	VCS	3.14	N.A.	✓	✓
Are performance standard based additionality tests approved through the double approval process and by the VCS Board? (The list of approved performance standards is on www.v-c-s.org)	VCS	3.14	N.A.	✓	✓
If the project proponent used Test 3:	VCS	3.14		✓	✓

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
Step 1 – Regulatory Surplus - Is the project mandated by any systematically enforced law, statute or other regulatory framework? Laws, statutes, regulatory frameworks or policies implemented since 11 November 2001 that give comparative advantage to less emissions-intensive technologies or activities relative to more emissions-intensive technologies or activities need not be taken into account. Laws, statutes, regulatory frameworks or policies implemented since 11 December 1997 that give comparative advantage to more emissions-intensive technologies or activities relative to less emissions-intensive technologies or activities shall not be taken into account. (If yes a CAR shall be issued and the project shall be deemed non additional).	VCS	3.14	No such legal /regulatory requirement exists.	✓	✓
Step 2: Technology Additionality – Are the project and its location contained in the list of project types and applicable areas approved as being additional by the VCS Program? (The approved list is available on www.v-c-s.org)	VCS	3.14	The project does not fall into this list of projects deemed auto-additional.	✓	✓
Identifying GHG sources, sinks and reservoirs relevant to the project					
Refer to Clause 6, under Methodologies.	VCS	3.12		-	-
Determining the baseline scenario					
Has the project proponent selected the most conservative baseline scenario for the project, based on	VCS	3.13	Yes	✓	✓

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
the requirements in the applicable VCS methodology?					
Does the baseline scenario set out the geographic scope as applicable to the project?	VCS	3.13	Yes, the spatial boundary is defined for the baseline scenario and it is the NEWNE grid of India	✓	✓
Has the project proponent selected or established criteria and procedures for identifying and assessing potential baseline scenarios considering the following:	ISO 1406 4-2	3.13	N.A. as the baseline scenario is prescribed by the methodology itself	✓	✓
The project description, including identified GHG sources, sinks and reservoirs;	ISO 1406 4.2	3.13	-	✓	✓
Existing and alternative project types, activities and technologies providing equivalent type and level of activity of products or services to the project;	ISO 1406 4-2	3.13	-	✓	✓
Data availability, reliability and limitations;	ISO 1406 4-2	3.13	-	✓	✓
Other relevant information concerning present or future conditions, such as legislative, technical, economic, sociocultural, environmental, geographic, site-specific and temporal assumptions or projections.	ISO 1406 4-2	3.13	-	✓	✓
Has the project proponent demonstrated equivalence in type and level of activity of products or services provided	ISO	3.13	Project output and baseline output are same,	✓	✓

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
between the project and the baseline scenario and has explained, as appropriate, any significant differences between the project and the baseline scenario ?	1406 4.2		viz., "electricity".		
Has the project proponent selected or established, explained and applied criteria and procedures for identifying and justifying the baseline scenario?	ISO 1406 4.2	3.13	Baseline specified by methodology, no justification is required.	✓	✓
In developing the baseline scenario, has the project proponent selected the assumptions, values and procedures that help ensure that GHG emissions reductions or removal enhancements are not over-estimated?	ISO 1406 4.2	3.13	N.A. as the emission reductions are directly related to electricity generation by the project.	✓	✓
Has the project proponent selected or established, justified and applied criteria and procedures for demonstrating that the project results in GHG emissions reductions or removal enhancements that are additional to what would occur in the baseline scenario?	ISO 1406 4.2	3.13	Yes	✓	✓
Has the project participant demonstrated that the project has met all relevant regulations, legislation and project approvals (e.g. environmental permits)?	VCS	1.11	Yes and this is also confirmed from the letter/undertaking issued by Gamesa to CLP dated 17 th July 2014.	✓	✓
Monitoring the GHG project					
Has the project proponent shall established and maintained criteria and procedures for obtaining, recording, compiling and analysing data and information important for quantifying and reporting GHG emissions	VCS	3.16	Yes	✓	✓

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
and/or removals relevant for the project and baseline scenario (i.e. GHG information system)?					
Do the monitoring procedures include?	VCS	3.16	Included	✓	✓
purpose of monitoring?	VCS	3.16	Yes	✓	✓
types of data and information to be reported, including units of measurement?	VCS	3.16	Yes	✓	✓
origin of the data?	VCS	3.16	Yes	✓	✓
monitoring methodologies, including estimation, modelling, measurement or calculation approaches?	VCS	3.16	Yes	✓	✓
monitoring times and periods, considering the needs of intended users?	VCS	3.16	Yes	✓	✓
monitoring roles and responsibilities?	VCS	3.16	Yes	✓	✓
GHG information management systems, including the location and retention of stored data?	VCS	3.16	Yes	✓	✓
Where measurement and monitoring equipment is used, does the project proponent ensure the equipment is calibrated according to current good practice?	VCS	3.16	Yes	✓	✓
Does the project proponent apply GHG monitoring criteria and procedures on a regular basis during project implementation?	VCS	3.16	Yes	✓	✓

