



VERIFICATION REPORT FOR “WIND ENERGY PROJECT IN SAMANA, GUJARAT AND SAUNDATTI, KARNATAKA”



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

Project Title	Wind energy project in Samana, Gujarat and Saundatti, Karnataka
Version	02
Report ID	GCEES0720

Report Title	Verification Report for “Wind energy project in Samana, Gujarat and Saundatti,
--------------	--

	Karnataka"
Client	CLP Wind Farms (India) Private Limited
Pages	46
Date of Issue	30/06/2020
Prepared By	LGA 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>LGA Technological Center S.A. (Applus+ Certification) B.U. Managing Director</i>
Work Carried Out By	Team Leader and Technical Expert (TA 1.2): Vivek Ahirwar Technical Reviewer: Simon Shen

Summary:

LGA Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by CLP Wind Farms (India) Private Limited to conduct the verification of the project "Wind energy project in Samana, Gujarat and Saundatti, Karnataka", VCS ID 910, 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 910) and the application of the monitoring methodology as per ACM0002, Version 13.0.0 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".

Monitoring period for the current verification is considered from 01/04/2018 to 30/04/2020. The review of the project design documentation, monitoring report and additional documents related to baseline and monitoring methodology; the subsequent background investigation, telephonic interviews with stakeholders have provided Applus+ Certification with sufficient evidence to validate the fulfilment of the stated criteria.

Project activity involves installation of 67 WTGs of capacity 800 kW each that have been supplied by Wind World India Ltd. (WWIL), totalling an installed capacity of 53.6 MW. Out of 67 WTGs, 12 machines (corresponding to 9.6 MW) are installed at Samana site in Gujarat and 55 machines (corresponding to 44 MW) at Saundatti site in Karnataka. 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) and Southern grid of India. The project proponent has signed the PPA with Gujarat Urja Vikas Nigam Ltd (GUVNL) & Bangalore Electricity Supply Company Limited (BESCOM) separately for respective site.

Since the project activity involves generation of electricity by using the renewable energy source (wind) supplying to the NEWNE grid and Southern grid (Now both are 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 energy project in Samana, Gujarat and Saundatti, Karnataka" in India during the period 01/04/2018 – 30/04/2020 (including both days) amount to 192,532 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.....	8
2.1	Method and Criteria	8
2.2	Document Review	8
2.3	Interviews	8
2.4	Site Inspections	9
2.5	Resolution of Findings	13
2.5.1	Forward Action Requests	13
2.6	Eligibility for Validation Activities	14
3	Validation Findings.....	15
3.1	Participation under Other GHG Programs	15
3.2	Methodology Deviations.....	16
3.3	Project Description Deviations.....	16
3.4	Grouped Project	17
4	Verification Findings.....	18
4.1	Project Implementation Status	18
4.2	Safeguards	20
4.2.1	No Net Harm	20
4.2.2	Local Stakeholder Consultation.....	20
4.3	AFOLU-Specific Safeguards	21
4.4	Accuracy of GHG Emission Reduction and Removal Calculations	21
4.5	Quality of Evidence to Determine GHG Emission Reductions and Removals	21
4.6	Non-Permanence Risk Analysis.....	37
5	Verification conclusion	38
	APPENDIX 1: References	40

APPENDIX 2: Competency Statement.....	43
APPENDIX 3: Abbreviations.....	45
APPENDIX 4: Findings Overview	47

1 INTRODUCTION

1.1 Objective

CLP Wind Farms (India) Private Limited has contracted Applus+ Certification to perform fourth VCS Verification of the 'Wind energy project in Samana, Gujarat and Saundatti, Karnataka' in India (hereafter called project). This project has already been registered as a VCS project (VCS ID 910). 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 energy project in Samana, Gujarat and Saundatti, Karnataka" 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 13.0.0, "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".

Validated VCS Project Description, version 3.0 dated 19/06/2012

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. The details of how the VVB has achieved a reasonable level of assurance while conducting this verification without an onsite assessment are further discussed in Section 2.4 below.

1.4 Summary Description of the Project

The project activity involves electricity generation by wind electric convertors and being supplied to NEWNE grid and Southern 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 includes two sub-projects i.e. installation of 12 WTGs at Samana site in Gujarat and 55 WTGs at Saundatti site in Karnataka.

There are total 67 WTGs are installed in the project activity, with a total installed capacity of 53.6 MW. The WTGs (E-53) of 0.8 MW capacities each have been sourced from Wind World (India) Limited (previously known as Enercon India Limited).

The electricity generated from these wind mills is being supplied to the respective state grid electricity system as per the PPAs signed with relevant state electricity authority/13/. 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 23/06/2010 and 31/01/2011. The same has been verified through the commissioning certificates/12/.

All 63 WTGs are fully functioning and the assessment team verified this through the photographs of online SCADA system submitted by the project proponent/19/.

The emission reductions from the project activity during the period 01/04/2018 – 30/04/2020 (including both days) amount to 192,532 tonnes of CO₂e.

