

VERIFICATION REPORT FOR “WIND POWER PROJECT OF CLP WIND FARMS (INDIA) PRIVATE LIMITED AT JATH”



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Summary:

LGAI Technological Center, S.A. (hereafter referred to as Applus+ LGAI) has been contracted by CLP Wind Farms (India) Private Limited to conduct the verification of the project "Wind Power Project of CLP Wind Farms (India) Private Limited at Jath", VCS ID 1479, against VCS Standard Version 3.7.

The verification includes confirming the implementation of the monitoring plan of the registered VCS PD and MR (Project ID 1479) and the application of the monitoring methodology as per ACM0002, Version 16 dated 28/11/2014 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources". A site visit was conducted to verify the data submitted in the monitoring report.

The purpose of this project activity is to generate electricity using renewable sources (wind) and export it to southern grid, thereby displacing the grid generated electricity.

A risk based approach has been followed to perform this verification. In the course of verification, 04 Corrective Action request (CARs) and 00 Clarification request (CLs) were raised and successfully closed.

The review of the project design documentation, monitoring report and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and stakeholders have provided Applus+ LGAI with sufficient evidence to validate the fulfilment of the stated criteria.

Applus+ LGAI confirms that the project is implemented in accordance with the registered VCS PD & MR. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the projects GHG emissions and the resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring and its associated documents. Based on the information seen and evaluated we confirm that the emission reductions from the project activity "Wind Power Project of CLP Wind Farms (India) Private Limited at Jath" in India during the period 02/10/2016 – 31/10/2017 (including both days) amount to 108,410 tonnes of CO₂e.

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1 INTRODUCTION

1.1 Objective

Applus+ LGAI has been contracted by CLP Wind Farms (India) Private Limited (project proponent), to undertake the verification of the renewable energy project titled "Wind Power Project of CLP Wind Farms (India) Private Limited at Jath"(VCS ID-1479) The verifiers have reviewed the GHG data collected to date for the monitoring period from 02/10/2016 to 31/10/2017 (both days included) covered in this verification. The objective of this verification is a thorough and independent assessment of registered project activities against the applicable VCS requirement by the DOE. The verification process shall determine whether the proposed project activity complies with the requirements of latest VCS guidelines, applicability conditions of the selected methodology, relevant host country regulations and guidance issued by the VCS Board.

1.2 Scope and Criteria

The scope of the verification was the independent and objective review and ex-post determination of the monitored reductions in GHG emissions from "Wind Power Project of CLP Wind Farms (India) Private Limited at Jath" The verification of this project was based on the registered project description & monitoring report /04/ and supporting documents submitted by the project proponent to the verification team. The documents were reviewed against the following guidance and protocols:

VCS Standard: VCS Version 3, 21/06/2017, v3.7 (VCS Standard)

Approved Clean Development Mechanism (CDM) methodology ACM0002, version 16, "Consolidated methodology for grid-connected electricity generation from renewable sources".

Validated VCS Project Description, version 03 dated 29/08/2015

VCS Program Guide, Version 3, 21/06/2017, v3.7

ISO 14064-3: Specification with guidance for the validation and verification of greenhouse gas assertions, 2006

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

1.3 Level of Assurance

The level of assurance of the verification report falls under reasonable assurance engagements as selected by the Client. The verification team verified the complete monitoring data for all the parameters of the monitoring plan and confirms that the reported emission reductions are free from any type of material errors. Materiality for the project is 5%.

1.4 Summary Description of the Project

The project activity involves electricity generation by wind electric convertors and supplying the generated electricity to the NEWNE Grid. The project being a renewable energy generation activity, it leads to removal of fossil fuel dominated electricity generation. The project activity results in reductions of greenhouse gas (GHG) emissions that are real, measurable, and verifiable and also plays beneficial role in the mitigation of climate change.

The project activity consists of 30 WTGs (2 MW capacity each), making the total installed capacity to be 60 MW in the district of Sangli in Maharashtra, India. The WTGs are of Gamesa make 2 MW G97. The WTGs have been commissioned between 26/03/2014 and 31/03/2014. The same was verified against the registered VCS PD/01/ and commissioning certificates/14/. The emission reductions from the project activity during the period 02/10/2016 – 31/10/2017 (including both days) amount to 108,410 tonnes of CO₂e.

