

**GOLD STANDARD FOR THE GLOBAL GOALS (GS4GG)
REPORT
-
VERIFICATION**



Project Title:	21 MW Wind Energy Project by Shree Cement Limited
Monitoring Period:	28/03/2018 to 31/10/2019 (inclusive of both dates)
GS project ID:	GS 6999
Internal ID:	10318
Customer:	Shree Cement Limited
Date:	06/06/2020
Revision:	00

SUMMARY			
Reference No.	Date (first version)	Version No.	Date (last version)
GS 6999	04/06/2020	01	06/06/2020
GS4GG Verification			
GS4GG Certified Product (sought):		GHG Emission Reductions	
GS4GG SDG Impact Statement (sought):		Impact Certification	
General Information			
Client	Shree Cement Limited		
Project Title	21 MW Wind Energy Project by Shree Cement Limited		
Project Participants	Shree Cement Limited		
Project Location	The project activity is located in Kushtagi Wind Farm in Koppal district, Karnataka, India. The project activity consists of ten 2.1 MW wind turbines in the district of Koppal in the state of Karnataka, India		
Contact Person	Site in-charge- H.G Ramesh (PP representative)		
Monitoring Period:	28/03/2018 to 31/10/2019 (inclusive of both dates)		
GS4GG Version: GS4GG Principles and Requirements 1.2 GS4GG Activity Requirements: RE Activity Requirements Applied Methodology as per the registered GS4GG PDD, Version: ACM0002 "Grid-connected electricity generation from renewable sources" Version 20.0 Current Methodology Version: ACM0002 "Grid-connected electricity generation from renewable sources" Version 20.0		GS4GG Sectoral Scope: 2 UNFCCC CDM Sectoral Scope: 1 Technical Area: 1.2	
Monitoring Report Version: 01 Date: 04/11/2019		Final Monitoring Report Version: 02 Date: 23/04/2020	
Certified Project Design Document Version: Assessment team checked the registered GS4GG PDD version 04 dated 06/12/2019, Final Validation report dated 06/12/2019 version 02. https://registry.goldstandard.org/projects/details/1454 Date: Provided above			
Estimated amount of annual average certified SDG impact (as per approved PDD): SDG 7: 47,829 MWh/annum SDG 8: 1 Training and 10 employment SDG 13: 44,806 tCO ₂ e/annum			
Actual Emission reduction achieved for all SDG for the present Monitoring period: 81,675 MWh for the monitoring period (For SDG 7) 76,503 tCO ₂ e for the monitoring period (For SDG 13) 22 Training and 27 employment for the monitoring period (For SDG 8)			
Selected Sustainable Development Goals (SDGs): 7;8;13 SDG Contributions targeted (as per approved PDD) : SDG 7.2: By 2030, increase substantially the share of renewable energy in the global energy mix SDG 8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value			

SDG 13.2: Integrate climate change measures into national policies, strategies and planning

Verification Summary

LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by Shree Cement Limited to perform the 1st periodical verification of "21 MW Wind Energy Project by Shree Cement Limited" (GS reference number: 6999) applying the methodology ACM0002 version 20.0.

The management of Shree Cement Limited is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions.

A desk review and a site visit have been conducted to verify the data submitted in the monitoring report. Applus+ Certification confirms the following have been reviewed:

- The registered GS4GG PDD including the monitoring plan;
- Monitoring report(s);
- The applied monitoring methodology;
- Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board;
- GS4GG guideline and related Annex.
- All information and references relevant to the project activity's resulting in emission reductions.

The purpose of the project activity is to generate power using renewable energy source (wind energy) and sell the power generated to the state grid. The project activity generates electricity using wind energy. The generated electricity is exported to the regional grid system, which is under the purview of the INDIAN electricity grid of India.

Assessment team checked that the project owner has no legal dispute regarding the project activity and the same is also verified from company annual reports¹.

The electricity generated by the project is exported to the Indian electricity grid. The project activity therefore displaces an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid and there by reduces the associated CO₂ emissions.

