



**Verified Carbon
Standard**

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



Document Prepared By LGAI Technological Center, S.A. (Applus+)

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Summary:

LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) 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 with regard to the relevant requirements of VCS programme guidelines and standard (VCS standard version 4.5, & VCS program guide version 4.4). The scope of verification includes confirming the implementation of the monitoring plan of the registered VCS PD (version 03) dated 29/08/2015 and the application of the monitoring methodology “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, ACM0002, Version 16. The monitoring period covers under this verification are from 01/10/2021 to 31/12/2022 (both days included).

The project capacity involved installation of 60 MW (30*2) MW wind power project in Jath taluka, Dist. Sangli, in the state of Maharashtra, India and supplying the electricity to the NEWNE grid (now part of Integrated Indian Grid). Thus, projects aim to displace electricity produced by fossil fuel power plants harnessing wind energy. Therefore, the project reduces the greenhouse gas emissions and hereby contributing sustainable development.

A risk-based approach has been followed to perform this verification. In the course of verification, 03 Corrective Action request (CARs), 00 Forward Action request (FARs), and 01 Clarification request (CLs) were raised and successfully closed.

The review of the Monitoring report and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and project owners have provided LGAI Technological Center S.A. (Applus+ Certification) with sufficient evidence to verify the fulfillment of the stated criteria of VCS.

LGA Technological Center S.A. (Applus+ Certification) confirms that the project is implemented in accordance with the registered VCS PD/01/. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the project's 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" during the period 01/10/2021 to 31/12/2022 (including both days) amount to 101,816 tons of CO₂e.

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1 INTRODUCTION

1.1 Objective

LGAI Technological Center S.A. (Hereafter referred as Applus+ Certification) has been contracted by CLP Wind Farms (India) Private Limited, 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 01/10/2021 to 31/12/2022 (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 VVB. 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 verification is to assess the claims and assumptions made in the VCS monitoring report (MR) against the VCS criteria, including but not limited to, VCS standard, applied methodology and other relevant rules and requirements established for VCS project activities.

The Verification is not meant to provide any consulting towards the project participants. However, stated requests for clarification and/or correction actions request may have provided inputs for improvement of the project design.

1.3 Level of Assurance

The level of assurance of the verification report falls under reasonable assurance engagements. Reasonable assurance is a high level of assurance regarding material misstatements, but not an absolute one.

Reasonable assurance includes the understanding that there is a remote likelihood that material misstatements will not be prevented or detected on a timely basis. To achieve reasonable assurance, the auditor needs to obtain sufficient appropriate audit evidence to reduce audit risk to an acceptably low level. This means that there is some uncertainty arising from the use of sampling, since it is possible that a material misstatement will be missed.

The evidence used to achieve a reasonable level of assurance is specified in section 2.3 and 2.4 of this report. Materiality for the project is 5%, however the assessment team has verified 100% data (no sampling plan is applied), hence it is sufficient to meet the materiality requirements of the project.

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 (now part of integrated Indian 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. Location of the project WTGs was verified through Google Map (<https://www.google.co.in/maps>) and found consistent with the data provided in the registered VCS PD dated/01/. The same was verified against the registered VCS PD/01/ and commissioning certificates/14/. The emission reductions from the project activity during the period 01/10/2021 to 31/12/2022 (including both days) amount to *101,816* tonnes of CO₂e.

The verification team has also verified the latest photographs/21/ of all the equipment's installed at site and SCADA monitoring system submitted by the project proponent. The project activity is undergoing seventh verification under first crediting period (01/10/2021 to 31/12/2022). Based on the assessment of the documents, the assessment team is able to confirm that the project activity is fully functional and implemented as described in the registered VCS PD/01/.

2 VERIFICATION PROCESS

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

2.1 Method and Criteria

The verification approach consists two phases.

In the first phase, Applus+ Certification completed a strategic review and risk assessment of the project's activities and processes in order to gain a full understanding of:

- Activities associated with all the sources contributing to the project emissions and emission reductions, including leakage if relevant;
- Protocols used to estimate or measure GHG emissions from these sources;
- Collection and handling of data;
- Controls on the collection and handling of data;
- Means of verifying reported data; and
- Compilation of the verification Report.

At the end of this phase, Applus+ Certification produced a Verification Checklist which, based on the risk assessment of the parameters and data collection and handling processes for each of those parameters, describes the verification approach and the sampling plan.

In the second phase using the Verification checklist, Applus+ Certification verified the implementation of the monitoring plan and the data presented in the VCS MR/05/ for the period in question. This involved telephonic interviews of project proponent representative's and a desk review of the Monitoring Report. This verification report describes the findings of this assessment.

2.2 Document Review

The verification is performed primarily as a document review of the registered VCS PD/01/, previous MR and Verification report/03/ 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 24/05/2023, and the following stakeholders were interviewed.

