



VERIFICATION REPORT FOR “WIND BASED RENEWABLE ENERGY PROJECT IN GUJARAT”



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

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Prepared By	LGAI Technological Center, S.A. (Applus+ Certification)
Contact	Campus UAB – Ronda de la Font del Carme, s/n 08193 Bellaterra – Barcelona (Spain) Tel.:+34 93 567 20 08 Fax.:+34 93 567 20 01 www.appluscertification.com agustin.calle@applus.com carla.debat@applus.com
Approved By	Juan Sendín Caballero <i>LGAI Technological Center S.A. (Applus+ Certification) B.U. Managing Director</i>
Work Carried Out By	Team Leader and Technical Expert (TA 1.2): Ravi Kant Soni Technical Reviewer: Simon Shen

Summary:

LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by CLP India Private Limited to conduct the verification of the project “Wind based renewable energy project in Gujarat”, VCS ID 537, against VCS Standard Version 4.0.

The verification includes confirming the implementation of the monitoring plan of the registered VCS PD and MR (Project ID 537) and the application of the monitoring methodology as per ACM0002, Version 08 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”. A site visit was conducted to verify the data submitted in the monitoring report.

Monitoring period for the current verification is considered from 01/01/2015 to 11/04/2018. The review of the project design documentation, monitoring report and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and stakeholders have provided Applus+ Certification with sufficient evidence to validate the fulfilment of the stated criteria.

Project activity involves installation of 63 WTGs of capacity 800 kW each that have been supplied by Wind World India Ltd. (WWIL), totalling an installed capacity of 50.4 MW. The Project activity is new facility (Greenfield) and utilizing wind energy to generate electricity and supply it to a NEWNE (Northern, Eastern, Western and North-Eastern) grid of India. Out of the 63 WEGs implemented in this project, one WEG is under a wheeling and banking agreement with Dakshin Gujarat Vij Company Limited (DGVCL) whereas the remaining 62 turbines is selling power to state distribution company under a power purchase agreement.

Since the project activity involves generation of electricity by using the renewable energy source (wind) supplying to the NEWNE grid (Now part of integrated Indian electricity grid). Thus, the project aims to displace electricity produced by fossil fuel power plants harnessing wind energy. Therefore the project reduces greenhouse gas emissions and thereby contributes to 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.

Summary of the verification conclusion:

Applus+ Certification confirms that the project is implemented in accordance with the registered VCS PD & MR. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the 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 based renewable energy project in Gujarat" in India during the period 01/01/2015 – 11/04/2018 (including both days) amount to 277,832 tons of CO₂e.

CONTENTS

1	Introduction	6
1.1	Objective	6
1.2	Scope and Criteria	6
1.3	Level of Assurance	6
1.4	Summary Description of the Project	7
2	Verification Process.....	7
2.1	Method and Criteria	7
2.2	Document Review	8
2.3	Interviews	8
2.4	Site Inspections	8
2.5	Resolution of Findings	9
2.5.1	Forward Action Requests	10
2.6	Eligibility for Validation Activities	10
3	Validation Findings.....	10
3.1	Participation under Other GHG Programs	10
3.2	Methodology Deviations.....	11
3.3	Project Description Deviations.....	11
3.4	Grouped Project	11
4	Verification Findings.....	11
4.1	Project Implementation Status	12
4.2	Safeguards	13
4.2.1	No Net Harm	14
4.2.2	Local Stakeholder Consultation.....	14
4.3	AFOLU-Specific Safeguards	14
4.4	Accuracy of GHG Emission Reduction and Removal Calculations	14
4.5	Quality of Evidence to Determine GHG Emission Reductions and Removals	15
4.6	Non-Permanence Risk Analysis.....	18
5	Verification conclusion	18
	APPENDIX 1: References	20

APPENDIX 2: Competency Statement.....	22
APPENDIX 3: Abbreviations.....	24
APPENDIX 4: Findings Overview	26

1 INTRODUCTION

1.1 Objective

CLP India Private Limited has contracted Applus+ Certification to perform second VCS Verification of the 'Wind based renewable energy project in Gujarat' in India (hereafter called project). This project has already been registered as a VCS project (VCS ID 537). The objective of this verification is a thorough and independent assessment of registered project activities against the applicable VCS requirement by the DOE. The verification process shall determine whether the proposed project activity complies with the requirements of latest VCS guidelines, applicability conditions of the selected methodology, relevant host country regulations and guidance issued by the VCS Board.