Applus+ Certification confirms that the project is implemented in accordance with the validated and registered PDD. The monitoring plan complies with the applied methodology ACM0002 version 20.0 and the GS4GG guideline the monitoring has been carried out in accordance with the monitoring plan. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the projects GHG emissions and the resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring and its associated documents. Based on the information reviewed and evaluated Applus+ Certification confirms that the implementation of the project has resulted in 76,503 tCO_{2e} emission reductions during period 28/03/2018 to 31/10/2019 (Both days included)

ASSESSMENT TEAM

Team Members	Type of Resource ²	Organization (for OEs)
Lead Auditor: Mr. Sukanta Das	☐ IR ☐ EI ☒ OE	M/s True Quality Certifications private Limited
Auditor: NA	☐ IR ☐ EI ☐ OE	NA
Technical Expert: Mr. Sukanta Das	☐ IR ☐ EI ☒ OE	M/s True Quality Certifications private Limited
Technical Reviewer: Mr. Denny Xue	☐ IR ☒ EI ☐ OE	

¹ <https://www.shreecement.com/pages/compliance.php>

² IR (Internal Resource); EI (External Individual); OE (Outsourced Entity)

ABBREVIATIONS	
ACM	Approved Consolidated Methodology
AM	Approved Methodology
AMS	Approved Methodology Small Scale
Applus+ LGAI / Applus+	LGAI Technological Center, S.A. (Applus+ Certification)
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CER	Certified Emission Reduction
CL / CR	Clarification Request
CM	Combined Margin
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
EIA	Environmental Impact Assessment
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GS4GG (or GS)	Gold Standard for Global Goals
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-Governmental Organization
SDG	Sustainable Development Goal
TAC	Gold Standard Technical Advisory Committee
OM	Operational Margin
PDD	Project Design Document
PP	Project Participant
UNFCCC	United Nations Framework Convention for Climate Change
VVB	Validation and Verification Body
VVS	Validation and Verification Standard

Table of Content

Contents

1. INTRODUCTION.....	6
1.1 Objective	6
1.2 Scope	6
1.3 Description of the project activity	7
2. METHODOLOGY	8
2.1 Appointment of the assessment team.....	8
2.2 Document review.....	9
2.3 On site assessment and follow up interviews.....	9
2.4 Quality of evidences	11
2.5 Reporting of findings	11
2.6 Internal Quality Control	11
3. VERIFICATION FINDINGS	13
3.1 FARs from Validation / Previous Verification.....	13
3.2 Project Implementation in accordance with the registered Project Design Document	13
3.3 Compliance of the Monitoring Plan with the Monitoring Methodology	15
3.4 Completeness of Monitoring	16
3.5 SDG Outcomes Monitoring.....	18
3.6 Assessment of Data and Calculation of Greenhouse Gas Emission Reductions..	26
3.7 Management and Operational System	27
4. REFERENCE.....	29
5. VERIFICATION STATEMENT	30

Appendix:

Appendix 1: Corrective Action Request / Clarification Request / Forward Action Request resolution table.

Appendix 2: Calibration details of monitoring meters.

Appendix 3: Audit Team CVs.

1. INTRODUCTION

1.1 Objective

LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by Shree Cement Limited to perform the 1st periodical verification of "21 MW Wind Energy Project by Shree Cement Limited" applying the methodology ACM0002 version 20.0 and GS4GG guideline. Gold Standard projects must undergo periodic audits and verification of emission reductions as the basis for issuance of Gold Standard VERs.

The objective of the verification work is to assess the compliance with the requirements of paragraph 62 of the CDM Modalities and Procedures as well as the GS4GG guidelines and relevant Principles and Requirements. According to this assessment Applus+ Certification shall:

- Ensure that the project activity has been implemented and operated as per the registered PDD and that all physical features (technology, project equipment, monitoring and metering equipment) of the project are in place;
- Ensure that the final MR and other supporting documents provided are complete, verifiable and in accordance with applicable CDM Validation and verification standard for the project activities version 02 and Gold Standard (i.e. applicable GS4GG requirements version 1.2);
- Ensure that the actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology;
- Evaluate the data recorded and stored as per the ACM0002 version 20.0.

1.2 Scope

The verification scope encompasses an independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the DOE. The verification is based on the submitted monitoring report, registered GS4GG PDD, the applied monitoring methodology, relevant decisions, clarifications and guidance from the CMP and the EB, GS4GG guideline and any other information and references relevant to the project activity's resulting emission reductions. These documents are reviewed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures, GS4GG guideline and relevant Principles and Requirements, as well as their related rules and guidance.