S N	Name	Organization
1	Mr. Navneet Kumar	Manager CLP
2	Mr. Prateek Soni	Senior Engineer, CLP
3	Mr. Ravi Dodiya	In Charge (EPC)

2.4 Site Visits

The onsite visit was undertaken by the verification team member Ravi Kant Soni (Lead Auditor) at respective locations, to carry out the following.

- An assessment of the implementation and operation of the registered project activity as per the registered VCS RCP PD and VCS MR.
- A review of information flows for generating, aggregating, and reporting the monitoring parameters.
- Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the PD.
- 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.
- 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.
- A review of calculations and assumptions made in determining the GHG data and emission reductions.
- An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

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 interaction with site personnel over phone. 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+ Certification 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.

During the current verification, 03 Corrective Action request (CARs), 00 Forward Action request (FARs), and 01 Clarification request (CLs) were raised and successfully closed. 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 seventh verification, there were no FARs raised during the validation or previous verification/02/.

2.6 Eligibility for Validation Activities

This section is not applicable for present verification, as Applus+ Certification holds the accreditation for Validation of projects under this Sectoral Scope.

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/16/ submitted by the PP and hence accepted by the assessment team.

The PP has submitted the declaration/16/ which states that the net GHG emission reductions generated by the project activity will not be used for compliance with any other emissions trading program or to meet binding limits on GHG emissions for the same monitoring period.

3.2 Methodology Deviations

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

3.3 Project Description Deviations

No deviation was considered during current monitoring period.

However, below deviation considered in previous verification:

Deviation 1: (During the previous monitoring period from 01/10/2020 to 30/09/2021)

During the current monitoring period it is observed that the main meter installed at feeder -01 was replaced with the new meter on 19/11/2019 due to erroneous display. The assessment team has checked the meter replacement certificate and confirmed that the accuracy class of new meter was same as the replaced meter and new meter calibrated before installation.

As verified through the PPA, the state utility (MSEDCL) is the sole entity responsible for calibration and maintenance of the meters and the project proponent don't have involve in the procedure. In accordance with the guidelines as outlined under the clause 3.18.2 of VCS standard version 4.4, the project proponent has considered this instance as project deviation.

Deviation 2:

During the third monitoring period the check meter installed at feeder no-08 was replaced with new meter because the old meter date and time was absurd. The replacement of check meter was considered as project description deviation by the project proponent and deemed appropriate by the assessment team as per the procedures defined in the PPA/15/ regarding the calibration and maintenance of meters.

The project proponent has described the deviations under section 3.1.2 of the monitoring report as per the guidelines provided under section 3.21.2 (2) of VCS standard version 4.5.

The assessment team able to confirm that the deviation identified during the previous monitoring period is appropriately described and justified and the project remains in compliance with the VCS rules. Also, the deviations do 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 project activity is reducing the GHG emissions generated by the current generation energy mix in India's Power Grid, which is dominated by fossil fuel-based grid connected power plants. The power generated through the proposed project activity being supplied to NEWNE grid (now part of Indian grid) through contractual arrangement (PPA). The technical specification of the project activity equipment's has been checked through the photographs of all the equipment's/19/ installed at site and are found to be consistent with the mentioned under section 3.1 of MR. The current status of the project activity is verified through the screen shots of SCADA system/19/, indicating the real-time generation data and hence it is confirmed that the project is fully functioning.

The monitoring plan of registered VCS PD/01/ includes the parameter "Quantity of net electricity generation supplied by the project (wind) plant/unit to the grid in year y" ($EG_{PJ,y}$). This parameter being calculated on monthly basis as:

$$EG_{PJ,y} = \text{Export} - \text{Import}$$

The electricity exported to the grid and electricity imported from the grid by the project and those are being measured by energy meters of accuracy class 0.2s located at DISCOM substation. These exports and import parameters are measured continuously and at least monthly recording. This is in line with methodology and is accepted.

Monthly values of $EG_{PJ,y}$ obtained directly from the monthly credit notes issued by state utility/09/. The invoicing being done against electricity supplied by the project plant. The measurement results are cross checked with records of invoices, and it is in line with applied methodology. Thus, this parameter is considered in emission reduction calculations.

As verified through the calibration certificates/07/ and recent photographs of energy meters/19/ that the project WTGs are connected to eight separate feeders, there is one set of energy meters (main and check meter) installed at each feeder located at substation and are under control of state utility (MSEDCL), sealed in presence of both the state utility official & representative of PP. Also, the WTGs of other project developers (non-project activity) are also connected to these feeders, hence the electricity supplied to the grid by the individual project developer is calculated by the O&M contractor/DISCOM using apportioning procedure as described under section 4.3 of the monitoring report.

Post apportioning the state utility issues the credit notes/09/ to individual project developer, that indicates the value of electricity exported, imported and net electricity supplied to the grid in particular month.