1.2 Scope and Criteria

The scope of the verification was the independent and objective review and ex-post determination of the monitored reductions in GHG emissions from "Wind based renewable energy project in Gujarat" The verification of this project was based on the registered project description/01/ & monitoring report /04/ and supporting documents submitted by the project proponent to the verification team. The documents were reviewed against the following guidance and protocols:

VCS Standard: VCS standard Version 04, dated 19/09/2019

Approved baseline and monitoring methodology ACM0002, Version 08, "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".

Validated VCS Project Description, version 3.0 dated 05/08/2009

VCS Program Guide, Version 04, dated 19/09/2019

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

CDM VVS and PS for project activities version 02.0

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

1.3 Level of Assurance

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

1.4 Summary Description of the Project

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

This project falls in the category of renewable energy generation, which replaces electricity generation from the fossil fuel dominated grid. The project activity consists of 63 WTGs with a total installed capacity of 50.4 MW. The WTGs (E-53) of 0.8 MW capacities each have been sourced from Enercon India Limited.

The electricity generated from these wind mills is being supplied to state grid electricity system. Out of the 63 WEGs implemented in this project, one WEG is under a wheeling and banking agreement with Dakshin Gujarat Vij Company Limited (DGVCL) whereas the remaining 62 turbines is selling power to state distribution company under a power purchase agreement. The equivalent amount of electricity would have been generated through fossil fuel fired power plants connected to the Grid resulting in higher GHG emissions in absence of the project activity. Hence generation of power through the project activity contributes to GHG emission reductions. The project activity is already commissioned and it is found to be running satisfactorily.

The WTGs have been commissioned between 12/04/2008 and 12/03/2009. The same has been verified through the commissioning certificates/12/.

All 63 WTGs are fully functioning and the assessment team verified this during the site visit.

The emission reductions from the project activity during the period 01/01/2015 – 11/04/2018 (including both days) amount to 277,832 tonnes of CO₂e.

2 VERIFICATION PROCESS

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

2.1 Method and Criteria

Verification was conducted using Applus+ Certification procedures in line with the requirements specified in the VCS standard Version 4.0 Requirements, CDM M&P, the latest version of the CDM Validation and Verification Standard, and relevant decisions of the COP/MOP and the CDM EB and applying standard auditing techniques. The project activity does not falls under category “grouped projects”, hence any sampling methods not to be employed by the validation/verification body for the verification of GHG emission reductions or removals generated by the project.

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

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

2.2 Document Review

The verification is performed primarily as a document review of the registered VCS PD/01/, previous MR and Verification report and associated documents as stated in details in appendix 1 of this document. The assessment is performed by a verification team referring the Applus+ Certification internal procedures in line with latest VCS requirements. 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 18/11/2019 and the following stakeholders were interviewed.

S N	Name	Organization
1	Prateek Soni	Senior Manager, CLP
2	Meet M Malviya	Site In-charge WWIL
3	Naimesh Vaghamshi	Site Engineer WWIL

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

2.4 Site Inspections

A site visit was undertaken by the assessment team on 18/11/2019 to carry out the following;

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

2.5 Resolution of Findings

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

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

- Non-compliance with the monitoring plan, the methodology or the standardized baseline are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;

- Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

Clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met. All CARs and CLs raised by the Applus+ 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.

All the findings that are raised and communicated to project participant during the verification are included under appendix 4. 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; there were no FARs raised during the validation or previous verification.

2.6 Eligibility for Validation Activities

Not applicable.

3 VALIDATION FINDINGS

Not applicable.

3.1 Participation under Other GHG Programs

The project has been registered under Clean Development Mechanism (CDM) on 13/02/2010 with reference number 2925 /21/. This is verified through the VCS verification report (Report No: 8106640805-10/99) dated 20/10/2010/02/ for the monitoring period 12/04/2008 to 12/02/2010. As verified through the UNFCCC project webpage/21/, crediting period of the project activity under CDM is from 13/02/2010 to 12/02/2020. Applus+ Certification has verified through the project UNFCCC web page/21/ that CERs for the period 13/02/2010 to 31/12/2011 have been already issued under CDM. It is to be noted that the GHG emission reductions for the period from 01/01/2012 to 31/12/2014 are verified under VCS and emission reductions generated in this monitoring period will be claimed under only.