Based on the requirements in the CDM Validation and verification standard for the project activities version 02 as well as the GS4GG guidelines, Applus+ Certification has applied a rule-based approach for the verification of the project. The principles of accuracy, completeness, relevance, reliability and credibility were combined with a conservative approach to establish a traceable and transparent verification opinion.

The verification considers both quantitative and qualitative information on emission reductions. The verification also considers the monitoring of SDG goals as per the requirement of GS4GG guideline.

The verification is not meant to provide any consultancy towards the client. However, stated requests for clarifications, corrective and/or forward actions may provide input for improvement of the monitoring activities.

1.3 Description of the project activity

The purpose of the project activity is to generate power using renewable energy source (wind energy) and sell the power generated to the state grid. The project activity generates electricity using wind energy. The generated electricity is exported to the regional grid system, which is under the purview of the INDIAN electricity grid of India.

The project activity is a new facility (Greenfield) and the purpose of the project activity is to generate energy electricity by the utilization of renewable wind energy and further selling the generated energy to the Indian Grid. In this process, there is no consumption of any fossil fuel and hence the project does not lead to any greenhouse gas emissions. Thus, electricity would be generated through sustainable means without causing any negative impact on the environment.

The electricity generated by the project is exported to the Indian electricity grid. The project activity therefore displaces an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid and there by reduces the associated CO₂ emissions.

2. METHODOLOGY

Applus+ Certification approach to the verification is a two-stage process. In the 1st stage, Applus+ Certification completed a strategic review and risk assessment of the projects activities and processes in order to gain a full understanding of:

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

Applus+ Certification used a periodical Verification Checklist which, based on the risk-based assessment of the parameters and data collection and handling processes for each of those parameters, describes the verification approach and the sampling plan.

In the 2nd stage, using the Verification Checklist, Applus+ Certification verified the implementation of the monitoring plan and the data presented in the Monitoring Report for the period in question. This involved a site visit and a desk review of the Monitoring Report. This Verification Report describes the findings of this assessment.

2.1 Appointment of the assessment team

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

The composition of audit team shall be approved by the LGAI Technological Center, S.A. (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	Role	SS Coverage	TA Coverage	Financial aspect	Host country experience
Mr. Sukanta Das	LA/TE	YES	YES	YES	YES
Mr. Denny Xue	TR	YES	YES	NA	NA

The complete list of CVs is included as Appendix 3 of this report.

2.2 Document review

The Monitoring Report version 01 was submitted to DOE before the verification activities started. The MR was assessed based on all the relevant documents. The aim of the assessment in the desk review was to:

- Verify the completeness of the data and the information presented in the MR;
- Check the compliance of the MR with respect to the monitoring plan depicted in the registered PDD and Passport, verify that the applied methodology was carried out. Particular attention to the frequency of measurements, the quality of the metering equipment including calibration requirements, and the quality assurance and quality control procedures of the power plant was checked by the assessment team.
- Evaluate the data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.
- Please check reference 4 of this report for detail of the documents checked.

2.3 On site assessment and follow up interviews

As a part of the verification, the on-site inspection in the state of Karnataka has been performed by the assessment team.

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1	-	H.G.Ramesh	PP representative- Site Incharge-	13/11/2019 (Site Visit Date)	Project implementation, Baseline emissions, ER calculations, Sustainable monitoring etc.	Mr. Sukanta Das
2	Mohan	Ms Kanika	Local stakeholder- Villager (Female)	13/11/2019 (Site Visit Date)	Stakeholder meeting- Employment opportunities, Standard of Livings etc.	Mr. Sukanta Das

3	Babu	Mr Rajesh	Local stakeholder- Villager (Male)	13/11/2019 (Site Visit Date)	Stakeholder meeting- Employment opportunities, Standard of Livings etc.	Mr. Sukanta Das
---	------	-----------	------------------------------------	---------------------------------	---	-----------------

The objective of the on-site assessment is to:

- Confirm the implementation and operation of the project;
- Review the data flow for generating, aggregating and reporting the monitoring parameters;
- Confirm the correct implementation of procedures for operations and data collection;
- Cross-check the information provided in the MR documentation with other sources;
- Check the monitoring equipment against the requirements of the PDD, Passport and the approved methodology, including calibrations, maintenance, etc.;
- Review the calculations and assumptions used to obtain the GHG data and ER;
- Identify if the quality control and quality assurance procedures are in place to prevent or correct errors or omissions in the reported parameters.
- Confirm the SDG goals/ Sustainable monitoring parameter as per the registered Passport
- To understand grievance (if any) from the villagers during the monitoring period.
- Local stakeholder meeting details:

Name of the stakeholder	Ms. Kanika Mohan
Occupation	Villager
DOE QUESTION: Did PP promised employment opportunity? Answer: Yes, employment is generated and the locals are given priority. Assessment team noted that locals were employed for the project activity for the current monitoring period. DOE also like to conclude that during the site visit it was observed that local people were employed for security and operation related work like water spraying, vegetation improvement and other unskilled work. DOE also found that skilled local persons were also employed by the organization for the operation and maintenance of the power plant.	

•

Name of the stakeholder	Mr. Rajesh Babu
Occupation	Villager
DOE questions: Did the power plant discharge any harmful pollutants? Answer: NO the plant does not discharge any harmful pollutants.	

DOE questions: Did the power plant destroy any crop fields?

Answer: The plant is implemented in barren land and there were no any fertile land or crop which is damaged.

2.4 Quality of evidences

Sufficient evidence covering the full verification period in the required frequency is available to verify the figures stated in the final MR Version 02. Specific cross-checks have been done in cases that further sources were available. The monitoring report's figures were checked by the assessment team against the raw data. The data collection system meets the requirements of the monitoring plan as per the methodology.

2.5 Reporting of findings

As an outcome of the verification process, the assessment team can raise different types of findings.

Where a non-conformance arises the assessment team shall raise a Corrective Action Request (CAR). A CAR is issued, where:

- Non-compliance with the monitoring plan or methodology 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.

The assessment team shall raise a Clarification Request (CR) if information is insufficient or not clear enough to determine whether the applicable CDM/GS requirements have been met.

All CARs /CRs/ FARs raised during verification shall be resolved prior to submitting a request for issuance.

Forward Action Requests (FARs) may be raised during verification for actions where the monitoring and reporting require attention and/or adjustment for the next verification period.

Please refer Appendix 1 of this report. Total numbers of CARs: 06, CLs: 00, FARs: 00.

2.6 Internal Quality Control

As a final step of verification, the final documentation including the verification report has to undergo an internal quality control by the Technical Reviewer. Each report has to be finally approved either by the DOE's Technical Manager or the Deputy. This approval process also includes another quality assurance check in terms of Administrative Review. In case one of these two persons is part of the assessment team, the final approval can only be given by the person who is not a part of the assessment team. If the documents have been satisfactorily

approved, the Request for Issuance is submitted to the GS Registry along with the relevant documents.

3. **VERIFICATION FINDINGS**

3.1 **FARs from Validation / Previous Verification**

This is 1st periodic verification for the project activity and no FAR is envisaged from the Validation of the project activity.

3.2 **Project Implementation in accordance with the registered Project Design Document**

The project activity was fully implemented according to the description presented in the GS4GG PDD. The assessment team confirms, through the visual inspection that all physical features of the proposed project activity including data collecting systems and storage have been implemented in accordance with the registered GS4GG PDD.

The technical features of the equipment's have been verified by the assessment team during site visit by checking nameplate of Wind turbines and also cross checked with manufacturers technical manual which is detailed listed below:

MODEL	S97 - 2.1MW
Operating Data	
Rated power	2.1MW
Cut-in wind speed	4 m/s
Rated wind speed	11 m/s
Cut-out wind speed	25 m/s
Rotor	
Pitch system	Electric drive with electric brake, gear box, frequency converter and batteries
Diameter	97 m
Swept area	7386 m ²
Blade material type	Glass-fibre reinforced plastic (GRP)/Polyester
Generator	
Type	Asynchronous 3 phase induction with slip rings operated with rotor circuit inverter system (DFIG)
Frequency	50/60 Hz
Protection	IP 54, IP23 for slip ring unit
Cooling system	Air cooled
Insulation	Class H
Braking System	
Aerodynamic brake	Pitch/full blade
Mechanical brake	Hydraulic disc brake, activated by hydraulic pressure (active)
Gearbox	
Type	3 stages (One planetary & Two helical)
Yaw System	
Type	Electric motors with brake, gear box and pinion
Bearings	3 (1 per blade) , Material - 42CrMo4 QT
Tower	
Type	Tubular Steel Tower (4 sections)