2 VERIFICATION PROCESS

The registered VCS project is undergoing second verification under VCS, the approach adopted to ensure the quality of emission reductions is described in the following sections.

2.1 Method and Criteria

Verification was conducted using Applus+ LGAI procedures in line with the requirements specified in the VCS Version 3 Requirements, CDM M&P, the latest version of the CDM Validation and Verification Standard, and relevant decisions of the COP/MOP and the CDM EB and applying standard auditing techniques.

It is to be assessed and determined whether the proposed implementation and operation of the project activity, and the steps taken to report emission reductions comply with the criteria and relevant guidance provided by the VCS Board. The validation/verification process consist of the following three phases;

- A desk review of the VCS PD and VCS MR
- Site visit and follow up interviews with project stakeholders
- The resolution of outstanding issues and issuance of final report and opinion.

2.2 Document Review

The verification is performed primarily as a document review of the registered VCS PD/01/, previous MR and Verification report and associated documents as stated in details in appendix 1 of this document. The assessment is performed by a verification team using a protocol. The cross checks between information provided in the Monitoring report, VCS PD and information from sources other than those used, if available, the team's sectoral or local expertise and, if necessary, independent background investigations.

2.3 Interviews

The site visit for the project location, by the assessment team, was conducted on 10/11/2017 and the following stakeholders were interviewed.

S N	Name	Organization
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1	Mr. Anik Ray	CLP
2	Mr. Sagar Mane	Gamesa
3	Mr. Mayur Gupta	Gamesa
4	Mr.B.Suresh Kannan	Gamesa
5	Mr. Vinayak	Gamesa

The topics covered during interview ranges from general features and implementation of project to technical details of the project like calibration details, monitoring and measuring system and data collection, recording and archiving procedures. The assessment was drawn based on the feedback received during interview coupled with the documentation and on-site observations.

2.4 Site Inspections

A site visit was undertaken by the verification team on 10/11/2017 to carry out the following;

- a. An assessment of the implementation and operation of the registered project activity as per the registered VCS PD and VCS MR;
- b. A review of information flows for generating, aggregating and reporting the monitoring parameters;
- c. Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the PD;
- d. A cross check between information provided in the monitoring report and data from other sources such as plant logbooks, inventories, purchase records or similar data sources;
- e. A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PD, the applied methodology including applicable tool(s), and, where applicable, the applied standardized baseline;
- f. A review of calculations and assumptions made in determining the GHG data and emission reductions;
- g. An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

2.5 Resolution of Findings

The objective of this step is to identify, discuss and conclude on the issues related to the monitoring, implementation and operations of the registered project activity that could impair the capacity of the registered project activity to achieve emission reductions or influence the monitoring and reporting of emission reductions. This is done based on the desk review and onsite assessment. The verification team prepares and/or updates a verification protocol (internal document) that records the conformities and non-conformities, which may be of following types;

CAR (Corrective Action Request) is raised if one of the following occurs:

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

Clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met. All CARs and CLs raised by the Applus+ LGAI during verification shall be resolved prior to submitting a request for issuance.

FAR (Forward Action Request) is raised during verification if the monitoring and reporting require attention and/or adjustment for the next verification period.

All the findings that are raised and communicated to project participant during the verification are included under Appendix 3. The section also includes the response, if provided, by the project participants and an assessment by the verification team if it was closed out or otherwise.

2.5.1 Forward Action Requests

The project activity is undergoing fourth verification under VCS; there were no FARs raised during the validation or previous verification.

2.6 Eligibility for Validation Activities

Not applicable.

3 VALIDATION FINDINGS

Not applicable.

3.1 Participation under Other GHG Programs

The project activity is registered under the VCS only (VCS Project ID 1479) and is not registered under any other emissions trading program or any other mechanism that includes GHG allowance trading. PP also confirms that net GHG emission reductions or removals generated during this monitoring period shall not be used for compliance under any such programs or mechanisms. This was confirmed through a declaration/21/ submitted by the PP and hence accepted by the assessment team.

3.2 Methodology Deviations

There is no methodology deviation identified during the current monitoring period.