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
Monitoring reports for the GHG project					
Do monitoring reports include all the monitoring data, calculations, estimations, conversion factors and others standard factors as defined in the monitoring clause of the applied VCS Program methodology and set out in the VCS PD? (A list of VCS approved methodologies is available on www.v-c-s.org)			N.A. as it is a validation.	✓	✓
Records relating to the project					
Has the project proponent kept all documents and records in a secure and retrievable manner for at least two years after the end of the project crediting period.?	VCS	3.17	The records were satisfactorily maintained at the site	✓	✓
Information to validator and verifier					
Has the project proponent made available to the validator the VCS PD, proof of title and any requested supporting information and data needed to evidence statements and data in the VCS PD and proof of title?	VCS	3.17	Yes. Please see CL 4 & 5 also		
Has the project proponent made the VCS PD and validation report available to the verifiers as well as a monitoring report applicable to the period of monitoring and any requested supporting information and data needed to evidence statements and data in the monitoring report?	VCS	3.17	VCS PD was made available to validation team	✓	✓

TABLE 3 RESOLUTION OF CORRECTIVE ACTION AND CLARIFICATION REQUESTS

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
CL 1 Section 1.11: Please clarify what are the applicable local laws and regulations related to the project at Jath	PD Temp 1.11	/MD/17Aug15/ The Project has received necessary approvals for development and commissioning for each Wind Project from the MEDA (State Nodal agency). Further, the project has received commissioning certificates and executed the PPA with the relevant government authority (Maharashtra State electricity Distribution Co. Ltd). All these documents can be executed only once the project has received the requisite clearances/approvals upon adherence to relevant laws and regulations. Copy of the same has been submitted as Annex 1 to the submission. Further The Indian Electricity Act, 2003², does not restrict the choice of fuel for power generation. PD Section 1.11 has been amended accordingly.	MEDA approvals for the wind turbines are in place. The approvals are in the form of “Infrastructure clearances provided to M/s. Gamesa Wind Turbines Pvt. Ltd., the wind park developer. MEDA has also provided “Clearances for commissioning” to the PP. This clearance is evident in the “Transfer of capacity” letter issued by Gamesa to CLP Wind farms India Pvt. Ltd. As per the Infrastructure clearances provided to Gamesa, the latter are responsible for ensuring statutory and non-statutory clearances from the concerned Government departments and local authorities. They are also responsible for abiding by the policy pronouncements and orders of the Government of Maharashtra (State Govt.) and MERC made from time to time. The validation team is satisfied that applicable local laws and regulations are defined along with compliance to the same. CL 1 is therefore closed

² http://www.cea.nic.in/reports/electricity_act2003.pdf

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
CL 2 PP is requested to provide evidence of stakeholder consultation described in the Project description at section 6	PD Temp.6	/MD/17Aug15/ Stakeholder Consultation documents is submitted as Annex 2 to the submission.	The PP conducted a stakeholder consultation meeting on 8th January 2014, which is prior to the date of commissioning of the wind turbines. The meeting was conducted at the Project Storage Yard, Village Kumbhari, Dist. Sangli. This was verified by the Bureau Veritas team through review of attendance record in which names of stakeholders who attended appear along with their respective signatures. The team confirms that the stakeholders who attended are the same as those mentioned in Section 6 of the VCS PD. Photographic evidence of the meeting conducted was also submitted by the PP. CL 2 is closed
CL 3 The PP has not provided the project investment decision date and evidence of the same. Inputs to the financial analysis can be regarded valid only if they are relevant to the date of investment decision.	-	/MD/17Aug15/ Board Resolution has been submitted as Annex 5 to the submission.	The date of investment decision is <u>10th May 2013</u>. This was confirmed from the Certified Extract of the Resolution of the Board of Directors of CLP Windfarms (India) Pvt. Ltd. Decision to invest in the wind project in Jath is evident from the Board resolution extract. CL 3 is closed

