



VERIFICATION REPORT FOR
“150 MW GRID CONNECTED WIND
POWER BASED ELECTRICITY
GENERATION PROJECT IN GUJARAT,
INDIA”



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Summary:

LGA Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by BLP Vayu (Project 1) Private Limited to conduct the verification of the project - “150 MW grid connected Wind Power based electricity generation project in Gujarat, India”, VCS ID 292 with regard to the relevant requirements of VCS programme guidelines and standard (VCS standard version 4.1, & VCS program guide version 04.0). Relevant requirements of the UNFCCC for CDM project activities, as well as criteria for consistent project operations, monitoring and reporting has been applied for verification.

The monitoring period covers under this verification are from 01/10/2019 to 30/06/2021(both days included).

The verification includes confirming the implementation of the monitoring plan of the registered VCS PD/01/ (VCS ID 292) and the application of the monitoring methodology as per ACM0002 version 19: “Grid-connected electricity generation from renewable sources”.

The project activity involves electricity generation by the wind power supplying the generated electricity to state

DISCOM i.e. Indian grid. The project being a renewable energy generation activity, leads to reduction in 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.

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.

LGAi 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 "150 MW grid connected Wind Power based electricity generation project in Gujarat, India" during the period 01/10/2019 to 30/06/2021 (including both days) amount to 336,957 tons of CO₂e.

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1 INTRODUCTION

1.1 Objective

LGAI Technological Center S.A. (Applus+ Certification) (Hereafter referred as Applus+ Certification) has been contracted by BLP Vayu (Project 1) Private Limited, to undertake the verification of the renewable energy project titled “150 MW grid connected Wind Power based electricity generation project in Gujarat, India” (VCS ID-292) The verifiers have reviewed the GHG data collected to date for the monitoring period from 01/10/2019 to 30/06/2021 (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 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 100 WTGs (1.5 MW capacity each), making the total installed capacity to be 150 MW at the Kutch region in state of Gujarat.

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 WTGs for the project activity got commissioned between 30/09/2007 to 31/03/2008. All WTGs were commissioned before 31/03/2008. The same was verified against the registered VCS PD/01/ and commissioning certificates/13/.

The emission reductions from the project activity during the period 01/10/2019 – 30/06/2021 (including both days) amount to 336,957 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 second verification under second crediting period (30/09/2017 to 29/09/2027) and description of project activity was also verified by the other VVB (ESPL) during first verification/03/ during second crediting period. 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 second verification under second crediting 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

During the current verification, on-site inspection has not been performed by the assessment team. However, the representatives of the PP were interviewed telephonically on 19/07/2021 i.e., personnel responsible for monitoring of the project activity, data collection and management, and QA/QC procedure. The details of the people interviewed are mentioned in the table below:

Name	Organization	Topic covered
Mr. Abdul Khadir	BLP Vayu (Project 1) Private Limited (Project Representative)	Project implementation, start date as per the VCS requirements. Electricity Generation Records (monthly energy statements, Invoices) Reliability & accuracy of readings considered for emission reduction calculations, Calibration procedure Monitoring and measuring system Collection of measurements Observations of established practices Data Verification of monitoring parameters QA/QC procedures, data management, internal audits to maintain data quality & reliability, maintenance Practices.
Ms. Shraddha Gurlhosur	Executive – Operation	Consideration of monitoring period, monitoring methodology, project

	(Infinite Solutions)	documentation and emission reduction calculations. Monitoring and measuring system Collection of measurements Observations of established practices Data Verification of monitoring parameters QA/QC procedures, data management, internal audits to maintain data quality & reliability, maintenance Practices.
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2.4 Site Inspections

Due to the current situation with the global COVID-19 pandemic scenario physical site inspection is not done for the current verification. Although domestic travel has resumed in India, it is still not recommended until necessary and considering health and safety a top priority, physical site visit for verification audit is not conducted. Furthermore, as per the Section 4.1.2 of the VCS Standard, v4.1, it is not mandatory to conduct the on-site visit by VVB for validation/verification). However, to achieve a reasonable level of assurance, the assessment team has followed the alternative means to substantiate the verification criteria as described in the below table:

Assessment Criteria	Means of verification/source documents	Assessment opinion
Description of project activity	Commissioning certificates /13/ PPA signed for the project activity /14/ VCS verification report for previous monitoring period/03/. Telephonic interview with site personnel on 19/07/2021.	The information's with reference to project capacity, technology, plant equipment's and commissioning dates as provided in section 1.1 of MR are found consistent with the documents.
Compliance of the	Monthly Share certificates	Monthly share certificates and

project implementation with the registered project design document	issued by GETCO/10/. Geographical co-ordinates of project activity verified through Google Map¹ Photograph of equipment's installed at site and screen shots of SCADA system /21/ VCS verification report for previous monitoring period/03/. Telephonic interview with site personnel on 19/07/2021	JMRs issued by DISCOMs (GETCO) indicate the following information: Identification of substation to which the project is connected, serial numbers of energy meters used for measurement, Capacity of project and name of project participant. Location of project is verified through GPS Map and found consistent with registered VCS PD. Photograph of equipment's and screen shots of SCADA system are verified to check the operational status of project activity. Grid connectivity of the project is confirmed through the PPAs. All the information's regarding the project implementation as discuss above are further verified through registered VCS PD and found consistent.
Compliance of the registered monitoring plan with applied methodologies and standardized baselines	Telephonic interview with site personnel on 19/07/2021 PPA signed for the project activity /14/ Monthly Share certificates	The organizational structure, responsibilities and competencies of the personnel confirmed through telephonic interview.

¹ <https://www.google.co.in/maps>

	issued by GETCO/10/. Invoices raised by project developer to state utility /09/	Frequency of monitoring of parameters listed under approved monitoring plan is verified through share certificates /Invoices. The methods used for measuring, recording, storing, aggregating, and reporting the data on monitored parameters are verified through PPA and telephonic conversations with site personnel. Procedure for data uncertainty, emergency preparedness, roles and responsibility, operational and management structure are mentioned in the MR is confirmed through quality policy documents/22/23/24/ and found satisfactory.
Compliance with the calibration frequency requirements for measuring instruments	Calibration certificates of meters installed at site /08/ PPA signed for the project activity /14/ Photograph of energy meters indicating sr. No, accuracy class, make /21/. Central Electricity Authority (Installation and Operation of Meters) Regulations/17/	Calibration frequency and energy meter specifications (Sr. No, make accuracy class) is verified through calibration certificates and further verified through photographs and found consistent. Responsibility of calibration and maintenance of energy meters is solely under control of GUVNL; this is verified through the PPA signed by the individual project developer.

Assessment of data and calculation of emission reductions or net removals	Monthly Share certificates issued by GETCO/10/. Invoices raised by project developer to state utility /09/ CEA CO₂ Baseline Database for the Indian Power Sector /12/ Previous VCS verification report /03/.	Monthly values of monitoring parameter used in ER calculation are verified through share certificates and cross verified with the invoices. Methods, formulae and emission factor for calculating baseline emissions have been followed are in accordance with the applied methodology and as described in the approved VCS verification report /03/.
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It is noteworthy that no sampling plan for verification is applied as 100% data is verified for the current monitoring period. Most of the reference document referred by the assessment team (above table) are either issued /endorsed by the state utility (GUVNL), an external government agency, hence is deemed authentic.

Based on the above assessment it can be concluded that the assessment team has verified sufficient appropriate audit evidences, to reduce audit risk to an acceptably low level as requisite to achieve reasonable level of assurance for the current verification.

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 second verification under second crediting period, 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 has been registered under clean development mechanism (CDM)² with reference 2347/26/ on dated 18/06/2009 . Even though the project has been registered under the CDM, it shall not claim credits for the same GHG emission reduction under VCS and CDM. This was confirmed through a declaration/16/ submitted by PP and hence accepted by 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

The following project deviation identified during the current monitoring period:

- 1) There is change in the number of parameters to be monitored. In accordance with the registered monitoring plan, four parameters are to be monitored, however in actual practice the emission reductions are calculated using the parameter “Electricity supplied to GUVNL” ($EG_{PJ,y}$) only and the value is directly sourced from the monthly share certificate issued by the state utility. Furthermore, as per the applied methodology ACM0002 V 19, the net electricity supplied to the grid ($EG_{PJ,y}$ for this project) is to be monitored. Hence the PP has removed the parameters not used in the ER calculations and considered this change as project deviation in the current monitoring period.
The assessment team has confirmed that the change does not have any impact on applicability of methodology, project design or baseline scenario.
- 2) A deviation regarding the calibration frequency of the meters was identified. As the calibration is under the purview of State utility and not under the control of the Project proponent. The calibration frequency is changed from annual to once in three years as per the notification issued by the state utility (GUVNL), the sole entity responsible for calibration of meters. The CEA Notification 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, the stipulated calibration frequency as once in 3 year is appropriate and in line with the regulation applicable for the project activity.