2 VERIFICATION PROCESS

The registered VCS project is undergoing fourth 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
- Telephonic 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

Due to the current situation with the global COVID-19 pandemic scenario and country wide lock down in India, an on-site inspection has not been performed by the assessment team. However, the representatives of the PP and O&M contractors were interviewed telephonically on 20/04/2020 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:

S N	Name	Organization
1	Mr.Sandip Saha	Manager(CLP Wind Farms (India) Private Limited)
2	Mr. Prateek Kumar Soni	CLP Wind Farms (India) Private Limited (Samana

		Site)
3	Ms. Rajalekshmi Manoj	CLP Wind Farms (India) Private Limited (Saundatti Site)

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

As discussed in the above section, physical site inspection is not done for the current 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 /12/ PPA signed with state utility (HESCOM) and /13/ PPA signed with GUVNL/13/ Latest VCS verification report /02/. Telephonic interview on 20/04/2020	The information's with reference to project capacity, technology, plant equipments and commissioning dates as provided in section 1.1 of MR are found consistent with the documents.
Compliance of the project implementation with the registered project design document	Monthly JMRs (Form B) issued by HESCOM /09/ Monthly share certificates	JMRs (Form-B)/Share certificates issued by HESCOM/GETCO indicate the following information:

Assessment Criteria	Means of verification/source documents	Assessment opinion
	issued by GETCO /09/ Geographical co-ordinates (Location of WTGs) verified through Google Map¹ Latest VCS verification report /02/. PPA signed with state utility (HESCOM) and /13/ PPA signed with GUVNL/13/ Telephonic interview on 20/04/2020 Photograph of all the WTGs, energy meters installed at both sites and screen shots of online monitoring system /19/	Commissioning date Date of PPA signed with HESCOM /GUVNL Serial number of energy meters Capacity of project Name of project participant Location of each WTG is verified through Google Map. Daily generation records 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 VCS verification report along with latest and found consistent.
Compliance of the registered monitoring plan with applied methodologies and standardized baselines	Telephonic interview on 20/04/2020 PPA signed with state utility (HESCOM) and /13/	The organizational structure, responsibilities and competencies of the personnel confirmed

¹ <https://www.gps-coordinates.net/>

Assessment Criteria	Means of verification/source documents	Assessment opinion
	PPA signed with GUVNL/13/ Monthly JMRs (Form B) issued by HESCOM /09/ Monthly share certificates issued by GETCO /09/ Invoices raised by project developer to respective state utility/08/ ISO 9001:2008 Certificate/21/ Photograph of all the WTGs, energy meters installed at site and screen shots of online monitoring system /19/	through telephonic interview. Frequency of monitoring of parameters listed under approved monitoring plan is verified through JMRs (Form-B)/Invoices. The methods used for measuring, recording, storing, aggregating, and reporting the data on monitored parameters are verified through PPA and interactions with site personnel. Procedure for data uncertainty, emergency preparedness, roles and responsibility, operational and management structure are mentioned in the MR is confirmed through policy documents and found satisfactory.
Compliance with the calibration frequency requirements for measuring instruments	Calibration certificates of instruments/07/ Monthly JMRs (Form B) issued by BESCO /09/ Monthly share certificates issued by GETCO /09/ PPA signed with state utility (HESCOM) /13/ PPA signed with GUVNL/13/	Calibration frequency and energy meter specifications (Sr.No, make accuracy class) is verified through calibration certificates and further verified through monthly JMRs and found consistent. Responsibility of calibration and maintenance of energy meters is solely under

Assessment Criteria	Means of verification/source documents	Assessment opinion
	Central Electricity Authority(Installation and Operation of Meters) Regulations/16/	control of HESCOM (Saundatti site) and GETCO(Samana site); this is verified through the respective PPA.
Assessment of data and calculation of emission reductions or net removals	Monthly JMRs (Form B) issued by BESCO /09/ Monthly share certificates issued by GETCO /09/ Invoices raised by project developer to respective state utility/08/ CEA CO₂ Baseline Database for the Indian Power Sector /11/ Latest VCS verification report /02/	Monthly values of monitoring parameters used in ER calculation are verified through JMRs/Share certificates and cross verified with the invoices raised by the PP to respective state utility. 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.

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 state utility (HESCOM and GETCO), an external government agency, hence is deemed authentic.

Sub-project located at both the sites are already registered under CDM as a two separate project activity with UNFCCC ref.No -8955 (Samana site) and UNFCCC ref. No- 6794 (Saundatti site). The assessment team has also used documents such as approved CDM validation reports and verification reports (only for UNFCCC ref.No -6794) available publically at UNFCCC project webpage to verify the project implementation. Furthermore the project activity already verified under VCS previously and currently undergoing 4th verification, hence based on the information's available through approved documents (VCS verifications), it can be confirmed that project is implemented and being operated as described in the registered PD.

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 remote 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 fourth 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 activity is registered under Clean Development Mechanism (CDM) as a two separate project activity .The assessment team has verified the record for issuance of credits under the VCS and the CDM, through the UNFCCC project webpage/06/ and VCS webpage and the same is summarized in the below table:

Sub-project location	Project title under CDM	Registration date and crediting period	UNFCCC ref.No
Samana site	Wind based renewable energy project by CLP Wind Farms India Private Limited in Gujarat	24/12/2012 CP: 01/01/2013 to 31/12/2019 (renewable)	8955
Saundatti site	Wind Energy Project in Saundatti, Karnataka	01/08/2012 CP: 24/09/2012 to 23/09/2019 (renewable)	6794

It is to be noted that there are no credits claimed under CDM for the sub-project located at Samana site (UN-8955) after registration, however the for the other part of project (Saundatti site, UN-6794) credits are issued and claimed for the period from 01/01/2013 to 01/10/2016.

The assessment team has verified that during the previous VCS verification period (01/01/2014 to 31/03/2018), generation for the period for saundatti site from 01/01/2013 to 01/10/2016 was not considered, hence chances of double counting of data were appropriately ruled out.