Joint Meter Reading is being taken jointly by the officials of state utility and project participant's representative on monthly basis and accordingly monthly credit note is being prepared/13/. The monitoring methodology applies consistently the choice of the option selected for monitoring of baseline emissions. The monitoring plan provide procedures for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period. This is checked through discussion with consultant and the project participant during the telephonic interview.

The VCS MR/04/ has been reviewed to check that the procedure for data uncertainty, emergency preparedness, roles and responsibility, operational and management structure are mentioned in the MR. The monitoring plan completely describes all measures to be implemented for monitoring all parameters required. The monitoring plan described the positioning of the equipment. Calibration frequency for Energy meters is once in 3 years. Also, CEA Notification/16/ No. 502/70/CEA/DP&D dated 17/03/2006 which is considered as national standard mentions that "All interface meters shall be tested at least once in five years." Hence calibration frequency once in 3 years considered for the project activity is found to be appropriate.

The audit history table is provided below:

Audit Type	Period	Program	VVB Name	Number of years	Status
Validation/ Verification	26/03/2014 - 01/08/2015	VCS	Bureau Veritas Certification Holding SAS	1 year, 4 months	Registered and issued
Verification	02/08/2015 - 01/10/2016	VCS	Earthood Services Private Limited	1 year, 2 months	Issuance approved
Verification	02/10/2016 - 31/10/2017	VCS	LGAI Technological Center, S.A. (Applus+)	1 year, 30 days	Issuance approved
Verification	01/11/2017 - 31/12/2018	VCS	Earthood Services Private Limited	1 year, 2 months	Issuance approved
Verification	01/01/2019 - 30/09/2020	VCS	Earthood Services Private Limited	1 year, 9 months	Issuance approved

Verification	01/10/2020 - 30/09/2021	VCS	LGAI Technological Center, S.A. (Applus+Certification)	1 year	Issuance approved
Verification	01/10/20221 -31/12/2022	VCS	LGAI Technological Center, S.A. (Applus+Certification)	1 year, 3 months	Ongoing verification
Total	26/03/2014 - 31/12/2022	VCS	-	8 years 9 months	-

The assessment team has checked the information about the audit history as provided in the above table and confirmed that the information provided are accurate.

Contribution of project activity to sustainable development:

The National CDM Authority (NCDMA), which is the Designated National Authority (DNA) for the Government of India (GOI) under the Ministry of Environment, Forest, and Climate Change (MoEFCC), has mentioned four indicators for the sustainable development:

- Social well being
- Environmental well being
- Economic well being
- Technological well being

The project's contribution towards sustainable development has been assessed as under the below table:

Sr.No	Sustainable Indicator	VVB assessment
1	Social well being	There are several job opportunities were created to local people during erection, commissioning, and maintenance of the wind power project. This may result to social balance in the region. The frequency of visiting to villages and nearby areas by skilled, technical and industrialist has increased due to installation /site visit/operation and maintenance work related to WTGs at plant site.

		This directly and indirectly positively effects the economy of nearby populace.
2	Environmental well being	Wind power is one of the cleanest renewable energy powers and does not involve any fossil fuel (https://www.eia.gov/energyexplained/wind/wind-energy-and-the-environment.php). There are no GHG emissions. The impact on land, water, air and soil is negligible. Thus, the project activity contributes to environmental well-being without causing any negative impact on the surrounding environment.
3	Economic well being	The project activity has generated permanent and temporary employment opportunity within the vicinity of the project. The electricity supply in the nearby area improves which directly and indirectly improves the economy and lifestyle of the area. The assessment team has virtually interviewed the PPs representatives, site personnel and observed that almost all the personnel were unemployed before taking up the job with the project developer. In general, the project activity has delivered the following economic benefits: - Employment opportunities - Reduce rate of migration to urban area - Improvement of a rural economy
4	Technological well being	The project activity is step forward in harnessing the untapped wind power potential and further diffusion of the technology in the region. The project activity leads to the promotion and demonstrates the success of wind projects in the region which further motivate more investors to invest in wind power projects. Hence, the project activity leads to technological well-being.

In view of the above assessment, the assessment team has considered that the project activity profoundly contributes to the sustainable development. It is to be noted that the project activity was registered under the VCS before 20/01/2023 and hence contribution to at least 3 SDGs is not mandatory to be demonstrated (ref: Appendix 3 of VCS standard v 4.5, clause 4, p.79).

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/01/. Total emission reductions achieved under this monitoring period 01/10/2021 to 31/12/2022 (including both days) is 101,816 tCO₂e.