Since the current monitoring period under VCS is considered from 01/01/2015 to 11/04/2018, hence chances of double counting of credits are already ruled out.

This project is also registered under VCS (Project ID-537) with 10 years crediting period from 12/04/2008 to 11/04/2018/01/. As verified through the records available at VCS registry, VERs for the first monitoring period (12/04/2008 to 12/02/2010) are already issued.

Even though the project has been registered under the CDM and crediting periods under both programme (CDM & VCS) overlaps, but credits for the same GHG emission reductions under the VCS and the CDM shall not be claimed. This was confirmed through a declaration/15/ submitted by the PP and hence accepted by the assessment team.

3.2 Methodology Deviations

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

3.3 Project Description Deviations

It is verified through the registered PD that Gujarat Paguthan Energy Corporation Private Limited (GPECL) was the project proponent; however from 03/02/2012 name of the PP has been renamed as CLP India Private Limited (CLPIPL). This is verified through the fresh certificate of incorporation issued by Ministry of Corporate Affairs, Government of India/20/. The project proponent has considered this change as project deviation and applicable for the current monitoring period.

During the current monitoring period, metering arrangement is changed. Earlier there were 5 main meters (billing meters) installed at 4 feeders at Sadodar substation for monitoring of electricity supplied to the grid. However from 11/1/2015 onwards 2 new meters (billing meters) have been installed for monitoring and existing meters acts as check meters. It is to be noted that the installation and calibration of meters is completely under jurisdiction of state utility (DISCOM), hence the project proponent does not have any control on it. Since the metering arrangement is changed and not in accordance with the project description, hence this instance is considered as project deviation in the current monitoring period.

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

3.4 Grouped Project

Not applicable. The project activity is not a grouped project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The project activity consists of 63 WTGs of E-53 Wind World make with individual capacity of 800 kW and aggregates to 50.4 MW in total. During the site visit it was noted all the WTGs are connected to 220kV Sadodar substation.

During the site visit it is observed project WTGs are connected to various clusters at the site for the purpose of metering. Each cluster has dedicated main and the check meter at 33 kV. In all the clusters, only WTGs of project activity are connected and no WTGs of other project developer are there in the clusters. Similarly the WTGs of other project developers (non-project activity) in the wind farm 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 to Sadodar Substation, operated and managed by Wind World India Limited (previously known as Enercon India Limited).

The geo coordinates of all the WTGs belongs to the project activity, were physically verified using Google Map (Ref: <https://www.gps-coordinates.net/>) and were found to be consistent with the same reported in the MR and in the registered PD.

Net electricity supplied to the grid by each project developer in the wind farm is calculated by the state utility (GETCO) using apportioning procedure, adjusting the transmission loss between metering point at 33kV and the metering points at WWIL substation.

Apportioning procedure used in the calculation of net electricity supplied to the grid is correctly described in section 4.3 of the MR/04/ and in section B.7.2 of the CDM registered PDD/06/. This was also verified by interviewing the staff at the sub-station and the officials of the state utility/19/.

During the site visit current status of each WTG was verified by the verification team through the online CMS system maintained at project site and confirmed that all the 63 machines were functional. The WTGs were stopped during the current monitoring period for regular electrical and mechanical maintenance and visual inspection, the same was verified during the site visit. The verification team also confirmed that there are no events or situations encountered during the current monitoring period that may impact the applicability of methodology.

In addition to the physical inspection of the site, the following documents have been reviewed by the assessment team during the site visit to verify the project implementation:

- Commissioning certificates/12/
- Power Purchase Agreements/13/
- Invoices raised by the PP to GUVNL/08/
- Testing certificates of all energy meters/07/

The information relating to the project implementation, provided in the Monitoring Report /04/ is consistent with that stated in the registered PD. The data and variables provided in the monitoring report are the same as stated in the registered PD.

Values of the parameter “Net electricity supplied to the Western grid” i.e. EG_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 WWIL sub-station.

The Share certificates 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.

During the site visit, it was 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 information relating to the project implementation, provided in the Monitoring Report/04/ is consistent with that stated in the registered PD/01/. The data and variables provided in the monitoring report are the same as stated in the registered PD. Total emission reductions achieved under this monitoring period 01/01/2015 to 11/04/2018 (including both days) are 277,832 tCO₂e.