3.3 Project Description Deviations

During the previous monitoring period/10/ it is found that the check meter installed at feeder no-08 was replaced with new meter because the old meter date and time was absurd. Replacement of check meter is considered as project description deviation by the project proponent and deemed appropriate by the assessment team as the procedures defined in the PPA/15/ referred in the registered PD/01/ have been followed by the PP. A detailed discussion of the metering arrangement, clause of PPA and PD reference has been included in section 4.3 of the report and appropriately included in section 3.3 of the monitoring report. The deviation has also been described under section 2.2.2 of the monitoring report.

The assessment team able to confirm that the deviation identified during the current monitoring period deviation is appropriately described and justified and the project remains in compliance with the VCS rules. Also the deviation does not have an impact on the applicability of the methodology, additionality or the appropriateness of the baseline scenario.

3.4 Grouped Project

Not applicable. The project activity is not a grouped project

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The project activity consists of 30 WTGs installed at Sangli district in the Indian State of Maharashtra. The first and last machine under the project activity was commissioned on 26/03/2014 and 31/03/2014 respectively. The WTGs are of G97 model with an individual capacity of 2 MW, summing up to 60 MW of total installation capacity. The installation and specification of WTGs has been check with commissioning certificates/14/ and on-site assessment/13/. The commissioning has also been duly validated in the VCS validation report of the project activity/02/.

The technical specifications of WTGs were verified through the nameplate details (imprinted/placed at the bottom of WTG tower) available at the WTGs physically checked during the site visit and were found to be consistent with the details provided in the registered PD /01/.

Location of the project was verified through Latlong.net (<https://www.gps-coordinates.net/>) and found consistent with the data provided in the registered PD /01/. The WTGs generate 3-phase power at 400 V ($\pm 12.5\%$) in the frequency range of 47.5 – 51.5 Hz. It is further stepped up to 33 kV for further distribution by the state utility. This information was verified during physical site visit and found to be in line with the details provided in the registered PD /01/.

It was observed during the site visit that, the WTGs belongs to the project activity are connected to DISCOM Vaspeth (Jath) substation (132 kV/33 kV) located at Jath taluka, district Sangli. All the machines are connected through step-up transformers (400V to 33kV), these transformers are consecutively connected to 8 feeders and that ultimately lead to two-step up transformers (33kV to 132 kV) via separate lines at DISCOM substation/13/. During the site visit it is observed that non-project WTGs are also connected to these feeders. Hence, the electricity export and import from the project WTGs is apportioned based on the on LCS meter readings available from the individual WTGs.

The PP has signed PPA/15/ with state utility for the sale of electricity to the grid and has been supplying electricity in compliance with the PPA as confirmed from the monthly invoices /07/.

All 30 WTGs were fully functional and the assessment team verified this during the site visit/13/. In addition to the physical inspection of the site, the following documents have been reviewed by the assessment team during the site visit to verify the project implementation:

- Commissioning certificates/14/
- Power Purchase Agreement/15/
- Invoices raised by the PP to State utility /07/
- Testing certificates of all energy meters/06/

The information relating to the project implementation, provided in the Monitoring Report/04/ is consistent with that stated in the registered PD/01/. The data and variables provided in the monitoring report are the same as stated in the registered PD. Total emission reductions achieved under this monitoring period 02/10/2016 to 31/10/2017 (including both days) is 108,410 tCO₂e.

There was no major breakdown or shut downs during the monitoring period which might affect the applicability of methodology or might cause material errors in emission reductions.

Assessment team concludes the following:

- a) The implementation status of project activity was found to be in compliance with registered PD
- b) DOE has conducted the on-site visit to confirm the implementation status of the project.
- c) The commissioning date of the project activity was found to be accurately and consistently recorded.
- d) The actual operation of project activity was found to be in compliance with the flow diagram provided in registered PD.
- e) There was no increase in emission reduction from estimates made in registered PD, and hence no further justification to be provided for the same.
- f) The project is registered under VCS program only.

4.2 Accuracy of GHG Emission Reduction and Removal Calculations

The project monitoring has been carried in accordance with the registered VCS PD/01/ and the monitoring report/04/. The monitoring plan laid in the registered PD is being followed at the site/13/. The assessment team has verified the information flow (from data generation, aggregation, to recording, calculation and reporting for these parameters including the values) in the MR/04/.