Assessment team concludes the following:

- a. There are no material discrepancies between project implementation and the project description provided in the registered PD/01/.
- b. The monitoring plan is implemented completely and monitoring system (i.e., process and schedule for obtaining, recording, compiling, and analysing the monitored data and parameters) is appropriate.
- c. There are no material discrepancies between the actual monitoring system, and the monitoring plan set out in the project description and the applied methodology/11/.
- d. The GHG emission reductions or removals generated by the project have not included in an emissions trading program or any other mechanism that includes GHG allowance trading/16/.
- e. The project has not received or sought any other form of environmental credit or has become eligible to do so since validation or previous verification/03/.
- f. The project is only registered under VCS program and is not participated or rejected under any other GHG programs.

In view of the information's as verified above the assessment team can conclude that the project has been implemented as described in the project description.

4.2 Safeguards

4.2.1 No Net Harm

There is no negative impact to any socio-economic conditions of the region due to the project activity. The type of project activities requires to conduct EIA assessment are categorized under the schedule 1 of Ministry of Environment and Forest notification dated 14/09/2006¹ and further notification number 3067 from MoEF dated 01/12/2009². The proposed project activity does not fall under the listed categories and hence not required an EIA to be done. This project activity will not involve any negative environmental or socio-economic impacts, as the project activity involves generation of power using wind energy which is a clean source of energy. Hence no mitigation measures are required.

¹ <http://envfor.nic.in/legis/eia/so1533.pdf>

² <http://moef.nic.in/downloads/rules-and-regulations/3067.pdf>

4.2.2 Local Stakeholder Consultation

The PP conducted a consultation meeting with the local stakeholders at the Jath site on 08/01/2014.

The 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. The stakeholders identified by the project participant were local villagers who are the major population of the particular area, local communities and project employees, including O&M contractors. The assessment team verified the list of participants who attended the stakeholder meeting and confirms the stakeholders identified were relevant. The assessment team also verified the minutes of meeting to note that no negative comments were received.

The project activity undergoing seventh verification and local stakeholder consultation was appropriately conducted prior to validation to inform the design of the project and maximize participation from stakeholders during the validation.

The project proponent has implemented mechanism for ongoing communication with local stakeholders to allow stakeholders to raise concerns about potential negative impacts during implementation and operation of the project activity. The project proponent has placed a grievance register and a grievance box at the site office/25/, where the local villagers can register their concerns.

The assessment team has checked the photographs of the grievance register maintained at site office/25/ and confirmed that no formal complaints were received during the current monitoring period.

4.3 AFOLU-Specific Safeguards

Not applicable to the project activity.

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The calculation of the emission reductions is found to be correct. The details of the reported and the verified values for all parameters are listed in section 4.5 of this report.

The monitoring parameter ($EG_{PJ,y}$) is directly sourced from monthly credit notes issued by state utility/10/. The PP has provided the complete set of data for all the monitored parameter in the ER spreadsheet/07/. This data has been verified as described in section 4.5 below. The formulae & method used to calculate the baseline emissions, project emissions and leakage are appropriate and in line with the approved methodology ACM0002 version 16.

The PP has calculated the grid emission factor as per the combined margin approach described in the 'Tool to calculate the emission factor for an electricity system', version 04.0. The grid emission factor has been calculated as the weighted average of OM & BM; and has been fixed ex-ante for the entire crediting period.

The OM and BM have been obtained from a publicly available source i.e., "CO₂ Baseline Database for Indian Power sector", version 10 /12/ published by Central Electricity Authority, Ministry of Power, and Government of India. The OM has been determined as the average of the previous 3 years values obtained from the CEA database/12/. The value of BM has been identified directly from the CEA database. The combined margin emission factor was arrived at by applying weights of 75% for OM and 25% for BM, as specified in the tool. The OM and BM have been calculated to be 0.9862 tCO₂/MWh and 0.9495 tCO₂/MWh respectively. Applying the weights, the grid emission factor has been calculated to be 0.9770 t CO₂/MWh.

As per ER excel spreadsheet/07/ submitted by the PP, the net emission reductions for the current monitoring period were verified as 101,816 tCO₂e for the current monitoring period.

The assessment team able to confirm that the GHG emission reductions and removals have been quantified correctly in accordance with the project description and applied methodology.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

All the data recorded is in compliance with the registered VCS PD and Monitoring Report. The assessment team has checked the monthly credit reports for electricity generated and supplied by project activity/10/ for the current monitoring period to verify the values of monitoring parameters reported in ER calculation sheet and found to be consistent. Since the monthly Credit notes prepared and issued by state utility, they are found to be reliable and authentic.

CLP Wind Farms (India) Private Limited is responsible for the operations, maintenance and monitoring of the project activity, whose operation and maintenance activities are ISO 14001:2015 (Environment Management System) and ISO 45001:2018 (Safety Management System) certified/22,23,24/. Hence it is confirmed that the management system of the VCS project is in place; with the responsibilities properly identified. The same was also verified during the telephonic interview of site personnel.