Assessment team concludes the following:

- a) There is 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 is no material discrepancies between the actual monitoring system, and the monitoring plan set out in the project description and the applied methodology/10/.
- 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/15/.
- 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/15/.
- f) The project has been registered under CDM and VCS as well.
- g) The project activity is comply with indicators for sustainable development in the interim approval guidelines for Clean Development Mechanism (CDM) projects from India as discussed under section 1.10 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. As per the notifications issued by Ministry of Environment and Forest dated 01/12/2009 (ref:<http://moef.nic.in/downloads/rules-and-regulations/3067.pdf>), Environmental Impact Assessment for the wind projects is not required to be done.

This project activity will not involve any negative environmental or socio-economic impacts, as the WTGs are installed for generation of power using wind which is a clean source of energy. Hence no mitigation measures are required.

4.2.2 Local Stakeholder Consultation

Not applicable for this verification.

4.3 AFOLU-Specific Safeguards

Not applicable for the project activity. For non-AFOLU projects, this section is not required.

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The project monitoring has been carried in accordance with the registered VCS PD/01/ and the monitoring report/04/. The monitoring plan laid in the registered PD is being followed at the site/19/. The assessment team has verified the information flow (from data generation, aggregation, to recording, calculation and reporting for these parameters including the values) in the MR/04/.

The emission reductions are purely based on the net electricity generated and exported from the machines. PP has provided all the sufficient data for current monitoring period. The values of the parameters EGy used in deriving the GHG emission reduction could be very well correlated between the data sets and ER spreadsheet/05/ provided by PP. The net electricity to the grid (EGy) by the project activity measured by state utility on monthly basis through dedicated metering system installed at respective sites and recorded in the monthly share certificates provided to project proponent. Verification team has verified the monthly values of parameter (EGy) as reported in the ER sheet with the source document (share certificate) and no discrepancy is observed, hence it can be confirmed that no manual transposition errors between data sets have been occurred. The verification of each monitoring parameter has been discussed later in section 4.5.

The calculation method and formulae used in calculating baseline emission is in compliance to the methodology used i.e. ACM0002 Version 08 /10/. Since project activity is a wind power project, leakage emission and project emission has been considered as zero.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

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

Parameter	Net electricity supplied to Western grid (EG _y) (MWh)
Parameter type: Measured/Calculated Measuring /Reading /Recording frequency	The parameter is calculated and recorded on monthly basis, however, the input values used to calculate the value of EG_y are continuously monitored, hourly measured and monthly recorded. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.
Monitoring equipment(s) and calibration details	Energy meters installed at Sadodar substation (220/33 kV and meters at VCB yard (33 kV metering) are used for monitoring of this parameter. Meter identification and calibration details of the energy meters is provided separately in this report, however other aspects of the meters are as following: • The accuracy of the monitoring equipment used to measure the values used to calculate EG_y is 0.2s, which is as per the registered PD/01/ which is as per the norm defined in the PPA/13/. • Calibration frequency of the meters is once in 3 years that is in line with the same outlined in the registered PD/01/. • Calibration is conducted by state utility (GETCO) which is NABL Accredited entity/07/.
Procedure for data generation, aggregation, to recording, calculation and reporting: Value of parameter in the monitoring period:	The WTGs belongs to project activity are connected to Sadodar substation 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 Wind World sub-station.

	At the substation the electricity generated by all the WTGs (project and non-project) is been fed to the grid through separate feeders. Each feeder having separated metering arrangement and monthly reading is taken by the representatives GEDA/GETCO in the presence of WWIL officials in the form of JMR. Monthly values for entire monitoring period are reported in the monitoring report and 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 308,429.40 MWh.
Data cross check process (if applicable)	The monthly reported values were further cross checked with the monthly invoices raised by the PP /07/ to state utility and found to be consistent.
Data management/ QA/QC procedure	Yes, all the stakeholders, namely, the Grid Authority (GETCO), the PP and the WWIL (O&M Contractor), implemented the adequate QA/QC procedures. The data transfer process for the said parameter is as follows: The Joint meter reading at common metering points is taken by the representatives of GETCO in the presence of WWIL officials in the form of JMRs. Monthly “Share Certificates” issued by O&M contractor provide the value of EG_y that is directly used for emission reduction calculations. It is to be noted that all the meters at common feeder are sealed by GETCO and JMR readings taken at meters are solely kept with state utility and not shared with the project proponent.
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 (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. Values of electricity supplied to the grid (EG_y) inserted in the ER sheet were verified with the “Share certificates” provided by the project proponent/09/. Since 100% data was verified, the team can ascertain that the values taken for emission reductions

	calculation are free from material errors.
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Parameters fixed ex ante:

$EF_{OM,y}$; tCO_{2e}/MWh : it is the operating margin emission factor of Western grid(Now part of integrated Indian grid) considered fixed at the time of validation. Value of this parameter reported in the MR/ER sheet as 1.0032 tCO_{2e}/MWh which is consistent with the registered PD/01/.

$EF_{BM,y}$; tCO_{2e}/MWh : it is build margin emission factor of Western grid(Now part of integrated Indian grid) fixed at the time of validation. Value of this parameter reported in the MR/ER sheet as 0.5938 tCO_{2e}/MWh which is consistent with the registered PD/01/.

EF_y ; tCO_{2e}/MWh : it is the combined margin emission factor of Western grid(Now part of integrated Indian grid), considered fixed at the time of validation. Value of this parameter reported in the MR/ER sheet as 0.9008 tCO_{2e}/MWh is consistent with the registered PD/01/.

Calibration of meters:

Meter Location	Meter Sr. No.	Calibration Date	Calibration valid till date	Remark
220 kV Sadodar Substation	GJU04175	06/09/2013	05/09/2016	Old billing meter
	GJU04176	06/09/2013	05/09/2016	Old billing meter
	GJB01470	06/09/2013	05/09/2016	Old billing meter
	KAB11082	06/09/2013	05/09/2016	Old billing meter
	GJ-2458-A	11/11/2015	10/11/2018	New billing meter installed on 11/11/2015
	GJ-2459-A	11/11/2015	10/11/2018	New billing meter installed on 11/11/2015

It is evident from the above table that calibration for all the meters installed at Sadodar substation has been conducted as per the calibration frequency mentioned in the registered PD and no delay in calibration of energy meters is identified during the current monitoring period.

During the site visit the assessment team has interacted with site personnel & physically verified the energy meters, and observed that meters were working satisfactorily. It is to be noted that the PP receives payment, for the electricity supplied to the grid, from the state utility (which is a Government Organization and a 3rd party with respect to this VCS project). This electricity supplied to the grid is obtained using directly measured values at the energy meters. Hence the state utility (GETCO) ensures that the energy meters are in proper working condition, since it has to make payments based on these meter readings.

During the site visit it is verified that earlier there were total 4 main meters installed for the project activity and are of accuracy class 0.2s, used for monitoring, however from 11/11/2015, two new ABT meters (same accuracy class as existing meters) have been installed upstream of existing four meters. All the four existing meters are now works as check meters and new ABT meters are being used for monitoring of electricity supplied to the grid by project activity.

The verification team has checked the latest calibration certificates of energy meters and confirmed that meter was working satisfactorily and error within the permissible limits.

These meters are duly approved, installed, tested, sealed and in the custody of the state utility. The PP has no control over the same. This was verified as discussed in section 4.5.

Meters used to measure the parameters are of accuracy class 0.2s as verified through calibration certificates/07/ and also physical inspection during the site visit. The CEA Notification No. 502/70/CEA/DP&D dated 17/03/2006 and its amendments Notified on 26/06/2010 No. 502/6/2009/DP&D/D-I /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 in the table under section 4.3 of the VCS MR/04/.

The meters have been physically inspected during the site visit and the meter details are found to be consistent with that observed during the site visit. The 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.

4.6 Non-Permanence Risk Analysis

Not applicable for the project activity.

5 VERIFICATION CONCLUSION

LGAI Technological Center, S.A. (also referred to as Applus+ Certification), contracted by Wind World (India) Power Development Pvt Ltd., to perform the independent verification of the emission reductions for the VCS project activity (VCS ID- 537) "Wind based renewable energy project in Gujarat " in India for the monitoring period 01/01/2015- 11/04/2018 as reported

in the Monitoring Report Version 02 dated 26/11/2019. The CLP 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 on the basis of the baseline and monitoring methodology ACM0002 version 08, the monitoring plan contained in the registered VCS PD Version 3.0 and VCS guidelines version 04, Monitoring Report Version 02 dated 26/11/2019 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 01/01/2015 – 11/04/2018 are fairly stated in the Monitoring Report Version 02 dated 26/11/2019. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology ACM0002, Version 08, and the VCS standard.