The emission reductions are purely based on the net electricity generated and exported from the machines. PP has provided all the sufficient data for current monitoring period. The values of the parameter $EG_{PJ,y}$ used in deriving the GHG emission reduction could be very well correlated between the data sets and ER spreadsheet/05/ provided by PP. the verification of each monitoring parameter has been discussed later in section 4.3.

The calculation method and formulae used in calculating baseline emission is in compliance to the methodology used i.e. ACM0002 version 16.0 /11/. Since project activity is a wind power project, leakage emission and project emission has been considered as zero.

4.3 Quality of Evidence to Determine GHG Emission Reductions and Removals

The below table describe how the parameter, that is to be measured according to the monitoring plan, has been verified to confirm that the actual monitoring complies with the monitoring plan, monitoring data has been thoroughly assessed and that the calibration requirements are met.

Parameter	Quantity of net electricity generation supplied by the project (Wind) plant/unit to the grid in year y, $EG_{PJ,y}$ (MWh)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The parameter is calculated and recorded on monthly basis. Quantity of net electricity generation supplied by the project plant/unit to the grid in year y, is calculated as: $EG_{PJ,y} = (EG_{\text{export}} - EG_{\text{import}})$ Where, EG_{export} = Quantity of Electricity exported by the Project WTGs. EG_{import} = Quantity of Electricity imported by the Project WTGs.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/11/.

	Monitoring equipment	Energy meters installed at substation (132/33 kV Jath substation) are not used for this parameter, as $EG_{PJ,y}$ is calculated using the measured values. Metering equipment for which the characteristics are given in this section is that from the Jath substation are concerning to the input value¹ (used in calculation of $EG_{PJ,y}$) only.
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	The accuracy of the monitoring equipment used to measure the input values used to calculate EG_{export} and EG_{import} is 0.2s, which is as per the registered PD/01/ which is as per the norm defined in the PPA/15/.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy of monitoring equipment's is valid for the entire range.
	Calibration frequency /interval:	Calibration frequency of the meters is once in 3 years.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's	Yes. The calibration frequency is once in 3 years as outlined in the registered PD/01/ is in accordance with the national standards/18/.

¹ Import from Main/Check Meter ; Export from Main/Check Meter; Generation at WTG Controller and Total Generation of All WTG Controller used in the apportioning procedure as described in 3.3 of the MR.

	specifications?	
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes the calibration is conducted by state utility which is NABL Accredited entity/06/.
	Is(are) calibration(s) valid for the whole reporting period?	Calibration of meters is valid for complete reporting period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.
	How were the values in the monitoring report verified?	Cumulative value of $EG_{PJ,y}$ for entire monitoring period is reported in the monitoring report/04/, and monthly values in the ER calculation sheet/05/. The monthly values were verified from the breakup sheets issued by state utility and found to be consistent. Value of this parameter for the current monitoring period was verified as 110,963.19 MWh.
	If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of $EG_{PJ,y}$ were further cross checked with the monthly invoices raised by the PP /07/ to state utility and found to be consistent.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	On site assessment of the project activity confirms that the necessary QA/QC procedures are in place and the data management system is effective and reliable.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by	No such issues.

	Appendix 1 to the CDM Project Standard?	
Findings	CAR #1 ,CAR #2,CAR #3 and CAR #4 were raised and resolved.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. The emission reductions calculations for the project activity are estimated based on the electricity supplied by the WTGs. Since 100% data was verified, the team can ascertain that the values taken for emission reductions calculation are free from material errors.	

Parameters fixed ex ante:

$EF_{grid,OM,y}$; tCO_{2e}/MWh : it is the operating margin emission factor of NEWNE grid fixed at the time of project registration the mentioned value of 0.9862 tCO_{2e}/MWh is consistent with the registered PD/01/.

$EF_{grid,BM,y}$; tCO_{2e}/MWh : it is build margin emission factor of NEWNE grid fixed at the time of project registration the mentioned value of 0.9495 tCO_{2e}/MWh is consistent with the registered PD/01/.

$EF_{grid,CM,y}$; tCO_{2e}/MWh : it is the combined margin emission factor of NEWNE grid fixed at the time of project registration the mentioned value of 0.9770 tCO_{2e}/MWh is consistent with the registered PD/01/.