The monitoring of the project activity is found to be in accordance with the monitoring methodology described in ACM0002, Version 16 /11/. The monitoring mechanism is effective and reliable. During the phone-call, personnel involved at various levels of the operation of the project activity have been interviewed to confirm that the plant personnel are conscious of the importance of the monitoring activities. The verification of the plant records and latest photographs are also substantiating consistency in recording and reporting of monitored data.

The screen shots of SCADA system/21/ confirms that the monitoring systems have been installed and are operational. The meters comply with appropriate quality standards applicable for the used technology. The accuracy class of the meters installed for the project activity was verified through the registered VCS PD/01/, MR /05/, and calibration certificates, latest photographs of meters and cross-checked against the PPAs/14/ signed for the project activity, found to be consistent. The supporting records of monthly credit notes /10/ issued by the respective state utility and invoices raised to MSEDCL for the entire monitoring period were checked and found to be sufficient to enable verification of emission reductions.

The following parameter has been verified for current monitoring period:

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, however, the input values used to calculate the value of $EG_{PJ,y}$ are continuously monitored, hourly measured and monthly recorded. The monitoring equipment (Energy meters) discussed in this section are concerning to the input values (Used in calculation of $EG_{PJ,y}$) only.

	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The measuring and reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/11/.
	Monitoring equipment	The energy meters are installed to measure input values used to calculate the value of $EG_{PJ,y}$. The WTGs belongs to project activity are installed at Jath site and connected to 8 different feeders and each feeder have exclusive dedicated metering arrangement at project site. Also, the WTGs of other project developers (non-project activity) are also connected to these feeders. The electricity generated by all the WTGs (project and non-project) has been fed to the NEWNE grid and monthly generation of all the WTGs at each feeder reading is recorded by the representatives MSEDCL in the presence of CLPWFPL officials in the form of JMR.
	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 values considered for calculation of $EG_{PJ,y}$ is 0.2s, which is as per the registered PD/01/ which is as per the norm defined in the PPA/15/.
	Calibration frequency /interval:	The meters are calibrated every 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, pending until the findings are closed or as per the manufacturer's specifications?	Yes, calibration interval of meters is 3 years, which is in line with the registered monitoring plan.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes, the calibration is conducted by MSEDCL which NABL Accredited Government institution/06/.
	Is (are) calibration(s) valid for the whole reporting period?	No Delay in calibration of meters is identified during the current monitoring period. (Details provided under the heading "Calibration of meters")
	How were the values in the monitoring report verified?	Commulative value for entire monitoring period is reported in the monitoring report and monthly values are in the ER calculation sheet. The monthly values were verified from the "Credit notes" issued by state utility and found to be consistent. Value of this parameter for the current monitoring period was verified as 104,214.33 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?	Yes, the adequate QA/QC procedures were implemented by all the stakeholders, namely, the Grid Authority (MSEDCL), the PP and the Gamesa (O&M Contractor). The data transfer process for the said parameter is as follows: The Joint meter reading at all the metering points at DISCOM substation is taken by the representatives of MSEDCL in the presence of CLPWFPL officials in the form of JMRs. Based on the data recorded in the JMRs, electricity supplied to the grid by the project activity is calculated by MSEDCL, using the apportioning procedure and credit notes for each project developer is prepared. Monthly credit notes issued by state utility provides the value of $EG_{PJ,y}$ that is directly used for emission reduction calculations. It is to be noted that all the meters are sealed by MSEDCL and JMR readings taken at meters are solely kept with state utility and not shared with the PP.
	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 Appendix 1 to the CDM Project Standard?	Not Applicable
Findings	CL #1, CAR #1, CAR #2 and CAR #3 were raised and resolved.	
Conclusion	The parameter has been monitored appropriately in accordance with the registered monitoring plan/01/ and applied methodology/11/. The monitored data was recorded consistently as per the approved frequency in monitoring plan/01/. Since 100% data has been monitored and verified, the verification team can ascertain that the values used for calculation of emission reduction are free from material errors. Implementation of the project is as per the registered monitoring plan/01/.	

Parameters fixed ex ante:

$EF_{grid,OM,y}$: The parameter is described as operating margin CO₂ emission factor of Indian Grid and is measured in unit tCO₂/MWh. The value provided in MR i.e., 0.9862 has been verified from PD/01/ and CO₂ Baseline Database for Indian Power Sector by Central Electricity Authority (version 10)/12/.

$EF_{grid,BM,y}$: The parameter is described as build margin CO₂ emission factor of INDIAN grid which is measured in units tCO₂/MWh. The value provided in MR i.e., 0.9495 has been verified from PD/01/ and CO₂ Baseline Database for Indian Power Sector by Central Electricity Authority (version 10)/12/.

$EF_{grid,CM,y}$: The parameter is described as combined margin CO₂ emission factor of INDIAN grid which is measured in units tCO₂/MWh. The value provided in MR i.e. 0.9770 has been verified from PD/01/.