Verification period: From 01/01/2015 – 11/04/2018 (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)
2015	91,446	0	0	91,446
2016	81,738	0	0	81,738
2017	86,477	0	0	86,477
01/01/2018 to 11/04/2018	18,171	0	0	18,171
Total	277,832	0	0	277,832

APPENDIX 1: References

S.No	Title of Document	Version	Date
1.	Registered VCS PD	3.0	05/08/2009
2.	VCS Validation Report (Report No: 53202408 – 08/68) VCS Verification Report (For the previous monitoring period 12/04/2008 to 12/02/2010)	01 Report No: 8106640805-10/99	14/12/2009 20/10/2010
2.1	CDM verification report rev.01 MP: 01 /01/2011 to 31/12/2011	REPORT NO. 2011-0759	04/07/2012
3.	VCS Monitoring Report	01	10/10/2019
4.	VCS Monitoring Report (Final)	02	26/11/2019
5.	ER spread sheet (corresponding to the final monitoring report)	02	05/10/2019
6.	Registered CDM PDD	3.0	05/08/2009
7	Certificates of Calibration for all the meters belongs to project activity	-	-
8.	Invoice issued by PP	For the period 01/01/2015 to 11/04/2018	-
9.	Monthly Share Certificate issued by GETCO	For the period 01/01/2015 to 11/04/2018	-
10.	ACM0002,“Consolidated baseline methodology for grid-connected electricity generation from renewable sources”.	Version 08	-
11.	CEA Database	version 03	December 2007
12.	Commissioning certificate issued for all the 63	-	-

S.No	Title of Document	Version	Date
	WEGs pertaining to the project activity. The WEGs were commissioned in period from 12 April 2008 (date of commissioning of the first WEG) to 12 March 2009 (date of commissioning of the last WEG).		
13.	Power purchase agreement and wheeling and banking agreement: Wind Energy Purchase Agreement between PP and distribution license dated 14 October 2008 for 49.6 MW. Wheeling and banking agreement between PP and Dakshin Gujarat Vij Company Limited dated 24 September 2008 for 0.8 MW.	-	-
14.	VCS webpage for the project, VCS ID 537; https://www.vcsprojectdatabase.org/#/project_details/537	-	Last accessed on 27/11/2019
15.	Letter of declaration dated from PP regarding not having created or sought any other form of environmental credit for the same period	-	-
16.	Central Electricity Authority (Installation and Operation of Meters) Regulations Notified on 17/03/2006 No. 502/70/CEA/DP&D Amendments Notified on 26/06/2010 No. 502/6/2009/DP&D/D-I	-	-
17.	VCS Standard	Version 4.0	19/09/2019
18.	VCS Program Guide	Version 4.0	19/09/2019
19.	On site assessment –interviews of staff personnel, photographs, physical inspection of monitoring system	-	18/11/2019
20.	Fresh Certificate of Incorporation Consequent upon Change of Name	-	03/02/2012
21.	Project UNFCCC web page: https://cdm.unfccc.int/Projects/DB/RWTUV1250689673.15/view	-	-

APPENDIX 2: Competency Statement

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

The curricula vitae of the DOE's team members are provided below:

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 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 3.5years.

APPENDIX 3: Abbreviations

Abbreviations	Full texts
ABT	Availability Based Tariff
BEF	Baseline Emission Factor
BM	Build Margin
CO2	Carbon dioxide
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CMS	Central Monitoring System
CL	Clarification Request
CMP	Conference of Parties Serving as Meeting of Parties
CAR	Corrective Action Request
DISCOM	Distribution Company
EPC	Engineering, Procurement and Construction
EB	Executive Board
FAR	Forward Action Request
GHG	Green House Gas
GETCO	Gujarat Electricity Transmission Company
GUVNL	Gujarat Urja Vikas Nigam Limited
ISO	International Standards Organization
JVVNL	Jaipur Vidyut Vitran Nigam Limited
JMR	Joint Meter Reading
kW	Kilowatt
kWh	Kilowatt hour
LCS	Local Controller System
MW	Megawatt
MWh	Megawatt-hour
MR	Monitoring Report
MFR	Multi-Function Relay
NEWNE	Northern Eastern Western Northern-Eastern