CALIBRATION OF METERS:

During the verification assessment of the project activity, accuracy of all the metering have been checked and found appropriate. The installation and working conditions of the meters were checked during the on-site inspection and were found to be satisfactory. Details of meters are provided in below table:

Meter Location	Meter Serial No	Meter Type	Meter Make/ Accuracy class	Calibration Date	Calibration due Date
Feeder-01	15687855	Main Meter	Elster/0.2s	22/07/2016	22/07/2019
	15687856	Check meter:	Elster/0.2s	22/07/2016	22/07/2019
Feeder-02	15687858	Main Meter	Elster/0.2s	22/07/2016	22/07/2019
	15687860	Check meter	Elster/0.2s	22/07/2016	22/07/2019
Feeder-03	15687862	Main Meter	Elster/0.2s	22/07/2016	22/07/2019
	12853657	Check meter	Elster/0.2s	22/07/2016	22/07/2019
Feeder-04	13813553	Main Meter	Elster/0.2s	22/07/2016	22/07/2019
	16351040	Check meter	Elster/0.2s	22/07/2016	22/07/2019
Feeder-06	16636465	Main Meter	Elster/0.2s	22/07/2016	22/07/2019
	16636468	Check meter	Elster/0.2s	22/07/2016	22/07/2019
Feeder-07	15456640	Main Meter	Elster/0.2s	22/07/2016	22/07/2019
	16351020	Check meter	Elster/0.2s	22/07/2016	22/07/2019
Feeder-08	16636473	Main Meter	Elster/0.2s	22/07/2016	22/07/2019
	02814125	Check meter	Elster/0.2s	22/07/2016	22/07/2019
Feeder-09	16351021	Main Meter	Elster/0.2s	22/07/2016	22/07/2019
	16351022	Check meter	Elster/0.2s	22/07/2016	22/07/2019

It is evident from the above table that calibration for the meters was carried out as per the frequency mentioned in the registered monitoring plan and no delay in calibration identified during the current monitoring period.

Meters used to measure the parameters are of accuracy class 0.2s, as verified through calibration certificates/06/ and also physical inspection during the site visit. The CEA Notification No. 502/70/CEA/DP&D dated 17/03/2006 and its amendments Notified on 26/06/2010 No. 502/6/2009/DP&D/D-I /18/ which is considered as national standard, mentions that for voltage of 650 V up to 33 kV, 0.5s accuracy class or above is recommended. Hence, the accuracy classes of 0.2s for the energy meters installed at the project activity site are found to be appropriate.

Meters used to measure the parameters are of accuracy class 0.2s, as verified through calibration certificates/06/ and also physical inspection during the site visit. The CEA Notification No. 502/70/CEA/DP&D dated 17/03/2006 and its amendments Notified on 26/06/2010 No. 502/6/2009/DP&D/D-I /18/ which is considered as national standard, mentions that for voltage of 650 V up to 33 Kv, 0.5s accuracy class or above is recommended. Hence, the accuracy classes of 0.2s for the energy meters installed at the project activity site are found to be appropriate.

The details of monitoring equipment are involved in the project activity and their calibration details/06/ are mentioned in the table under section 3.3 of the VCS MR/04/. The monitoring equipment consists of a main and check meter at the state utility substation. The meters have been physically inspected during the site visit and the meter details are found to be consistent with that observed during the site visit. The accuracy class of the meters are consistent with that mentioned in the registered VCS PD/01/.

The CEA Notification No. 502/70/CEA/DP&D dated 17/03/2006/18/ which is considered as national standard mentions that "All interface meters shall be tested at least once in five years." Hence, the stipulated calibration frequency once in 3 years is appropriate. As indicated through the dates of calibration mentioned in the table under section 3.3 of the VCS MR, all meters are calibrated once in 3 years. The date of calibration has been verified against the calibration certificates/06/. The registered VCS PD & MR /04/ and site visit observations confirm that the metering equipment are sealed and calibrated by the state utility.

In view of the above discussion the assessment team able to confirm that evidence used to determine the GHG reductions and removals are sufficient and appropriate with respect to quality and quantity.