Calibration of meters:

The energy meters installed at respective sub-stations are of accuracy class 0.2s as verified through the calibration certificates/08/. The installation and working conditions of the meters were checked through calibration certificates, latest photographs, JMRs 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 Validity Date
Feeder 1	02814124	Main Meter	Elster/0.2s	20/08/2020	19/08/2023
	15687856	Check meter	Elster/0.2s	20/08/2020	19/08/2023
Feeder-02	15687858	Main Meter	Elster/0.2s	20/08/2020	19/08/2023
	15687860	Check meter	Elster/0.2s	20/08/2020	19/08/2023
Feeder-03	15687862	Main Meter	Elster/0.2s	20/08/2020	19/08/2023
	12853657	Check meter	Elster/0.2s	20/08/2020	19/08/2023

Meter Location	Meter Serial No	Meter Type	Meter Make/ Accuracy class	Calibration Date	Calibration Validity Date
Feeder-04	13813553	Main Meter	Elster/0.2s	20/08/2020	19/08/2023
	16351040	Check meter	Elster/0.2s	20/08/2020	19/08/2023
Feeder-06	16636465	Main Meter	Elster/0.2s	20/08/2020	19/08/2023
	16636468	Check meter	Elster/0.2s	20/08/2020	19/08/2023
Feeder-07	15456640	Main Meter	Elster/0.2s	20/08/2020	19/08/2023
	16351020	Check meter	Elster/0.2s	20/08/2020	19/08/2023
Feeder-08	16636473	Main Meter	Elster/0.2s	20/08/2020	19/08/2023
	02814125	Check meter	Elster/0.2s	20/08/2020	19/08/2023
Feeder-09	16351021	Main Meter	Elster/0.2s	20/08/2020	19/08/2023
	16351022	Check meter	Elster/0.2s	20/08/2020	19/08/2023

It is evident from the above table that calibration of all the existing meters was valid during the current monitoring period, hence no delay in calibration of meters identified. 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 /16/ 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/07/ are mentioned under section 4.3 of the VCS MR/04/. The CEA Notification No. 502/70/CEA/DP&D dated 17/03/2006/16/ 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.

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. Hence, the stipulated calibration frequency once in 3 years is appropriate.

GHG Calculations:

The emission reduction as per the applied methodology (ACM0002 version 16) 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:

$$BE_y = EG_{PJ,y} * EF_y$$

Where,

BE_y is the baseline emissions in year y, tCO₂e

$EG_{PJ,y}$ is the net electricity supplied in MWh

EF_y is the Grid Emission Factor in tCO₂e/MWh

The calculation of the net emission reduction achieved is done using the equation provided below:

$$\text{Net Emission reduction} = BE_y - PE_y$$

Where,

BE_y is baseline emissions

PE_y is project emissions

As per the clause 36 of applied methodology ACM0002 version 16, “For most renewable energy power generation project activities”, $PE_y = 0$. Since the project activity is renewable energy power generation hence the values of the $PE_y = 0$.

Therefore,

$$\text{Net Emission Reductions} = BE_y - 0$$

$$BE_y = 104,214.33 * 0.9770$$

= 101,816 tCO₂e (rounded down value)

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 31.30 % 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.

4.6 Non-Permanence Risk Analysis

Not applicable for the project activity.

5 VERIFICATION OPINION

Applus+ Certification has been contracted by CLP Wind Farms (India) Private Limited, to perform the independent verification of the emission reductions for the VCS project activity “Wind Power Project of CLP Wind Farms (India) Private Limited at Jath” (VCS ID- 1479) in India for the monitoring period 01/10/2021 to 31/12/2022 as reported in the Monitoring Report Version 1.2 dated 11/10/2023. 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+ Certification commenced the verification based on the baseline and monitoring methodology ACM0002 version 16.0, the monitoring plan contained in the registered VCS PD Version 03 and VCS program guide version 4.4 Monitoring Report Version 1.2 dated 11/10/2023 as per the process described under Section 2 of this report. Applus+ Certification 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+ Certification planned and performed the verification by obtaining evidence and other information and explanations that Applus+ Certification 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 01/10/2021 to 31/12/2022 (both days included) are fairly stated in the Monitoring Report Version 1.2 dated 11/10/2023. The GHG emission reductions were calculated correctly based on the approved baseline and monitoring methodology ACM0002, Version 16, and the VCS standard version 4.5.

As summary the verification team able to conclude that:

- The project is in line with all relevant host country criteria (India) and all relevant VCS version 4 program guidelines requirements.
- Verification of the GHG statement was conducted in accordance with ISO 14064-3:2019.
- A reasonable level of assurance has been applied.