Assessment team checked the relevant dates i.e. Commissioning dates from the Commissioning certificate for the project activity and found the same to be appropriate. The actual date of Commissioning is mentioned in the below table. The details are as below:

WTG Details	Date of Commissioning (DOC)
KST 091	28/03/2018
KST 129	28/03/2018
KST 134	28/03/2018
KST 145	31/03/2018
KST 146	31/03/2018
KST 127	31/03/2018
KST 179	31/03/2018
KST 132	28/06/2018
KST 133	28/06/2018
KST 092	28/06/2018

As the project is already implemented assessment team checked the relevant project milestone and found that project is in continuous operation from its inception. The detail is as below:

Sr No.	Particulars	Date
1	LOI Issued to technology supplier	29/11/2017
2.	PO Issued to technology supplier	20/12/2017
3.	Commissioning of project activity	28/03/2018, 31/03/2018 and 28/06/2018
4.	Registration in GS4GG	20/11/2019

The project activity was in normal operational during the monitoring period and the same has been confirmed on-site. No unusual activates observed during the monitoring period and plant was undergone scheduled maintenance as per the recommendation of the manufactures. No forced breakdown observed and the same is confirmed by the assessment team with the plant log details.

The verification team has reviewed the commissioning certificates to conclude that the capacity of the project is same as mentioned in the registered GS4GG PDD. The capacity of the project activity does not change after the registration of the project activity. The commission certificates were issued by "Govt agencies" which is a third-party government firm and thus the commissioning dates are acceptable to the assessment team.

Also during the onsite visit, it was observed that the rated capacity of the Wind project is 21 MW. As the capacity of the project is more than type I limit of small scale project activity, DOE confirms that the project is large scale project activity.

Assessment team also checked the locations of the project activity during the onsite visit with the GPS meters and also cross checked the same with Google Map. The location as mentioned in the registered passport and Monitoring report version 02 is thus correct. The detail location of the project activity is as below.

Geographical coordinates of the all WTGs are given below:

Project Investor	WTG Location No	Latitude (D° M' Sec")	Longitude (D° M' Sec")
Shree Cement Limited	KST 091	15°52'49.43"	76°12'00.23"
	KST 092	15°52'58.59"	76°13'46.39"
	KST 127	15°53'57.68"	76°13'12.72"
	KST 129	15°53'15.44"	76°11'16.37"
	KST 132	15°53'05.95"	76°12'01.57"
	KST 133	15°53'34.38"	76°10'35.56"
	KST 134	15°52'28.57"	76°12'12.61"
	KST 145	15°53'05.62"	76°13'06.86"
	KST 146	15°53'21.05"	76°13'40.58"
	KST 179	15°52'49.83"	76°13'02.40"

The project is connected to National grid (as per the grid structure of India) and the same is found correct by the assessment team during the verification site visit. The grid structure as mentioned in the PDD is still applicable for the project and ex-ante emission factor as proposed in the PDD is used for emission reduction calculation.

Moreover, there were no changes in host country regulations which may impact either baseline or additionality of the project. Thus assessment team confirms that the project is implemented as per the registered passport and no change in additionality/baseline is envisaged for the present monitoring period.

Assessment team also checked the Feeder details of the connected WTGs during the onsite visit and found the same to be in line with Form B statement issued by State electricity board. The project is connected to 220 KV sub-Station at Kushtagi.

Materiality adopted in Verification:

Consideration of materiality in planning the verification

No.	Risk that would lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk levels	Justification	
1	Human errors: Readings from Meters (if not automatic)	LOW	Human error is likely to occur if the monitoring personnel are not trained well or inexperienced in data recording procedures and monitoring processes.	All the personal are well trained to monitor and collect data and thus risk associated with Human error is minimized. Assessment team checked the training records

				to confirm that all the personal are well trained to handle the activities related to monitoring. Assessment team checked the training records for the complete monitoring period and confirm that the personal are well trained to monitor and collect data for the project activity.
2	Human error: Quantification of emission reduction	LOW	Use of spread sheets without adequate data control, changes/updates , version tracking, traceability and security	All the energy statement i.e. Form B and the invoices for the complete monitoring period are checked and thus the assessment team confirms that the ER value is conservative and correct.