GHG Calculations

The emission reduction as per the applied methodology equals the baseline emissions (project emissions and leakage emissions for such project activities is considered zero). The formula provided for the calculation of baseline emissions is:

$$BE_y = EG_{PJ, y} * EF_{grid, CM, y}$$

Where:

BE_y : Baseline emissions in year y (tCO₂e/yr)

$EG_{PJ, y}$: Quantity of net electricity generation supplied by the project (Wind) plant/unit to the grid in year y (MWh/yr)

$EF_{grid, CM, y}$: Combined Margin (CM) Emission Factor of NEWNE (tCO₂e/MWh)

Thus, $BE_y = EG_{PJ, y} * EF_{grid, CM, y}$

Thus, $BE_y = 110,963.19 \text{ MWh} * 0.9770 \text{ tCO}_2\text{e/MWh}$

$= 108,110 \text{ tCO}_2$

The verification team confirms that appropriate methods and formulae for calculating baseline emissions have been followed. The assumptions, emission factors and default values that were applied in the calculations are justified. The actual emission reduction achieved during the current monitoring period are 15.37% lower than the estimated amount of emission reductions at the time of validation, which is due to the low PLF achieved by the project activity during the monitoring period.

It is to be noted that PLF is completely governed by the availability of wind, which is natural phenomenon and same is beyond the control of PP, hence the assessment team has concluded the decrease in emission reduction of the project activity is justified and acceptable. All the data were made available and have monitored as per required monitoring frequency. The means of verification for the values of parameters, used for baseline emission calculation, is described above.

4.4 Non-Permanence Risk Analysis

Not applicable for the project activity.

5 SAFEGUARDS

5.1 No Net Harm

Not applicable for this verification.

5.2 Local Stakeholder Consultation

Not applicable for this verification.

6 VERIFICATION CONCLUSION

LGA Technological Center, S.A. (also referred to as Applus+ LGA), contracted by CLP Wind Farms (India) Private Limited, to perform the independent verification of the emission reductions for the VCS project activity (VCS ID- 1479) "Wind Power Project of CLP Wind Farms (India) Private Limited at Jath" in India for the monitoring period 02/10/2016 – 31/10/2017 as reported in the Monitoring Report Version 03 dated 08/01/2018. The CLP Wind Farms (India) Private Limited is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity.

It is our responsibility to express an independent verification statement on the reported GHG emission reductions from the project activity

Applus+ LGAI commenced the verification on the basis of the baseline and monitoring methodology ACM0002 version 10, the monitoring plan contained in the registered VCS PD Version 03, dated 29/08/2015 and VCS guidelines version 3.7, Monitoring Report Version 03 dated 08/01/2018 as per the process described under Section 2 of this report.

Applus+ LGAI verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. Applus+ LGAI planned and performed the verification by obtaining evidence and other information and explanations that Applus+ LGAI considered necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

In our opinion the GHG emissions reductions reported for the project activity for the period 02/10/2016 – 31/10/2017 are fairly stated in the Monitoring Report Version 03 dated 08/01/2018. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology ACM0002, Version 16, and the VCS standard.

Verification period: From 02/10/2016 – 31/10/2017 (including both days)

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

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
2016 (02/10/2016 to 01/01/2017)	12,447.00	0.00	0.00	12,447.00
2017 (02/01/2017 to 31/10/2017)	95,963.00	0.00	0.00	95,963.00
Total	108,410	0.00	0.00	108,410