The credit issuance records for the project activity (VCS- 910) is as verified is summarized under the below table:

Sr.No	Monitoring period	Verifying VVB	Status
1	23/06/2010 to 30/06/2012	URS Verification Private Limited (URS)	Issued
2	01/07/2012 to 31/12/2012	URS Verification Private	Issued

		Limited (URS)	
3	01/01/2014 to 31/03/2018	Earthhood Services Private Limited	Issued
4	01/04/2018 to 30/04/2020	Applus+Certification	Undergoing

Since the current monitoring period under VCS is considered from 01/04/2018 to 30/04/2020, hence no double counting of credits is identified. This project is also registered under VCS (Project ID-910) with 10 years crediting period from 23/06/2010 to 22/06/2020/01/. As verified through the records available at VCS registry, VERs for the first, second and third monitoring period are already issued/14/.

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

During the current monitoring period, meters installed at Samana site are not calibrated in accordance with frequency as mentioned in the registered monitoring plan; hence this instance is considered as project deviation. Since the calibration of meter is completely under jurisdiction of state utility (GETCO) and the project proponent is not involved in the procedure in any way, hence the project deviation is considered to be appropriate.

Furthermore during the second monitoring period (from 01/01/2014 to 31/03/2018), project deviations were identified and described as following:

1. At samana site the metering arrangement was 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 11/01/2015 onwards 2 new meters (billing meters) have been installed for monitoring and existing meters acts as check meters.
2. The existing Energy meters installed at Saundatti site were replaced with new meters because the display of old meters was not working accurately.

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 and existing meters were replaced, hence both the instances were considered as project deviations in the previous monitoring period.

The project deviations described above are as per the guidelines provided under section 3.18.2 point 2 of VCS standard version 04.0.

The assessment team able to confirm that the deviations identified during the current and previous monitoring period are 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 involves the implementation of the wind power project with a total installed capacity of 53.6 MW. The project activity includes two sub-projects i.e. installation of 12 WTGs at Samana site in Gujarat and 55 WTGs at Saundatti site in Karnataka. The WTGs have an individual capacity of 800 kW and are supplied by Wind World (India) Limited.

Implementation status of the each location for the project activity is verified as following:

Samana site:

There are total 12 WTGs (9.6 MW) installed in Kalavad, Jamjodhpar, Upleta talukas of Jamnagar and Rajkot district in Gujarat, as verified through the commissioning certificates/12/.As verified through the share certificates issued by the state utility that all the WTGs are connected to 220kV Sadodar substation.

During the telephonic conversation with site personnel, latest photographs/19/ of equipments installed at project site and through the previous verification reports, it is confirmed that the 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 verified using Google Map (Ref: <https://www.gps-coordinates.net/>) and found to be consistent with the same reported in the MR and in the registered PD.

Net electricity supplied to the grid by project WTGs in the wind farm is calculated by the state utility (GETCO) and directly sourced from the share certificates issued by the GETCO.

Saundatti site:

There are 55 WTGs(corresponding to 44 MW) installed at Saundatti site.The WTGs are located at Katamalli, Hooli, Vatnal, Gorbala, Basidoni, Mallapur, Goravanakolla, Haletorgal villages of Belgaum district in Karnataka in India .The commissioning details of WTGs is verified through the commissioning certificates/12/ and found to be consistent with the registered VCS PD.

During the telephonic conversation with site personnel, latest photographs/19/ of equipments installed at project site and through the previous verification reports that the WTGs belongs to the project activity are connected to many VCBs (Vacuum Circuit Breakers) through step-up transformers (400V to 33KV), these transformers are consecutively connected to six feeders and that ultimately lead to two-step up transformers (33KV to 110 KV) via Line 1 and Line 2 at WWIL pooling substation.

The rated capacities of transformers were also indicated at the metering points (Line 1 and Line 2) located in the pooling substation as verified through the latest photographs/19/ and the same was found to be consistent with description given in the registered PD and the monitoring report. At WWIL pooling substation (110KV/33KV) there were two metering points (Transformer 1 and 2) exclusively dedicated to the WTG's of the registered VCS project activity and no other WTG's are connected to the same.

The geo coordinates of all the WTGs belongs to the project activity, were 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 project WTGs in the wind farm is calculated by the state utility (HESCOM) and directly sourced from the JMRs issued by the HESCOM.

Furthermore in order to verify the implementation status, the assessment team has verified the screen shots of live online SCADA monitoring system maintained at both the sites and confirmed that all the 67 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 telephonic interview with site staff.

In addition to the latest photographs of all the equipments installed at the site, the following documents have been reviewed by the assessment team to verify the project implementation:

- Power Purchase Agreements signed with the respective state utility/13/
- Share certificates issued by the GETCO/09/
- JMRs issued by the HESCOM/09/
- Invoices raised by the PP to GUVNL and HESCOM/08/
- Testing certificates of all energy meters installed at both the sites/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.

The Share certificates/JMRs are prepared and endorsed by GETCO/HESCOM, 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/JMR is deemed authentic.

Total emission reductions achieved under this monitoring period 01/04/2018 to 30/04/2020 (including both days) are 192,532 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 1.11 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. As per the notifications issued by Ministry of Environment and Forest dated 01/12/2009, 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

The guidelines regarding the on-going communications with local stakeholders (currently under sections 3.16.2-3.16.3 of VCS standard v04.0) were initially introduced in VCS version 3.6 in 2016. These guidelines were effective immediately, unless evidence of contracting for validation prior to 19 April 2017 is provided. Since the project was registered in 2012 and hence the same is 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. The electricity supplied to the grid by the project activity is directly sourced from JMR reports (Saundatti site) and share certificates (Samana site), this is found to be in line with the requirement provided in the registered VCS PD. The formulas, summation and consistency of the data and parameters are correctly applied in ER spreadsheet.