² <https://cdm.unfccc.int/Projects/DB/BVQI1229917560.71/view?cp=1>

The assessment team is able to confirm that the deviations identified during the current monitoring period are appropriately described and justified in section 3.2 of the monitoring report and the project remains in compliance with the VCS rules. Also, the deviations do not have an impact on the applicability of the methodology, additionally 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 100 WTGs installed at Kutch Region in state of Gujarat. The first and last machine under the project activity was commissioned on 30/09/2007 to 31/03/2008. respectively.

The project activity involves the installation of 150 MW wind power project in the state of Gujarat. This wind power project will reduce 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 the local grid in Gujarat and contribute to climate change mitigation efforts.

It is to be noted that the ownership of the project activity is changed, the project activity was acquired by new project participant BLP Vayu (Project 1) from DLF Limited (Earlier PP) and the revised letter of approval (LoA) is issued by the Indian DNA, indicating the name of the new project participant/26/. The ownership of the project activity is also verified through the revised PPA/14/ signed with the state utility. The Infinite Solutions is the other entity (consultant) is involved in the project activity, this is verified through the communication agreement available at project VCS web page/15/.

The technical specification of the project activity equipment's has been checked through the photographs of all the equipment's/21/ 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/21/, indicating the real-time generation data and hence it is confirmed that the project is fully functioning.

Monitoring procedure:-

The WTGs belongs to project activity are connected to Nani Sindhodi and Suthri substations through various clusters and each cluster have exclusive dedicated metering arrangement at 33kV at project site. Similarly, the WTGs of other project developers (non-project activity) are also connected to separate clusters having exclusive dedicated metering arrangement at 33kV at project site. All the cluster meters (for the project activity and non-project activity) are further connected at 220 kV substations (Nani Sindhodi and Suthri substations).

At both the substations the electricity generated by all the WTGs (project and non-project) is been fed to the Indian grid through separate feeders. Each feeder having separated metering

arrangement and monthly reading is taken by the representatives GEDA/GETCO in the form of JMR.

As verified through the calibration certificates/08/ and recent photographs/21/ that there are two energy meters installed at both sub stations and under control of respective state utility (GUVNL), sealed in presence of both the state utility official & representative of PP/14/. The Joint Meter Reading at both the locations is being taken jointly by the officials of state utility and project participant's representative (O&M contractor) on monthly basis and accordingly monthly share certificate is being prepared/10/.

Net electricity supplied to the grid by each project developer in the wind farm is calculated by the state utility (GEDA) using apportioning procedure, adjusting the transmission loss between metering point at 33kV and the metering points at respective pooling substations. Post apportioning separate "share certificate" for each project developer is issued by the state utility that indicate the net electricity supplied to the grid by the individual project activity/10/.

Values of the parameter "Electricity supplied to GUVNL" i.e., $EG_{PJ, y}$ is directly sourced from the monthly "Share certificates" issued by GETCO/09/ that indicates the share of electricity for project activity received at the respective pooling sub-stations. The measurement results are cross checked with records of invoices and it is in line with applied methodology/11/. Thus, this parameter is considered in emission reduction calculations.

The Share certificates/10/ are prepared and endorsed by GETCO, an external government agency and the PP has no influence in the entire procedure. Hence, the data issued by the state electricity board through the Share certificate is deemed authentic.

The assessment team has verified the latest photographs of project site (including monitoring equipment's)/21/, share certificates/10/ and it is observed that, the WTGs belonging to the project activity are connected to the grid through an appropriate power evacuation system. Appropriate metering system and calculation procedures are transparently described in the monitoring plan to enable accurate determination of emission reductions achieved by the project activity.

The VCS MR/05/ 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 information relating to the project implementation, provided in the Monitoring Report /05/ 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 01/10/2019 to 30/06/2021 (including both days) is 336,957 tCO₂e.

Assessment team concludes the following:

There are no material discrepancies between project implementation and the project description provided in the registered PD/01/.

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.

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/.

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/.

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/.

The project is registered with UNFCCC CDM (UN ref. no. 2347) on 18/06/2009.

The project activity is complying with indicators for sustainable development in the interim approval guidelines for Clean Development Mechanism (CDM) projects from India as discussed under section 1.11 of MR.

In view of the information's as verified above the assessment team is able to 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 14/09/2006³ and further notification number 3067 from MoEF dated 01/12/2009⁴. 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.

4.2.2 Local Stakeholder Consultation

The project activity undergoing second verification and local stakeholder consultation was appropriately conducted prior to validation as a way 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 respective site office/25/, where the local villagers can register their concerns.

The assessment team has checked the photographs of the grievance register maintained at respective 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 share certificates 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

³ <http://envfor.nic.in/legis/eia/so1533.pdf>

⁴ <http://moef.nic.in/downloads/rules-and-regulations/3067.pdf>

and in line with the approved methodology ACM0002 version 19.