O&M	Operation and Maintenance
PLF	Plant Load Factor
PPA	Power Purchase Agreement
PD	Project Description
PP	Project Proponent
QA/QC	Quality Assurance and Quality Control
UNFCCC	United Nations Framework Convention on Climate Change
VCS PD	VCS Project Description
VCS	Verified Carbon Standard
VCSA	Verified Carbon Standard Association
VCUs	Verified Carbon Units
WEC	Wind Energy Convertor
WEG	Wind Energy Generator
WTG	Wind Turbine Generator

APPENDIX 4: 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.	3.1	Date : 21/11/2019
Description of CL				
1. 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. 2. The PP is requested to provide comparison between estimated emission reduction and actual achieve emission reduction during current monitoring along with appropriate reason for variation in the monitoring report.				
Project participant response				Date : 26/11/2019
1) 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 now attached with this submission 2) The actual emission reductions achieved during this monitoring period is 20.95% lower than the estimated value as per registered PD which is due to lower wind availability at site. Wind availability is a natural phenomenon which is beyond the control of CLP. same comparison analysis is now included in revised MR				
Documentation provided by project participant				
Revised monitoring report ,version 02, dated 26/11/2019				
Declaration letter				
DOE assessment				Date: 27/11/2019

The 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 to be satisfactory, hence accepted.

Comparison between estimated emission reduction and actual achieve emission reductions during current monitoring along with appropriate reason for variation is provided in the revised MR and found to be satisfactory, hence accepted.

CL #1 is closed.

Table 3. CAR from this verification

CAR ID	01	Section no.	4.1	Date : 21/11/2019
Description of CAR				
As per the registered PD, out of the 63 WEGs implemented, one WEG is under a wheeling and banking agreement with Dakshin Gujarat Vij Company Limited (DGVCL) whereas the remaining 62 turbines sell power to Torrent power limited (distribution company) under a power purchase agreement. Kindly clarify why this information is not provided in the MR.				
Section 2.3.2 of MR: date for name change for project proponent is not consistent with the incorporation certificate.				
Project participant response				Date : 26/11/2019
- Project description has now been updated mentioning the distribution arrangement. - Gujarat Paguthan Energy Corporation Private Limited has been renamed to CLP India Private Limited on 03/02/2012. Same has been updated appropriately in the revised MR				
Documentation provided by project participant				
Revised monitoring report				
DOE assessment				Date: 27/11/2019
Description of project activity is updated in the revised MR; one WEG is under a wheeling and banking agreement with Dakshin Gujarat Vij Company Limited (DGVCL) whereas the remaining 62 turbines sell power to distribution company under a power purchase agreement.				
Project proponent has corrected the date for name change from GPECL to CLPIPL in section 2.3.2 and found consistent with the incorporation certificate.				
CAR #1 is closed.				

CAR ID	02	Section no.	4.2	Date : 21/11/2019
Description of CAR				

Please submit calibration certificates of all the energy meters valid for current monitoring period. Please submit the share certificates issued by the state utility and invoices raised by the PP, in the current monitoring period.	
Project participant response	Date : 26/11/2019
- All the calibration certificates are now submitted with this submission - All the share certificate and invoices are now submitted with this submission	
Documentation provided by project participant	
Calibration certificates Share certificates and invoices	
DOE assessment	Date: 27/11/2019
The PP has submitted the requested documents, found to be appropriate, hence accepted. CAR#2 is closed.	

CAR ID	03	Section no.	4.3	Date : 21/11/2019
Description of CAR				
Current monitoring period Please clarify why the calibration details of energy meters covering the entire monitoring period are not provided in the MR.				
Project participant response				Date : 26/11/2019
Details of calibration report for the entire monitoring period have now been incorporated in the MR.				
Documentation provided by project participant				
Revised monitoring period				
DOE assessment				Date: 27/11/2019
Calibration details are updated in the revised MR, found to be valid and appropriate for the current monitoring period. CAR #3 is closed.				

Table 4. FAR from this validation

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				