PP has provided all the sufficient data for current monitoring period. The values of the net electricity supplied to the grid 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 supplied to the grid by the project activity at both the location, measured by state utility on monthly basis through dedicated metering system installed at respective sites and recorded in the monthly share certificates/JMRs provided to project proponent. Verification team has verified the monthly values of the net electricity supplied to the grid as reported in the ER sheet with the source documents (share certificate/JMR) 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 13.0.0 /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.

Parameters: Samana Site

Parameter 1. Quantity of electricity generated by ith WTG at Samana site, EG_{Samana,WTG,i} (MWh)

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The parameter is continuously measure, recorded hourly and reported monthly in line with the registered monitoring plan.
	Is Measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. In line with the approved monitoring plan, this parameter is recorded on monthly basis in the monthly generation reports (MGR) issued by O&M contractor/9.1/.
	Monitoring equipment	This parameter is measured through LCS meter (controller panel meter) integrated with WTG and monitored via online monitoring system (SCADA).
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	The LCS meter at each WTG is a microprocessor based multi-function relay (MFR) which is highly accurate and it monitors the electricity generated by each WTG. The relay runs software to sample inputs and numerically processes the information. It is therefore highly unlikely for this relay to wrongly read/record data.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes the accuracy of LCS meter is valid for the entire measuring range or do different accuracy levels apply to different measuring ranges.
	Calibration frequency /interval:	It is not possible to calibrate controller because it is integral part of WTG cannot be removed during operation. Letter of undertaking from WTG supplier/22/ regarding the calibration of controller is provided by PP and same has been confirmed through telephonic interview of site personnel.
	Is the calibration interval in line with the monitoring plan	Not applicable

	and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?																
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Not applicable															
	How were the values in the monitoring report verified?	The data is generated and recorded in the SCADA system automatically. The O&M contractor, based on recorded data in the SCADA system, prepares the daily generation reports. These daily generation reports are used to prepare monthly generation reports. The monitoring procedures were sufficiently robust to enable accurate transmission of data. Cumulative value of $EG_{\text{Samana,WTG,I}}$ for each vintage period is reported in the monitoring report, however monthly values are reported in the ER calculation sheet. The monthly values were verified from the monthly generation reports/9.1/ issued by O&M Contractor and found to be consistent. Vintage wise Value of this parameter for the current monitoring period is verified as: <table><tr><th>Year</th><th>Vintage period</th><th>Value (MWh)</th></tr><tr><td>2018</td><td>01/04/2018 to 31/12/2018</td><td>17,791.15</td></tr><tr><td>2019</td><td>01/01/2019 to 31/12/2019</td><td>22,575.66</td></tr><tr><td>2020</td><td>01/01/2020 to 30/04/2020</td><td>6,144.79</td></tr><tr><td colspan="2">Total (01/04/2018 to 30/06/2020)</td><td>46,511.60</td></tr></table>	Year	Vintage period	Value (MWh)	2018	01/04/2018 to 31/12/2018	17,791.15	2019	01/01/2019 to 31/12/2019	22,575.66	2020	01/01/2020 to 30/04/2020	6,144.79	Total (01/04/2018 to 30/06/2020)		46,511.60
Year	Vintage period	Value (MWh)															
2018	01/04/2018 to 31/12/2018	17,791.15															
2019	01/01/2019 to 31/12/2019	22,575.66															
2020	01/01/2020 to 30/04/2020	6,144.79															
Total (01/04/2018 to 30/06/2020)		46,511.60															
	If applicable, has the reported data been cross-checked with	Not applicable, as the generation recorded at the LCS meter is cross verified by the energy calculated by inverting system installed in the WTGs.															

	other available data?	
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Grid Authority (GETCO), and the WWIL (O&M Contractor), implemented the adequate QA/QC procedures.
	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?	No such issues.
Findings	No finding was raised	
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.	

Parameter 2: Quantity of net electricity generation supplied by the project activity to the NEWNE grid in year y , $EG_{NEWNE, facility, y}$ (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 $EG_{NEWNE, facility, y}$ are continuously monitored, hourly measured and monthly recorded.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes /	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.

	No)	
	Monitoring equipment	The WTGs belongs to project activity are connected to common feeder where WTGs of other project developers (non-project activity) are also connected.. The electricity generated by all the WTGs (project and non-project) is been fed to the NEWNE grid and monthly generation of all the WTGs at common feeder is recorded by the representatives state utility (SLDC) in the presence of CLPWFPL officials in the form of JMR. Based on the data recorded in the JMRs and generation recorded at individual WTGs, electricity supplied to the grid by the project activity is calculated by state utility, using the apportioning procedure and share certificate for each project developer is prepared.
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	The accuracy of the monitoring equipment used to measure the values used to calculate $EG_{NEWNE, facility, y}$ is 0.2s, which is as per the registered PD/01/ which is as per the norm defined in the PPA/13/.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring	Yes. The accuracy of monitoring equipment's is valid for the entire range.