Verification period: 01/10/2021 to 31/12/2022 (including both days)

Verified GHG emission reductions and removals in the above verification period, broken down by calendar year:

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)
2021 (01/10/2021 to 31/12/2021)	10,608	0	0	10,608
2022 (01/01/2022 to 31/12/2022)	91,208	0	0	91,208
Total	101,816	0	0	101,816

Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PD:

Monitoring Period	Ex-ante emissions reductions/removals	Achieved emissions reductions/removals	Percent difference	Justification for the difference
01/10/2021 to 31/12/2022	148,198	101,816	-31.30%	The actual emission reductions for the current monitoring period are 31.30%

				lower than estimated emission reductions which are mainly due to poor availability of wind at site. Wind availability is a natural phenomenon which is beyond the control of CLP
Total	145,380	108,961	-14.5%	-

APPENDIX 1: DOCUMENT REFERENCE

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	01	10/05/2023
4.	VCS Monitoring Report (Final)	1.2	11/10/2023
5.	ER spread sheet	01	10/05/2023
6.	ER spread sheet (corresponding to the final monitoring report)	1.1	30/05/2023
7.	Certificates of Calibration for all the meters belongs to project activity	-	-
8.	Invoice issued by PP	For the period 01/10/2021 to 31/12/2022	-
K9.	Monthly credit notes issued by the state utility	For the period 01/10/2021 to 31/12/2022	-
10.	Approved Consolidated Methodology ACM0002	16.0	-
11.	CEA Database	version 10	-
12.	Commissioning certificate for all the WTGs of the project activity issued by MSEDCL	Commissioned from 26/03/2014 and 31/03/2014	-
13.	Power Purchase Agreements signed between Project Proponent and MSEDCL	-	-
14.	VCS webpage for the project, VCS ID 1479; https://registry.terra.org/app/projectDetail/VCS/1479	-	-
15.	Letter of declaration dated from PP regarding not having created or sought any other form of environmental credit for the same period	-	-

S.No	Title of Document	Version	Date
16.	Central Electricity Authority (Installation and Operation of Meters) Regulations Notified on 17/03/2006 <u>No. 502/70/CEA/DP&D</u> Amendments Notified on 26/06/2010 <u>No. 502/6/2009/DP&D/D-I</u>	-	-
17.	VCS Standard	Version 4.5	29/08/2023
18.	VCS Program Guide	Version 4.4	29/08/2023
19.	On- site visit observations	-	24/05/2023
20.	- ISO 9001:2015 certification for Scope of Design, Development and Operation of wind power plant - Quality policy implemented at site	-	-
21.	Grievance register/suggestion box placed at site office	-	-

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
CMS	Central Monitoring System
CMP	Conference of Parties Serving as Meeting of Parties
CO ₂	Carbon dioxide
DISCOM	Distribution Company
EB	Executive Board
FAR	Forward Action Request
GEDA	Gujarat Electricity Development Authority
GHG	Green House Gas
GETCO	Gujarat Electricity Transmission Company
GUVNL	Gujarat Urja Vikas Nigam Limited
ISO	International Standards Organization
JMR	Joint Meter Reading
kW	Kilowatt
kWh	Kilowatt hour
MFR	Multi-Function Relay
MR	Monitoring Report
MWh	Megawatt-hour
PD	Project Description
PLF	Plant Load Factor
PP	Project Proponent
QA/QC	Quality Assurance and Quality Control
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Voluntary Carbon Standard
VCSA	Voluntary Carbon Standard Association
VCS PD	VCS Project Description

VCUs	Voluntary Carbon Units
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APPENDIX 3: FINDINGS OVERVIEW

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

FAR ID	NA	Section no.	XX	Date :DD/MM/YYYY
Description of FAR				
Not applicable				
Project participant response				Date :DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				Date: DD/MM/YYYY

Table 2. CL from this verification

CL ID	01	Section no.	2.2	Date : 26/05/2023
Description of CL				
1. End date of current monitoring period as mentioned at p.1 of the MR is not consistent with the ER calculation sheet. 2. Value of total electricity exported to the grid in the current monitoring period as mentioned under section 1.1 of the MR is not consistent with the ER calculation sheet. 3. Please submit the monthly credit notes and corresponding invoices for the current monitoring period.				
Project participant response				Date : 30/05/2023
1. PP has revised end date of current monitoring period as mentioned at p.1 of the MR. 2. PP has revised value of total electricity exported to the grid in the current monitoring period as mentioned under section 1.1 of the MR. 3. PP has submitted monthly credit notes and corresponding invoices for the current monitoring period to DOE.				
Documentation provided by project participant				
MR Version 1.1				
DOE assessment				Date: 30/07/2023
1. The PP has revised the end date of the current monitoring period at p.1 of the MR, found to be correct. 2. The PP has updated value of total electricity exported to the grid in the current monitoring period under section 1.1 of the MR and found to be correct and consistent with ER sheet. 3. Monthly credit notes and corresponding invoices for the current monitoring period are submitted and found to be appropriate.				
CL #1 is closed.				