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
CL 4 BVCH requests the PP to provide documentary evidence of wind farm assets ownership	PD Temp 1.12	/MD/17Aug15/ The Ownership is demonstrated through the following documents. Commissioning certificates for WTGs in the name of PP. Power Purchase Agreement with respective State Electricity Board for sale of electricity by the PP Refer Annex 3 to the submission	MSEDCL has issued Commissioning Certificates for all 30 WTGs in the project. It has also signed Energy Purchase Agreement with CLP for the purchase of power generated from all its windmills. These documents were submitted by the PP and reviewed by Bureau Veritas validation team. The team believes they are sufficient to establish the PP's ownership of the wind farm assets in the project due to the following reasons: The documents are issued by the appropriate issuing authority of the state Government They are in the name of CLP Wind farms India Pvt. Ltd. CL 4 is closed
CL 5 BVCH requests the PP to provide documentary evidence of ownership/leasehold of the land on which its windmill assets have been installed and commissioned	PD Temp 1.12	/MD/17Aug15/ Land documents are submitted.	The PP submitted land ownership documents (extracts from sale deeds). Land parcel numbers (Gat nos.) in the deed extracts were verified against the corresponding numbers in the VCS PD in the table in section 1.9. Hence, ownership of land on which the PP's windmill assets are installed is established. CL 5 is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
CAR 1 The assumptions used in investment analysis (Project cost/O&M cost/PLF/Bank loan terms are not included in the Project Description (VCS-PD) document.	VCS 3.14	/MD/17Aug15/ PD Version 2, Section 2.5 mentions the same.	A list of assumptions made for the investment analysis is included in the VCS PD version 2 in Annex 1. CAR 1 is closed
CAR 2 The Common practice analysis has not provided names/titles of the projects considered. Which projects are in the N_{wind} , N_{all} , N_{diff} , etc. is not understood. Only numbers are provided.	VCS 3.14	/MD/17Aug15/ Common Practise Analysis_V1 excel sheet is submitted for ready reference.	The PP has furnished a detailed list of projects in every state of India, along with their individual capacities and dates of commissioning. The data is sourced from Indian Wind Power Directory which can be regarded as an authentic source. The argument advanced by PP in the VCS PD for the project not being common practice is based on this data and was checked and confirmed by the validation team. CAR 2 is closed
CAR 3 The Project location table in section 1.9 has many mistakes in the latitude and	PD Temp 1.9	/MD/17Aug15/ PD Version 2, mentions the corrected values.	The necessary corrections are made by PP in the revised VCS PD. CAR 3 is closed

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
longitude co-ordinate values.			
CAR 4 The following corrections are necessary in the financial analysis spreadsheet working: The source of data mentioned is not the name of the 3rd party that has conducted the PLF assessment. MERC order is not directly a primary data source complying with the EB 48 Annex 11 guidance 3rd party PLF assessment is 26% for the Jath wind farm. Assumed PLF is 23.40% on which basis the investment analysis has been done. Section 80IA benefit is shown for 13 years in the P&L stat worksheet. This benefit is allowable only for a 10 year block within the first 15 years as per IT	2-(e)-(ii)- i	Revised Ver2 sheet has been updated Third Party report dated 24 March 13 has been submitted to DOE. Please refer past page which mentions net generation at P90 as 344.5 GWh for complete wind farm of 170.6 MW Thus PLF determined as $PLF (\%) = (344.5 \times 1000) / (8760 \times 170.6) = 23.05 \%$ the same has been used at the revised sheet which is conservative as per Tariff Order³ for Wind Zone 1 as 20%. The same has been corrected. Revised IRR sheet is now updated with data source Attached supporting, although the same can be referred from http://www.fcbm.org/budget/budget2013-	The PP has responded satisfactorily to the issues raised by validation team. PLF source is considered as the third party estimated value (23.40%). Sources of MAT, W.D.V. are also provided. The necessary correction in the tax exemption calculations (Section 80 IA) are also made. The computation of the benchmark rate is also explained as the value arrived at from $(1 + \text{real Benchmark}\%) * (1 + \text{Rate of Inflation}\%) - 1 = (1 + 11.75\%) * (1 + 6.0\%) - 1 = 18.46\%$ and is accepted by the validation team. CAR 4 is closed.

³ http://www.mercindia.org.in/pdf/Order%2058%2042/Order_6_of_2013_22_March_2013.pdf