	ranges?	
	Calibration frequency /interval:	Calibration frequency of the meters is once in 3 years.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes. The calibration frequency is in line with the monitoring plan as outlined in the registered PD/01/ (P.38).
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes the calibration is conducted by state utility (GETCO) which is NABL Accredited entity/07/.
	Is(are) calibration(s) valid for the whole reporting period?	During the current monitoring period delay in calibration of meters is indentified and the PP has adjusted the values of this parameter, applying the error factor for the delayed period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.
	How were the values in the monitoring report verified?	Cumulative value of $EG_{NEWNE, facility, y}$ for each vintage period is reported in the monitoring report, however monthly values are reported in the ER calculation sheet. The monthly values were verified from the monthly share certificates/09/ issued by state utility and

		found to be consistent. Vintage wise Value of this parameter for the current monitoring period is verified as:															
		<table><tr><th>Year</th><th>Vintage period</th><th>Value (MWh)</th></tr><tr><td>2018</td><td>01/04/2018 to 31/12/2018</td><td>17,305.82</td></tr><tr><td>2019</td><td>01/01/2019 to 31/12/2019</td><td>21,928.66</td></tr><tr><td>2020</td><td>01/01/2020 to 30/04/2020</td><td>5,997.87</td></tr><tr><td colspan="2">Total (01/04/2018 to 30/06/2020)</td><td>45,232.35</td></tr></table>	Year	Vintage period	Value (MWh)	2018	01/04/2018 to 31/12/2018	17,305.82	2019	01/01/2019 to 31/12/2019	21,928.66	2020	01/01/2020 to 30/04/2020	5,997.87	Total (01/04/2018 to 30/06/2020)		45,232.35
	Year	Vintage period	Value (MWh)														
	2018	01/04/2018 to 31/12/2018	17,305.82														
	2019	01/01/2019 to 31/12/2019	21,928.66														
2020	01/01/2020 to 30/04/2020	5,997.87															
Total (01/04/2018 to 30/06/2020)		45,232.35															
If applicable, has the reported data been cross-checked with other available data?	The monthly reported values were further cross checked with the monthly invoices raised by the PP /08/ to state utility and found to be consistent.																
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, 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 $EG_{NEWNE, facility, y}$, 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 PP.																
In case project participants have temporarily not monitored the parameter, has either i) a deviation been	No such issues.																

	approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	
Findings	CL #1, CAR #1, CAR #2 and CAR #3 was 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.	

Parameters :Saundatti Site

Parameter 1: Quantity of electricity generated by ith WTG at Saundatti site, EG_{Saundatti,WTG,i} (MWh)

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The parameter is continuously measure, recorded hourly and reported monthly in line with the registered monitoring plan.
	Is Measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. In line with the approved monitoring plan, this parameter is recorded on monthly basis in the monthly generation reports (MGR) issued by O&M contractor/9.1/.
	Monitoring equipment	This parameter is measured through LCS meter (controller panel meter) integrated with WTG and monitored via online monitoring system (SCADA).
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment	The LCS meter at each WTG is a microprocessor based multi-function relay (MFR) which is highly accurate and it monitors the electricity generated by each WTG. The relay runs software to sample inputs and numerically processes the information. It is therefore highly unlikely for this relay to wrongly read/record data.

	comply with local/national standards, or as per the manufacturer's specification?	
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes the accuracy of LCS meter is valid for the entire measuring range or do different accuracy levels apply to different measuring ranges.
	Calibration frequency /interval:	It is not possible to calibrate controller because it is integral part of WTG cannot be removed during operation. Letter of undertaking from WTG supplier/22/ regarding the calibration of controller is provided by PP and same has been confirmed through telephonic interview of site personnel.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Not applicable
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Not applicable
	How were the values in the monitoring report verified?	The data is generated and recorded in the SCADA system automatically. The O&M contractor, based on recorded data in the SCADA system, prepares the daily generation reports. These daily generation reports are used to prepare monthly generation reports. The monitoring procedures were sufficiently robust to enable accurate transmission of data. Cumulative value of $EG_{Saundatti,WTG,I}$ for each vintage period is reported in the monitoring report, however monthly values are reported in the ER calculation

		sheet. The monthly values were verified from the monthly generation reports/9.1/ issued by O&M Contractor and found to be consistent. Vintage wise Value of this parameter for the current monitoring period is verified as:		
		Year	Vintage period	Value (MWh)
	2018	01/04/2018 to 31/12/2018		70,435.45
	2019	01/01/2019 to 31/12/2019		85,564.10
	2020	01/01/2020 to 30/04/2020		15,078.57
	Total (01/04/2018 to 30/06/2020)		171,078.11	
	If applicable, has the reported data been cross-checked with other available data?	Not applicable, as the generation recorded at the LCS meter is cross verified by the energy calculated by inverting system installed in the WTGs.		
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Grid Authority (HESCOM), and the WWIL (O&M Contractor), implemented the adequate QA/QC procedures.		
	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?	No such issues.		
Findings		No finding was raised		
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.		

Parameter 2: Quantity of net electricity generation supplied by the project activity to the Southern grid in year y, $EG_{\text{South, facility, y}}$ (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 $EG_{\text{South, facility, y}}$ 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 reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.
	Monitoring equipment	Electricity exported to the distribution licensee is monitored through the main and check meter of 0.2s accuracy class. The main meter and check meter has been kept under custody of state utility. The WTGs belongs to project activity are connected to common feeder where WTGs of other project developers (non-project activity) are also connected.. The electricity generated by all the WTGs (project and non-project) is been fed to the NEWNE grid and monthly generation of all the WTGs at common feeder is recorded by the representatives state utility in the presence of CLPWFPL officials in the form of JMR. Based on the data recorded at each monitoring point and generation recorded at individual WTGs, electricity supplied to the grid by the project activity is calculated by state utility, using the apportioning procedure and JMR for each project developer is prepared.