Consideration of materiality in conducting the verification

In line with Guidelines for Application of materiality in verifications, the verification team has conducted a complete verification of all the information presented in the monitoring report and data monitored as presented in the emission reduction calculation spread sheet. It invoices follows the paper trail back to the raw data such as meter reading records and invoices. There are no material errors, overestimation of ER, omission or misstatement.

3.3 Compliance of the Monitoring Plan with the Monitoring Methodology

The verification team is able to confirm that the monitoring plan is in accordance with the approved methodology ACM0002 version 20.0, applied by the proposed GS project activity. No deviation observed for the present monitoring period.

3.4 Completeness of Monitoring

The monitoring has been carried out in accordance with the monitoring plan contained in the GS4GG PDD. All parameters were monitored and determined as per the monitoring plan of the transitional documents as follows:

a. Data and parameters fixed ex ante or at renewable of crediting period

EF_{grid,OM,y}, **EF_{grid,BM,y}**, **EF_{grid,CM,y}**, were mentioned as ex-ante fixed parameter. Assessment team checked the values, source of data, choice of data, purpose of the data mentioned in the MR from the registered PDD and confirms that the similar approach was considered for the current monitoring period also.

The value for **EF_{grid,OM,y}**, **EF_{grid,BM,y}**, **EF_{grid,CM,y}**, was considered from the CO₂ baseline database published by Central Electricity Authority (CEA) version 14.0. The default value as mentioned in the registered PDD and MR are same. The value of combined margin in India is being given by CEA (= Central Electricity Authority, Govt of India) and thus assessment team concludes that the value is correct and appropriate. The default value in turn is used for baseline calculation as per the formula given in the registered passport for the current monitoring period.

The relevant Emission factor values used for emission reduction calculation are as below. Also as per the transitional requirement for GS4GG the ex-ante fixed parameters are now connected to relevant SDG indicator which is acceptable to the assessment team.

EF_{grid,OM,y} = **Relevant SDG Indicator= SDG13: Climate Action=** 0.9610 tCO₂e/MWh

EF_{grid,BM,y} = **Relevant SDG Indicator= SDG13: Climate Action=** 0.8644 tCO₂e/MWh

EF_{grid,CM,y} = **Relevant SDG Indicator= SDG13: Climate Action=** 0.9368 tCO₂e/MWh

b. Data and parameters monitored

As per the registered monitoring plan and requirement of the registered methodology following parameters needs to be monitored:

EG_{PJ,y} = **EG_{facility,y}** = Quantity of net electricity supplied to the grid during the year y. = Relevant SDG indicators= **SDG 7: Affordable and Clean Energy**

The electricity exported & imported is measured by Energy meter installed at substations. The reading is recorded and the difference from last month reading gives the number of units imported/exported. Net electricity supplied to the grid by the project plant in a given month = Export, kWh – Import, kWh. The 115% of import and transmission loss would be accounted while calculating net electricity supplied to grid as per PPA.

The meters is approved, tested & sealed by the State Utility. The meters are in the custody of State Utility. The frequency of calibration is once in 5 years³ as per the registered PDD. The monthly electricity supplied/exported by the project activity in the JMR report is cross checked with the monthly invoices of sale. In the absence or delay in the meter calibration appropriate Guidelines are applied appropriately to confirm the conservativeness of metering.

The metering arrangement, accuracy class of meters, calibration frequency is under control of state electricity board and PP does not have any control on it. PP is getting value of net electricity supplied to grid from the form B (primary source of data) and the same is considered the monitoring parameter. The billing is raised based on substation meters.

For billing purpose, the meter readings shall be measured on monthly basis jointly by the representative of State electricity board and the Project Participant and the PP has no control over the process. The meter reading is taken during a fixed billing cycle of every month and representative of state electricity board and Operation and maintenance personal onsite present

³ http://www.aegcl.co.in/Metering_Regulations_Of_CEA_17_03_2006.pdf

during the process. The export and import reading is continuous and recording frequency is monthly. The QA/QC procedure is as per the requirement of the registered PDD and onsite practice. Assessment team confirms the same during the project visit. Assessment team checked all the values of Net electricity supplied to the grid from the Form B issued by State electricity board

c. Implementation of sampling plan

PP did not apply sampling plan to determine data and parameters monitored during this monitoring period. The verification team has checked all the documents such as Form B issued by State electricity board /Invoices etc. and hence sampling plan was not required. The verification team hereby confirms that has checked all the documents.

d. Compliance with the calibration frequency requirements for measuring instruments

The metering arrangement is tri-vector bi-directional ABT energy meters (main meters) and L&T Make Check meters at the substation. These meters record several parameters including electricity exported & imported. These electricity meters are being used by state officials to obtain the value of export and import and hence Net electricity supplied is calculated based on these values.