Table 1. CAR from this verification

CAR ID	01	Section no.	3.3	Date : 26/05/2023
Description of CAR				

1. Please clarify why the project deviations considered in the current monitoring period are not described in the MR. 2. Please submit the declaration confirming that the GHG Emission reductions or removals generated by the project activity will not be used for compliance with an emission trading program or to meet binding limits on GHG Emissions.	
Project participant response	Date : 30/05/2023
1. PP has revised section 3.2 of monitoring report in line with project deviations considered in the current monitoring period. 2. PP has submitted declaration confirming that the GHG Emission reductions or removals generated by the project activity will not be used for compliance with an emission trading program or to meet binding limits on GHG Emissions.	
Documentation provided by project participant	
<i>MR Version 1.1</i>	
DOE assessment	Date: 30/07/2023
1. The PP has described the project deviations considered in the current monitoring period in the MR and found to be appropriate. 2. The PP has submitted a declaration confirming that the GHG Emission reductions or removals generated by the project activity will not be used for compliance with an emission trading program or to meet binding limits on GHG Emissions.	
CAR #1 is closed.	

CAR ID	02	Section no.	4.1	Date : 26/05/2023
Description of CAR				
MR section 5.4: Justification regarding the difference between actual ERs achieved and estimated ERs is not provided appropriately. Kindly submit the calibration certificates for all the meters installed for the project activity.				
Project participant response				Date : 30/05/2023
1. PP has revised the justification provided in section 5.4 of revised MR regarding the difference between actual ERs achieved and estimated ERs 2. PP has submitted the calibration certificates for all the meters installed for the project activity.				
Documentation provided by project participant				
<i>MR version 1.1</i>				
DOE assessment				Date: 30/07/2023
The PP has provided the justification regarding the difference between actual ERs achieved and estimated ERs in the MR, found to be satisfactory. Calibration certificates for all the meters installed for the project activity are submitted and found to be appropriate. CAR #2 is closed.				

CAR ID	03	Section no.	4.2.2	Date : 26/05/2023
Description of CAR				
Please clarify why the details relevant to stakeholder consultation is not provided under section 2.2 of the MR in line with the MR filling guidelines.				
Project participant response				Date : 30/05/2023
PP has provided details relevant to stakeholder consultation under section 2.2 of revised MR in line with the MR filling guidelines.				
Documentation provided by project participant				
<i>MR version 1.1</i>				
DOE assessment				Date: 30/07/2023

The PP has appropriately described the mechanism for stakeholder consultation under section 2.2 of the MR.
CAR #3 is closed.

APPENDIX 4: COMPETENCY STATEMENTS

According to the sectoral scope / technical area and experience in the sectoral or national business environment, Applus+ Certification has composed a project assessment team in accordance with the appointment rules in the internal Quality Management System of Applus+ Certification.

The composition of audit team shall be approved by the Applus+ Certification ensuring that the required skills are covered by the team. The four qualification levels for team members that are assigned by formal appointment rules are as presented below:

- Lead Auditor (LA).
- Auditor (A) / Auditor in Training (AiT).
- Technical Expert (TE).
- Technical Reviewer (TR).

The sectoral scope / technical area knowledge linked to the applied methodology/ies shall be covered by the assessment team.

Name	Qualification	Coverage of scope	Coverage of technical Area	Financial aspect	Host country Experience	Attendance to the On-Site Assessment
Ravi Kant Soni	Lead Auditor (LA)	Yes (1)	Yes (1.2)	N/A	Yes	Yes
Ravi Kant Soni	Technical Expert (TE)	Yes (1)	Yes (1.2)	N/A	Yes	Yes
Simon Shen	Technical Reviewer (TR)	Yes (1)	Yes (1.2)	N/A	N/A	N/A

Ravi Kant Soni is a certified lead auditor for Lead Auditor ISO 14001:2004&Lead Auditor ISO 14064:2006 GHG Inventory and verification. He has more than 10 years of work experience across Climate Change, Environmental Management & Monitoring, Health & Safety Management, and Statutory Compliance. He was involved in more than 100 CDM validation and verifications activities and Gold Standard, VER projects

as a team leader/technical reviewer / validator / verifier covering the sectoral scope 1 technical area 1.2. He has done Master in Technology (Energy Management) from a premier institute, School of Energy & Environmental Studies, DAVV, Indore (M.P.), India and Bachelor of Engineering (Mechanical Engineering) from M.I.T.S Gwalior Jiwaji University Gwalior, India.

Simon Shen (master's degree in Thermal Energy Engineering, Bachelor Degree in Environmental Engineering) is a Lead Auditor appointed by Applus+ Certification for the GHG project assessment. He is based in Shanghai. He has several years of work experience in environmental protection field. Before he joined Applus+ Certification, he had been worked for TÜV SÜD as a GHG Validator/Verifier and ISO 9001/14001 Lead Auditor for 5.5 years.