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 07.0. 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 14 /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 0.9610 tCO₂/MWh and 0.8644 tCO₂/MWh respectively. Applying the weights, the grid emission factor has been calculated to be 0.9368 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 336,957 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 Share certificates prepared and issued by state utility, they are found to be reliable and authentic.

BLP Vayu (Project 1) 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 19 /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 share certificates /10/ issued by the respective state utility and invoices raised to GUVNL 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: Electricity supplied to GUVNL, $EG_{PJ,y}$ (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.
	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	Energy meters of accuracy class 0.2s are used, (Calibration details of meter is provided separately in this section, under the heading "Calibration of meters")
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring	Yes, accuracy class of meter is in line with registered monitoring plan/01/.

	equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	
	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 untill 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 project deviation considered during the current monitoring period.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes, the calibration is carried out by state utility /08/.
	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 "Share certificates" issued by state utility and found to be consistent. Value of this parameter for the current monitoring period was verified as 359,690 MWh.

	If applicable, has the reported data been cross-checked with other available data?	Yes, the data has been cross-checked with invoices raised by the PP to the state utility /09/
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data ensure correct transfer of data and reporting of emission reductions management. QA/QC processes are in place.
	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., 0.9610 has been verified from PD/01/ and CO₂ Baseline Database for Indian Power Sector by Central Electricity Authority (version 14)/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., 0.8644 has been verified from PD/01/

and CO₂ Baseline Database for Indian Power Sector by Central Electricity Authority (version 14)/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. 0.9368 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 Sr.No	Calibration date	Calibration due date	Calibration delay(Y/N)
Suthari ABT Meter Line 1	GJ-2319-A	18/08/2018	18/08/2021	N
Suthari ABT Meter Line 2	GJ-2320-A	18/08/2018	18/08/2021	N
Nani Sindhodi ABT Meter Line 1	GJ-2317-A	20/08/2018	20/08/2021	N
Nani Sindhodi ABT Meter Line 2	GJ-2318-A	20/08/2018	20/08/2021	N

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 /17/ 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/08/ are mentioned undersection 4.3 of the VCS MR/05/. The CEA Notification No.

502/70/CEA/DP&D dated 17/03/2006/17/ 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.

GHG Calculations:

The emission reduction as per the applied methodology (ACM0002 version 19) 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 19, “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,

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

$$BE_y = 359,690 * 0.9368$$

$$= 336,957 \text{ tCO}_2\text{e (rounded down value)}$$

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 41% 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 CONCLUSION

Applus+ Certification contracted by BLP Vayu (Project 1) Private Limited, to perform the independent verification of the emission reductions for the VCS project activity “150 MW grid connected Wind Power based electricity generation project in Gujarat, India” (VCS ID- 292) in India for the monitoring period 01/10/2019 to 30/06/2021 as reported in the Monitoring Report Version 2.0 dated 21/07/2021. The BLP Vayu (Project 1) 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 on the basis of the baseline and monitoring methodology ACM0002 version 19.0, the monitoring plan contained in the registered VCS PD Version 03, dated 11/11/2019 and VCS guidelines version 4.0 Monitoring Report Version 2.0 dated 21/07/2021 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 01/10/2019 to 30/06/2021 (both days included) are fairly stated in the Monitoring Report

Version 2.0 dated 21/07/2021. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology ACM0002, Version 19, and the VCS standard version 4.1.

Verification period: 01/10/2019 to 30/06/2021 (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)
2019 (01/10/2019 to 31/12/2019)	43,499	0	0	43,499
2020 (01/01/2020 to 31/12/2020)	194,052	0	0	194,052
2021 (01/01/2021 to 30/06/2021)	99,406	0	0	99,406
Total	336,957	0	0	336,957