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
Rules. Source of the W.D.V. rate of depreciation (7.69%) is not provided. Source of MAT rate (18.50%) is not provided. There is an error in benchmark (18.46%). The default rate of return on equity (RoE) is 11.75% and rate of inflation (long term) is 6.0% as per RBI forecast; so the benchmark rate of return should be 17.75%.		14/DirectTaxes.UnionBudget13-14.pdf	
CL 6 Please clarify the following w.r.t the investment analysis calculations: The land cost considered is “Nil”. Is this realistic ? The analysis does not factor in the GBI benefit to the PP. In actual operation of	2-(e)-(ii)- i	The project has been developed on a turnkey basis, and no cost has been paid towards land. During time of decision making, GBI was not applicable. Hence GBI has not been considered in the base case. But consideration of GBI has been done as a Sensitivity, and even in this case the project returns are below benchmark. At the time of decision making loan was	PP has responded to the clarification requests of the validation team. The team confirmed that a separate land cost was not paid by CLP to Gamesa. Instead, they paid Gamesa “Development cost” for which a separate Purchase Order was raised on Gamesa. This cost has already been considered as a part of the project cost. Therefore, taking the land cost as “Nil” is not inappropriate.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
the project, GBI benefits could be claimed. Interest rate on loan considered is 12.87% but IDFC letter of intent to CLP has mentioned a much lower rate (11%). Why is the insurance cost (Rs.6.35 mn.) assumed to be same over the entire project lifetime? The asset value depreciates and so will the insurance cost ?		not availed, and as per Guidelines to determine IRR, it is not required to consider the same. Further, to check conservativeness it has been considered with value available at the time of decision making, in which the project's returns are still below the benchmark. Further if we consider real project loan interest rate as per IDFC letter still IRR remains significantly below the benchmark. The insurance is treated on the basis of re-instated cover, thus the value for insurance coverage is always equal to the actual capital cost. Hence premium is assumed to be the same. Even if we assume a conservative case of insurance value being 0 for the life of the project, the Equity IRR remains below the benchmark	At the time of the investment decision, there was no information available to the PP as to whether the project could avail of GBI benefits. Even if GBI were to be considered, the team has confirmed that it makes no impact on the results of the additionality that can alter the conclusion of the analysis as to whether the project is additional or not. The loan interest rate was taken from document sources (MERC order) available at the time of the decision. Subsequently, the rate was negotiated by CLP with IDFC and the letter of intent for loan was issued by IDFC. Even if the lower rate of interest (11%) is considered, there is no material impact on the results of the analysis. Regarding insurance cost, the PP has clarified that they have considered the cost based on re-instated cover of the wind power assets, Hence the insurance premium payable does not change from year to year. Moreover, taking insurance to be "Nil" also does not impact the result of the analysis. CL 6 is closed.

APPENDIX II: DOCUMENTS REFERRED DURING VALIDATION OF THE PROJECT ACTIVITY

- /1/ VCS Project Description Report, version 01, dated 04/08/2015
- /2/ Final VCS PD version 03 dated 29/08/2015
- /3/ Financial Analysis Spreadsheet for IRR and benchmark computations
- /4/ Estimated Emission Reduction Calculation Sheet
- /5/ Local stakeholder meeting consultation evidence: attendance sheet & photographs
- /6/ CLP Board Resolution Extract recording the date of investment decision
- /7/ MEDA Infrastructure clearances issued to Gamesa
- /8/ MEDA Transfer of Capacity and Clearance for Commissioning of Wind Turbines
- /9/ Purchase Orders placed by CLP Wind Farms on Gamesa
- /10/ Commissioning certificate for all the WTGs of the project activity issued by MSEDCL
- /11/ Power Purchase Agreements signed between Project Participant and MSEDCL
- /12/ Initial offer for Wind Turbines from Gamesa to CLP Wind Farms (I) P Ltd.
O & M Agreement between Gamesa and CLP Wind Farms (I) P Ltd.
- /13/ Letter of Intent for Loan from lending institution IDFC
- /14/ Monthly Joint Meter Reading Reports issued by MSEDCL
- /15/ Copy of all invoices raised to MSEDCL by Project participant for net electricity exported to the grid
- /16/ Copy of Monthly Credit Note issued by MSEDCL to each WTG owner
- /17/ Energy Meter Test Reports certificate for year issued by MSEDCL
- /18/ Guidelines for assessing compliance with the calibration frequency Version 01, CDM-EB 52, Annex 60
- /19/ Verified Carbon Standard Version 3, v3.5 dated 25 March 2015 v.3.5
- /20/ VCS Program Guide Version 3 v3.5 dated 8 October 2013

APPENDIX III: LIST OF PERSONS INTERVIEWED

List persons interviewed during the verification process or persons that contributed with other information that are not included in the documents listed above.

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|-----|--------------------|---|
| /1/ | Mr. Naman Sanghvi | CLP Wind Farms (India) Private Limited |
| /2/ | Mr. Rajesh Singh | Asset Manager, CLP Wind Farms (India) Private Limited, Jath |
| /3/ | Mr. Shyam Gaopande | Senior Manager, Gamesa |
| /4/ | Mr. Umar Farooq | Engineer, Gamesa |
| /5/ | Mr. Manish Dabkara | Consultant, EKI Services |