	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	The accuracy of the monitoring equipment used to measure the values used to calculate $EG_{\text{South, facility, y}}$ is 0.2s, which is as per the registered PD/01/ which is as per the norm defined in the PPA/13/.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy of monitoring equipment's is valid for the entire range.
	Calibration frequency /interval:	Calibration frequency of the meters is once in 3 years.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes. The calibration frequency is in line with the monitoring plan as outlined in the registered PD/01/ (P.38).

	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes the calibration is conducted by state utility (KPTCL) which is NABL Accredited entity/07/.															
	Is(are) calibration(s) valid for the whole reporting period?	Yes calibration of energy meters is valid for entire monitoring period.															
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.															
	How were the values in the monitoring report verified?	Cumulative value of $EG_{South, facility, y}$ for each vintage period is reported in the monitoring report, however monthly values are reported in the ER calculation sheet. The monthly values were verified from the monthly JMRs/09/ issued by state utility and found to be consistent. Vintage wise Value of this parameter for the current monitoring period is verified as: <table><tr><th>Year</th><th>Vintage period</th><th>Value (MWh)</th></tr><tr><td>2018</td><td>01/04/2018 to 31/12/2018</td><td>68,704.93</td></tr><tr><td>2019</td><td>01/01/2019 to 31/12/2019</td><td>83,302.06</td></tr><tr><td>2020</td><td>01/01/2020 to 30/04/2020</td><td>14,609.77</td></tr><tr><td colspan="2">Total (01/04/2018 to 30/06/2020)</td><td>166,616.76</td></tr></table>	Year	Vintage period	Value (MWh)	2018	01/04/2018 to 31/12/2018	68,704.93	2019	01/01/2019 to 31/12/2019	83,302.06	2020	01/01/2020 to 30/04/2020	14,609.77	Total (01/04/2018 to 30/06/2020)		166,616.76
	Year	Vintage period	Value (MWh)														
2018	01/04/2018 to 31/12/2018	68,704.93															
2019	01/01/2019 to 31/12/2019	83,302.06															
2020	01/01/2020 to 30/04/2020	14,609.77															
Total (01/04/2018 to 30/06/2020)		166,616.76															
If applicable, has the reported data been cross-checked with other available data?	The monthly reported values were further cross checked with the monthly invoices raised by the PP /08/ to state utility and found to be consistent.																

	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, all the stakeholders, namely, the Grid Authority (HESCOM), 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 HESCOM in the presence of WWIL officials in the form of JMRs. Monthly “JMRs” issued by HESCOM provide the value of $EG_{South, facility, y}$, that is directly used for emission reduction calculations. It is to be noted that all the meters at common feeder are sealed by the state utility.
	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?	No such issues.
Findings	CL #1, CAR #1, CAR #2 and CAR #3 was 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.	

Parameters fixed ex ante:

Samana Site:

$EF_{NEWNE,grid,OM,y}$; tCO_{2e}/MWh : it is the operating margin emission factor of NEWNE 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 0.9842 tCO_{2e}/MWh which is consistent with the registered PD/01/.

$EF_{NEWNE,grid,BM,y}$; tCO_{2e}/MWh : it is build margin emission factor of NEWNE grid(Now part of integrated Indian grid) fixed at the time of validation. Value of this parameter reported in the MR/ER sheet as 0.8587 tCO_{2e}/MWh which is consistent with the registered PD/01/.

$EF_{NEWNE,grid,CM,y}$; tCO_{2e}/MWh : it is the combined margin emission factor of NEWNE 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 0.9528 tCO_{2e}/MWh is consistent with the registered PD/01/.

Saundatti Site:

$EF_{South,grid,OM,y}$; tCO_{2e}/MWh : it is the operating margin emission factor of Southern 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 0.9513 tCO_{2e}/MWh which is consistent with the registered PD/01/.

$EF_{South,grid,BM,y}$; tCO_{2e}/MWh : it is build margin emission factor of Southern grid(Now part of integrated Indian grid) fixed at the time of validation. Value of this parameter reported in the MR/ER sheet as 0.7339 tCO_{2e}/MWh which is consistent with the registered PD/01/.

$EF_{South,grid,CM,y}$; tCO_{2e}/MWh : it is the combined margin emission factor of Southern 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 0.8969 tCO_{2e}/MWh is consistent with the registered PD/01/.

Calibration of meters:

Samana Site :

Meter Location	Meter Sr. No.	Calibration Date	Calibration delayed?
220 kV Sadodar Substation	GJ-2458-A	11/11/2015 and 26/12/2019	Y
	GJ-2459-A	11/11/2015 and 26/12/2019	Y

Saundatti Site: 110/33 kV WWIL Substation

Meter Location	Meter Sr. No.	Calibration Date	Calibration delayed?
Transformer-1	Main meter: 14194656	10/04/2015, 16/06/2017 and 10/01/2019	N
	Check Meter: 14194675		
Transformer-2	Main meter: 14194483	15/04/2015, 16/06/2017 and 10/01/2019	N
	Check Meter: 14194487		

It is evident from the above table that calibration for all the meters installed at Sadodar substation has not been conducted as per the calibration frequency mentioned in the registered PD and delay in calibration of energy meters is identified. However the meters installed at Saundatti site were calibrated in line with the frequency as indicated in the registered monitoring plan, hence no calibration delay is identified during the current monitoring period.

Assessment of delay in calibration of meters (Samana site):

Calibration of meters was conducted 11/11/2015 and next calibration was due on 11/11/2018, but the same conducted on 26/12/2019, hence delay period from 11/11/2018 to 25/12/2019 is considered in the current monitoring period.