APPENDIX 1: DOCUMENT REFERENCES

S.No	Title of Document	Version	Date
1.	Registered VCS PD (2 nd Crediting period)	3.0	11/11/2019
2	VCS Validation Report	2.0	27/09/2019
3	Previous Monitoring Report & Verification report for the monitoring period 18/06/2016 to 30/09/2019	3.0	16/04/ 2020 19/04/2020
4	VCS Monitoring Report	1.0	10/07/2021
5	VCS Monitoring Report(Final)	2.0	21/07/2021
6	ER spread sheet	01	10/07/2021
7	ER spread sheet (corresponding to the final monitoring report)	02	21/07/2021
8	Certificates of Calibration for all the meters belongs to project activity	-	18/08/2018 20/08/2018
9	Invoice issued by PP to GUVNL	For the period 01/10/2019 to 30/06/2021	-
10	Monthly share certificates issued by state utility	For the period 01/10/2019 to 30/06/2021	-
11	"Consolidated methodology for grid-connected electricity generation from renewable sources", ACM0002,	19.0.0	-
12	CEA Database	version 14	-
13	Commissioning Certificates for all the WTGs	Commissioned from 30/09/2007 to 31/03/2008	-
14	Power Purchase Agreement between GUVNL and respective project developer involved in the project	-	-
15	VCS webpage for the project, VCS ID 292; https://www.vcsprojectdatabase.org/#/project_details/292	-	-
16	Letter of declaration dated from PP regarding not having created or sought any other form of environmental credit for the same period	-	15/07/2021
17	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.	-	-

S.No	Title of Document	Version	Date
	<u>502/6/2009/DP&D/D-I</u>		
18	State Utility Calibration frequency letter(GUVNL)		10/02/2010
19	VCS Standard	Version 4.1	22/04/2021
20	VCS Program Guide	Version 4.0	19/09/2019
21	Tele meeting with site personnel & consultant Latest photographs of SCADA system, WTGs, transformers and energy meters installed at site	-	Dated 19/07/2021
22	ISO9001:2015 Certificate	-	Valid till 06/12/2022
23	ISO14001:2015 Certificate		Valid till 17/12/2021
24	ISO45001:2018 Certificate		Valid till 25/11/2021
25	Grievance register/suggestion box placed at respective site office Safety Health and Environment Policy	-	-
26	CDM webpage for the project, UN ID 2344; https://cdm.unfccc.int/Projects/DB/BVQI1229917560.71/view?cp=1	-	-

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
CO2	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

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.	4.1	Date : 20/07/2021
Description of CL				
Please submit the following documents: 1. Commissioning certificate 2. PPA signed for the project. 3. Share certificates and Invoice for the monitoring period				
Project participant response				Date : 21/07/2021
The following documents are submitted herewith along with the revised set of documents: 1. Commissioning certificate 2. PPA signed for the project 3. Share certificates and Invoice for the monitoring period				
Documentation provided by project participant				
Commissioning certificate PPA signed for the project Share certificates and Invoice for the monitoring period				
DOE assessment				Date: 25/07/2021
The PP has submitted the requested documents and found to be appropriate. CL# 1 is closed				

Table 3. CAR from this verification

CAR ID	01	Section no.	3.1	Date : 20/07/2021
Description of CAR				
Please submit 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. The project is also registered under CDM, please clarify why the details of registration and issuance records is not provided under section 1.9 of the MR.				
Project participant response				Date : 21/07/2021
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 is submitted herewith. The information related to registration & CERs issued under the CDM is now reported in the monitoring report. Hence, Revised Monitoring version 2.0.				
Documentation provided by project participant				
No Double counting declaration Revised MR Version 2.0				
DOE assessment				Date:
Project proponent 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, found appropriate, hence accepted. The details of registration & CERs issued under CDM has been reported by project proponent in the revised monitoring report. Hence found satisfactory. CAR#1 is closed				

CAR ID	02	Section no.	4.2.2	Date : 20/07/2021
Description of CAR				
Section 2.2 of MR: Please clarify why the mechanism for on-going communication with local stakeholders is not described in line with the guidelines provided under section 3.16.4 of VCS standard 4.1				
Project participant response				Date : 21/07/2021

PP has revised the section 2.2 of MR to transparently explain the mechanism for ongoing communication with local stakeholders in line with section 3.16.4 of VCS standard 4.1.	
Documentation provided by project participant	
Revised MR	
DOE assessment	Date:
The project proponent has appropriately described the mechanism for on-going communication in section 2.2 of the MR. Hence found satisfactory. CAR#2 is closed	

CAR ID	03	Section no.	4.5	Date : 20/07/2021
Description of CAR				
Please clarify why the calibration details of the meters installed at 220 kV sub-stations is not provided in the monitoring report.				
Project participant response				Date : 21/07/2021
The calibration details of meters installed at 220 KV Substation is now reported in the revised monitoring report version 2.0.				
Documentation provided by project participant				
Revised Monitoring Report Version 2.0				
DOE assessment				Date: 25/07/2021
PP has reported the meters installed at 220 KV substation details in the appendix 1 of revised monitoring report. The same has been cross checked from calibration certificates & found ok. CAR#03 Closed				

Table 4. FAR from this verification

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

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	N/A
Ravi Kant Soni	Technical Expert (TE)	Yes (1)	Yes (1.2)	N/A	Yes	N/A
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.