APPENDIX 1: DOCUMENT REFERENCES

S.No	Title of Document	Version	Date
1.	Registered VCS PD	3.0	29/08/2015
2.	VCS Validation Report, prepared by Bureau Veritas Certification, Report no. BVCH/VCS/VAL/2015/01	1.0	04/09/2015
3.	VCS Monitoring Report	1	08/11/2017
3.1	VCS Monitoring Report	02	27/12/2017
4.	VCS Monitoring Report (Final)	03	08/01/2018
5.	ER spread sheet (corresponding to the final monitoring report)	-	08/01/2018
6.	Certificates of Calibration for all the meters belongs to project activity	-	-
7.	Invoice issued by PP to state DISCOM for the period 02/10/2016 to 31/10/2017		-
8.	Monthly Joint Energy Meter Reading for the period 02/10/2016 to 31/10/2017	-	-
9.	Monthly Credit Breakup Sheet issued by state DISCOM for the period 02/10/2016 to 31/10/2017	-	-
10.	VCS Verification Report for MP02, issued by ESPL	2.0	08/11/2016
11.	"Consolidated baseline methodology for grid-connected electricity generation from renewable sources", ACM0002,	16.0	28/11/2014
12.	CEA Database	version 10	December 2014
13.	On-site assessment, interviews of plant staff	-	10/11/2017
14.	Commissioning certificate for all the WTGs of the project activity issued by MSEDCL	-	-
15.	Power Purchase Agreements signed between Project Proponent and MSEDCL	-	10/10/2014
16.	VCS webpage for the project, VCS ID 1479; http://www.vcsprojectdatabase.org/#/project_details/1479	-	Last accessed on 05/01/2018
17.	VCS Program Definitions	Version 3.7	21/06/2017
18.	Central Electricity Authority (Installation and Operation of Meters) Regulations Notified on 17/03/2006 No. 502/70/CEA/DP&D Amendments Notified on 26/06/2010 No. 502/6/2009/DP&D/D-I	-	-
19.	VCS Standard	Version 3.7	21/06/2017
20.	VCS Program Guide	Version 3.7	21/06/2017
21.	Letter of declaration dated from PP regarding not having created or sought any other form of environmental credit for the same period	-	-

APPENDIX 2: ABBREVIATIONS

Abbreviations	Full texts
ABT	Availability Based Tariff
BEF	Baseline Emission Factor
BM	Build Margin
CAR	Corrective Action Request
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CL	Clarification Request
CMP	Conference of Parties Serving as Meeting of Parties
CO ₂	Carbon dioxide
DISCOM	Distribution Company
EB	Executive Board
EPC	Engineering, Procurement and Construction
FAR	Forward Action Request
GHG	Green House Gas
ISO	International Standards Organization
JMR	Joint Meter Reading
kW	Kilowatt
kWh	Kilowatt hour
MEDA	Maharashtra Energy Development Agency
MFR	Multi-Function Relay
MR	Monitoring Report
MSEDCL	Maharashtra State Electricity Distribution Company Limited
MW	Megawatt
MWh	Megawatt-hour
NEWNE	Northern Eastern Western Northern-Eastern
O&M	Operation and Maintenance
PD	Project Description
PLF	Plant Load Factor
PP	Project Proponent
PPA	Power Purchase Agreement
CMS	Central Monitoring System
QA/QC	Quality Assurance and Quality Control
UNFCCC	United Nations Framework Convention on Climate Change
WTG	Wind Turbine Generator
VCS	Voluntary Carbon Standard
VCSA	Voluntary Carbon Standard Association
VCS PD	VCS Project Description
VCUs	Voluntary Carbon Units
WTG	Wind Turbine Generator

APPENDIX 3: Findings Overview

Table 1. Remaining FAR from validation and/or previous verification

FAR ID	NA	Section no.	NA	Date :DD/MM/YYYY
Description of FAR				
No FAR from validation				
Project participant response				Date :DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				Date: DD/MM/YYYY
NA				

Table 2. CL from this verification

CL ID	NA	Section no.	NA	Date : DD/MM/YYYY
Description of CL				
NA				
Project participant response				Date : DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				Date: DD/MM/YYYY
NA				

Table 3. CAR from this verification

CAR ID	01	Section no.	1.4	Date:29/11/2017
Description of CAR				
Please submit the energy breakup sheets and corresponding invoices raised by the PP for the current monitoring period. Latest calibration certificates for energy meters are not submitted.				
Project participant response				Date: 27/12/2017
Energy breakup sheet and respective invoices are attached now with this submission. Latest calibration certificates are attached now with this submission.				
Documentation provided by project participant				
Energy breakup sheet and respective invoices Latest calibration certificates				
DOE assessment				Date: 05/01/2018
Energy breakup sheets and corresponding invoices are checked and the data reported in the ER sheet is found consistent. Calibration certificates submitted by the PP are checked and the meter details provided in the MR is found consistent with the calibration certificates, hence accepted. CAR #1 is closed.				