The calibration details such as make, accuracy class serial number is as per the meter available onsite and checked during verification site visit.

All the energy meters are as per the registered PDD and is calibrated once in a five years by the SEB (=State electricity board) officials, as per the provisions of the PPA, signed between the PP and the SEB (=State electricity board). PP has not control whatsoever over the processes related to SEB meters. As evident from the calibration certificate there is no delay in calibration.

The Calibration details are presented in Annexure 1 of the MR. Calibration Agency for all the meters is State electricity board (= Meter and testing division of SEB). As per the PPA, the calibration dates and frequency is under the control of State electricity board (= Meter and testing division of SEB).

The calibration is done by State nodal agency (Meter Testing division), which is accredited Laboratory from National Accreditation Board for Testing and Calibration, Govt of India (<http://www.nabl-india.org/>) to carry out calibration.

Assessment team checked the same and found that the calibration is appropriate and correct as traceability is ensured. The meters were calibrated as per the norms of NABL and the meters are within the permissible error limit.

3.5 SDG Outcomes Monitoring

In the Registered GS4GG PDD version 04 dated 06/12/2019 indicators are chosen for the monitoring of sustainable monitoring:

Meth/tool	Relevant indicator	SDG	GS4GG PDD	MR	Compliance
Emission reduction in tCO _{2e}	SDG 13: Climate Action	Climate	Emission reduction in tCO ₂	Emission reduction in tCO ₂	Yes

Meth/tool	Relevant indicator	SDG	GS4GG PDD	MR	Compliance
Access to affordable and clean energy services	SDG 7: Affordable and Clean Energy 7.2.1 Renewable energy share in the total final energy consumption		Access to affordable and clean energy services	Access to affordable and clean energy services	Yes
Number of employment generation, Quality of employment	SDG 8: Decent Work and Economic Growth 8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities 8.6.1 Proportion of youth (aged 15-24 years) not in education, employment or training		Number of employment generation, Quality of employment	Number of employment generation, Quality of employment	Yes

The verification of the parameters required by the monitoring plan is provided as follows:

Relevant SDG Indicator	SDG 7: Affordable and Clean Energy 7.2.1 Renewable energy share in the total final energy consumption	
Data/parameter:	EGPJ, y = EGfacility, y (Access to affordable and clean energy services)	
Unit	MWh	
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh	
Source of data checked by the assessment team	Form B issued by State Electricity Board.	
Value(s) of monitored parameter	Actual Quantity of net electricity supplied to the grid: 81,675 MWh Below is the breakup of net power generation achieved during present monitoring period:	
	Year	Net Power Generated
	2018	36,792
	2019	44,883

Means of verification:	The electricity exported & imported is measured by Energy meter installed at substations. The reading is recorded and the difference from last month reading gives the number of units imported/exported. Net electricity supplied to the grid by the project plant in a given month = Export, kWh – Import, kWh. The 115% of import and transmission loss would be accounted while calculating net electricity supplied to grid as per PPA. The meters is approved, tested & sealed by the State Utility. The meters are in the custody of State Utility. The frequency of calibration is once in 5 years⁴ as per the registered PDD. The monthly electricity supplied/exported by the project activity in the JMR report is cross checked with the monthly invoices of sale. In the absence or delay in the meter calibration appropriate Guidelines are applied appropriately to confirm the conservativeness of metering.
Cross check mechanism	The Form B is cross-checked with the invoice copies. Emission reduction calculated in thus correct and accurate. The cross check mechanism is presented in the emission reduction calculation sheet and the same is found correct.