The assessment team has verified the calibration certificates of meters and confirmed that meters were working satisfactory and within acceptable limits of accuracy. In order to address the delay in calibration in the monitoring period and the PP has applied factor (-0.2%) to the values of net electricity supplied to the grid from 01/01/2018 to 31/12/2019. It is worthy to note that the billing cycle for the project activity starts from 1st day and ends on last day of the every month, hence the error factor is applied to the parameter $EG_{\text{NEWNE, facility, y}}$ from 01/01/2018 to 31/12/2019 during the current monitoring period. This approach is found to be in accordance with the guidelines outlined under paragraph 366(a) of VVS for PAs version 02.0, hence accepted.

During the con-call the assessment team has interacted with site personnel & verified the latest photographs of energy meters/19/, and observed that meters details provided in the MR are consistent with the same mentioned in the calibration certificates. 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.

These meters installed at both the sites are duly approved, installed, tested, sealed and in the custody of the respective 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 through the latest photographs of meters indicating the technical specification. 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 Appendix-1 of the VCS MR/04/.

The CEA Notification No. 502/70/CEA/DP&D dated 17/03/2006/16/ which is considered as national standard mentions that "All interface meters shall be tested at least once in five years." Hence, the stipulated calibration frequency once in 3 years is appropriate.

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

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 CLP Wind Farms (India) Private Limited, to perform the independent verification of the emission reductions for the VCS project activity (VCS ID- 910) “Wind energy project in Samana, Gujarat and Saundatti, Karnataka ” in India for the monitoring period 01/04/2018– 30/04/2020 as reported in the Monitoring Report Version 02 dated 02/06/2020. The CLP Wind Farms (India) Private Limited is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity.

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

Applus+ Certification commenced the verification on the basis of the baseline and monitoring methodology ACM0002 version 13.0.0, the monitoring plan contained in the registered VCS PD Version 3.0, dated 19/06/2012 and VCS guidelines version 04, Monitoring Report Version 02 dated 02/06/2020 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 01/04/2018 – 30/04/2020 are fairly stated in the Monitoring Report Version 02 dated 02/06/2020. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology ACM0002, Version 13.0.0, and the VCS standard.

Verification period: From 01/04/2018 – 30/04/2020 (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)
2018 (01/04/2018 to 31/12/2018)	78,109	0	0	78,109
2019(01/01/2019 to 31/12/2019)	95,606	0	0	86,477
2020 (01/01/2020 to 30/04/2020)	18,817	0	0	18,817

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)
Total	192,532	0	0	192,532

APPENDIX 1: References

S.No	Title of Document	Version	Date
1.	Registered VCS PD	03	19/06/2012
2.	VCS Validation Report (Report No: URS/12/VCS/01) VCS Verification Report (For the previous monitoring period 01/01/2014 to 31/03/2018)	03 Version 01	22/06/2012 23/05/2018
3.	VCS Monitoring Report	01	24/05/2020
4.	VCS Monitoring Report (Final)	02	02/06/2020
5.	ER spread sheet (corresponding to the final monitoring report)	02	02/06/2020
6.	Project UNFCCC web page: Samana site: Project title: Wind based renewable energy project by CLP Wind Farms India Private Limited in Gujarat UNFCCC ref.No-8955 (https://cdm.unfccc.int/Projects/DB/RWTUV1355987533.33/view) Saundatti site: Project title: Wind Energy Project in Saundatti, Karnataka UNFCCC Ref.No-6794 (https://cdm.unfccc.int/Projects/DB/BVQI1343049611.03/view)	-	-
7	Certificates of Calibration for all the meters belongs to project activity	-	-
8.	Invoice issued by PP to the respective state utility	For the period 01/04/2018 to 30/04/2020	-

S.No	Title of Document	Version	Date
9.	Monthly Share Certificate issued by GETCO (Samana site) Monthly JMRs issued by the HESCOM (Saundatti site)	For the period 01/04/2018 to 30/04/2020	-
9.1	Monthly generation reports (MGR) issued by O&M contractor	For the period 01/04/2018 to 30/04/2020	-
10.	ACM0002, "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".	Version 13.0.0	-
11.	CEA Database	version 07	-
12.	Commissioning certificate issued for all the WEGs pertaining to the project activity (both sites)	-	-
13.	Power Purchase Agreement between M/s. CLP Wind Farms(India) Pvt. Ltd. And Bangalore Electricity Supply Company Limited (BESCOM) Power Purchase Agreement between M/s. CLP Wind Farms (India) Pvt. Ltd. and Gujarat Urja Vikas Nigam Limited (GUVNL)	-	Dated 13/08/2008. Dated 22/02/2010
14.	VCS webpage for the project, VCS ID 910; https://registry.verra.org/app/projectDetail/VCS/910	-	Last accessed on 12/06/2020
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.	Latest photographs of SCADA system, WTGs,	-	-

S.No	Title of Document	Version	Date
	transformers and energy meters installed at site		
20.	Fresh Certificate of Incorporation Consequent upon Change of Name from Enercon (India) Limited to Wind World (India) Limited	-	01/01/2013
21.	• ISO 9001:2008 Certification for WWIL • Quality Policy WWIL • SHE (Safety, Health and Environment) Policy WWIL	-	-
22	Declaration provided by the WWIL regarding calibration of LCS meter	-	-

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
Vivek Ahirwar	Lead Auditor (LA)	Yes (1)	Yes (1.2)	N/A	Yes	NO
Vivek Ahirwar	Technical Expert (TE)	Yes (1)	Yes (1.2)	N/A	Yes	NO
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:

Vivek Kumar Ahirwar is a BEE-Certified Energy Auditor by Govt of India with over eight years of relevant experience in energy efficiency, energy audit, thermal and electrical energy generation technology from renewable source and energy conservation in energy intensive industries, designated consumers and commercial buildings, implementation of energy conservation building codes, research, process and green building projects. He is a certified lead auditor for ISO 14001 EMS and 14064. He has experience under various categories of projects stating from renewable to waste to supercritical projects and WCD. He has successfully audited more than 100 GHG (CDM/VCS/GS) projects in different states across the India. He has done Mater 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 Govt. Engineering college, Rewa, RGPV, 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
BESCOM	Bangalore Electricity Supply Company
BM	Build Margin
CO ₂	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
HESCOM	Hubli Electricity Supply Company
ISO	International Standards Organization
JMR	Joint Meter Reading
KPTCL	Karnataka Power Transport Company Limited
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.	2.2	Date : 30/05/2020
Description of CL				
Please submit the following documents: - Monthly Form-B issued by BESCO - Monthly share certificates issued by GEDA - Monthly invoices raised to the respective state utility in the current monitoring period. - PPA signed for project activity - Commissioning certificates of all WTGs. - 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.				
Project participant response				Date : 02/06/2020
- Monthly Form-B issued by BESCO are now being submitted for assessment - Monthly share certificates issued by GEDA are now being submitted for assessment - Monthly invoices raised to state utility are now being submitted for assessment - PPA signed for project activity are now being submitted for assessment - Commissioning certificates of all WTGs are now being submitted for assessment - 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 being submitted for assessment				
Documentation provided by project participant				
- Monthly B-forms and share certificates - Monthly invoices raised by CLP to state utility - Copy of Power Purchase Agreement - Commissioning certificates of all WTGs - Declaration of confirmation				
DOE assessment				Date: 10/06/2020
The project proponent has submitted the share certificates, JMRs, PPAs and commissioning certificates of WTGs involved in the project activity, found to be appropriate, hence accepted. 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 provided and found to be satisfactory. CL #1 is closed.				

Table 3. CAR from this verification

CAR ID	01	Section no.	4.2	Date : 30/05/2020
Description of CAR				
Please clarify why the information regarding the mechanism for on-going communication with local stakeholders is not provided in section 2.2 of the MR.				
Project participant response				Date : 02/06/2020
This project was registered in 2012 and these guidelines (<i>Introduced requirements for conducting local stakeholder consultations (Sections 3.17.2-3.17.4). Effective immediately, unless evidence of contracting for validation prior to 19 April 2017 is provided</i>) were introduced in VCS version 3.6 in 2016. Thus, same is not applicable to this project and we are using same text for our all verification reports. Further, in our several previous verifications from registration to till date (irrespective of VERRA has conducted any the review or not), we have not received any comment from VERRA pertain to this point. This also reconfirmed our position to address this point.				
Documentation provided by project participant				
Revised MR				
DOE assessment				Date: 10/06/2020
This project was registered in 2012 and these guidelines (<i>Introduced requirements for conducting local stakeholder consultations (Sections 3.17.2-3.17.4, effective immediately, unless evidence of contracting for validation prior to 19 April 2017 is provided</i>) were introduced in VCS version 3.6 in year 2016. Thus, same is not applicable to this project. CAR #1 is closed.				

CAR ID	02	Section no.	3.3	Date : 30/05/2020
Description of CAR				
Section 2.3.2 of MR: It is not clear whether any project deviation considered in the current monitoring period or not. Please clarify why latest version of VCS standard is not referred while describing the project deviations in the MR.				
Project participant response				Date : 02/06/2020
In this verification no deviation has been considered. The deviations mentioned in the monitoring report are belongs to previous verification. Same has been mentioned for better clarify. Latest version of VCS standard has been updated appropriately.				
Documentation provided by project participant				
Revised monitoring report				
DOE assessment				Date: 10/06/2020
There are no project deviations identified during the current monitoring period. In the revised MR, the PP has described the project deviations considered in previous monitoring periods appropriately, hence accepted. CAR #2 is closed.				

CAR ID	03	Section no.	4.5	Date : 30/05/2020
Description of CAR				

As per the information provided in section 4.3 of the MR, it is observed that calibration of meters is not conducted in line with the frequency as mentioned in the registered PD. Kindly clarify how the delay in calibration is addressed in the current monitoring period. Also clarify why the instance delay in calibration is not considered as project deviation in the current monitoring period. There is no calibration details provided under Appendix-1, please clarify.	
Project participant response	Date : 02/06/2020
There was no delay in calibration in Saundatti wind site. All the billing meters in Saundatti site have been calibrated appropriately. However, calibration of billing meters in Samana-II site has been delayed. Thus, emission reduction calculation has been updated appropriately. Details of calibration are now mentioned in Appendix-1	
Documentation provided by project participant	
Revised monitoring report Calibration certificates for Samana-II and Saundatti wind sites	
DOE assessment	Date: 10/06/2020
As verified through the calibration certificates that meters installed at Saundatti site are calibrated in line with the frequency as outlined under registered monitoring plan, however delay in calibration of meters installed at Samana site is identified in the current monitoring period. The project proponent has addressed the delay in calibration, applying error factor to the measured values for the delayed period. Also this instance is considered as project deviation and the same is found to be in accordance with the guidelines provided under section 3.18.2 of VVS standard v 04.0, hence accepted. 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				