CAR ID	02	Section no.	4.3	Date:29/11/2017
Description of CAR				
Please submit the ER calculation sheet for the current monitoring period.				
Project participant response				Date: 27/12/2017
Emission reduction sheet is now attached with this submission				
Documentation provided by project participant				
ER calculation sheet				
DOE assessment				Date: 05/01/2018

ER calculation sheet is checked and the data reported in the sheet is verified with the source document (Breakup sheets), found to be consistent. However it is not clear why the comparison of VERs estimated in the registered PD and actual VERs achieved during the current monitoring period is not provided in the ER calculation sheet.

The total emission reductions achieved during the monitoring period as mentioned at page 3 of the MR is not consistent with the ER calculation sheet.

CAR #2 is open

Project participant response

Date: 08/01/2018

According to VCS MR template, comparison of estimated VERs as per registered PD and actual VERs achieved during the current monitoring period is not mandatory. However, same has been incorporated in the revised MR. In this monitoring period, project has generated 15.37% less VCUs as per registered PD. Wind being a natural phenomenon, this reduction in VERs is beyond the control of CLP.

The total emission reductions achieved during the monitoring period has now been constantly updated in monitoring report.

Documentation provided by project participant

Revised MR version 03, dated 08/01/2018

Revised ER sheet

DOE assessment

Date: 08/01/2018

The PP has included the comparison of actual ERs achieved in the monitoring period and estimated ERs in the registered PD for comparable period in the revised MR/ER sheet. The same is found satisfactory hence accepted.

Value of total ERs is corrected at page 3 of the MR, consistent with the ER sheet.

CAR #2 is closed.

CAR ID	03	Section no.	4.1	Date: 29/11/2017
Description of CAR				
1. Number of energy meters mentioned under section 3.2 of the MR is inconsistent with the same reported in section 3.3. 2. Web link provided for CEA database does not open, please clarify.				
Project participant response				Date: 27/12/2017
1. In this project, total 9 feeders have been installed and one main and one check meter are installed in each feeder. Thus, total 18 energy meters are installed for this project. Description of the same mentioned in section 3.3 and section 3.2 in revised consistently. 2. Web link for CEA database has been corrected now.				
Documentation provided by project participant				
Revised MR				
DOE assessment				Date: 05/01/2018
Number of energy meters is updated in section 3.2 of the revised MR, found to be correct. Web link of CEA database is updated and found working. CAR #3 is closed				

CAR ID	04	Section no.	1.1	Date: 05/01/2018
Description of CAR				
End date of the current monitoring period is changed from 01/11/2017 to 31/10/2017. Kindly clarify the reason for the same.				
Project participant response				Date: 08/01/2017

On or before 01/02/2017, Joint Meter Reading was recorded on first day of each month. However, post 01/02/2017, generation upto 24:00 hrs. of last day of every month has been considered for Joint Meter Reading. Thus, actual end date of the monitoring period would be 31/10/2017 instead of 01/11/2017. Thus, same has been mentioned in the monitoring report. Further, same could be verified from the joint meter reading reports.

Documentation provided by project participant

Revised MR v.03

DOE assessment

Date: 08/01/2017

The PP has updated the end date of current monitoring period in the revised MR as 31/10/2017 in line with the billing cycle dates mentioned in the JMR issued for the month Oct 2017. Consequently the monitoring period changed as 02/10/2016 to 31/10/2017 instead of 02/10/2016 to 01/11/2017.

It is to be noted that the monthly JMRs is the main cross reference of verification for the power exported by the project activity to the grid system and the monthly power invoices are also generated based on this monthly JMR statement and cannot be altered once issued. Since monthly data recording (billing date) and issuance of JMRs is solely under control of state electricity authority (MSEDCL), hence the revised end date of monitoring period is found correct.

The assessment team confirms that the change in monitoring period dates from 02/10/2016 – 01/11/2017 to 02/10/2016- 31/10/2017 is in line with the guidelines published in 41st meeting of EB under paragraph 78, hence accepted.

CAR #4 is closed.

Table 4. FAR from this verification

FAR ID	NA	Section No.	NA	Date :DD/MM/YYYY
Description of FAR				
No FAR raised				
Project participant response				Date :DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				Date: DD/MM/YYYY
NA				