Relevant SDG Indicator	SDG 13: Climate Action						
Data/parameter:	Emission reductions achieved						
Unit	CO ₂ e						
Description	Emission reductions achieved						
Source of data checked by the assessment team	As per actual ER sheet.						
Value(s) of monitored parameter	76,503 tCO₂e Below is the breakup of emission reductions achieved during present monitoring period: <table border="1"> <thead> <tr> <th>Year</th><th>Emission Reductions achieved</th></tr> </thead> <tbody> <tr> <td>2018</td><td>34,461</td></tr> <tr> <td>2019</td><td>42,042</td></tr> </tbody> </table> The applied OM & BM for the project are as following: Operating Margin: 0.9610 tCO₂/MWh Build Margin: 0.8644 tCO₂/MWh The applied Combined margin for the project activity is 0.9368 tCO₂e/MWh. This high emission factor signifies the fact that the electricity being fed in the Indian grid (earlier INDIAN) is highly carbon intensive. Every MWh of electricity generated by the project activity prevents further emissions.	Year	Emission Reductions achieved	2018	34,461	2019	42,042
Year	Emission Reductions achieved						
2018	34,461						
2019	42,042						
Means of verification:	Assessment team by checking O&M policy and interview with O&M team, it is confirmed that the project proponent applied ex-ante fixed value of CEA version available. The same is assessed to be correct. Baseline situation of parameter The baseline was fossil fuel dominated grid as the project is a green field and no any activity occurred before the implementation of the project activity. Future target for parameter Optimal operation of wind power project to generate clean energy and associated emission reductions.						
Cross check mechanism	Not applicable						

⁴ http://www.aegcl.co.in/Metering_Regulations_Of_CEA_17_03_2006.pdf

Relevant SDG Indicator	SDG 8: Decent Work and Economic Growth 8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities 8.6.1 Proportion of youth (aged 15-24 years) not in education, employment or training																																																																						
Data/parameter:	1. Number of employment generation 2. Quality of employment																																																																						
Unit	Number (Number of employment generation)																																																																						
Description	1. Number of people employed directly due to the project activity 2. Training of Staff																																																																						
Source of data checked by the assessment team	1. Plant records or The training records for all the employees/Letter from O&M contractor for employment generation/ DOE interview with employees, local stakeholders etc 2. Plant records or The training records for all the employees/Letter from O&M contractor for employment generation/ DOE interview with employees, local stakeholders etc																																																																						
Value(s) of monitored parameter	Assessment team checked that for Quality of employment: Trainings & workshops where conducted for the O&M staff. A total of 22 trainings are conducted for the Staffs on various topics for the current monitoring period. The training records for the monitoring period is checked by the assessment team and found correct. The details are as below: 2018: 12 2019: 10 <table border="1"> <thead> <tr> <th>Sr No.</th><th>Date</th><th>Topic</th><th>No. of participants</th></tr> </thead> <tbody> <tr><td>1.</td><td>17/04/2018</td><td>Working at height & safety</td><td>13</td></tr> <tr><td>2.</td><td>26/04/2018</td><td>Lubricant refilling</td><td>11</td></tr> <tr><td>3.</td><td>15/05/2018</td><td>LT Switchgear maintenance</td><td>12</td></tr> <tr><td>4.</td><td>26/05/2018</td><td>Power Line Management</td><td>14</td></tr> <tr><td>5.</td><td>20/06/2018</td><td>WTG Maintenance</td><td>13</td></tr> <tr><td>6.</td><td>19/07/2018</td><td>Software Operations</td><td>11</td></tr> <tr><td>7.</td><td>20/08/2018</td><td>Computer operating</td><td>11</td></tr> <tr><td>8.</td><td>26/09/2018</td><td>Power Line Management</td><td>14</td></tr> <tr><td>9.</td><td>17/10/2018</td><td>Working at Height and Safety</td><td>13 (10 from O&M team and 3 locals)</td></tr> <tr><td>10.</td><td>20/11/2018</td><td>WTG Maintenance</td><td>13</td></tr> <tr><td>11.</td><td>26/09/2018</td><td>Lubricant refilling</td><td>11</td></tr> <tr><td>12.</td><td>22/11/2018</td><td>Behavioural Changes and Stress Management</td><td>12 (5 from O&M team and 7 from locals – Men and women both)</td></tr> <tr><td>13.</td><td>09/01/2019</td><td>Fire Fighting training</td><td>12</td></tr> <tr><td>14.</td><td>19/02/2019</td><td>First Aid Training</td><td>13(10 from O&M team and 3 locals- Men and Women both)</td></tr> <tr><td>15.</td><td>26/03/2019</td><td>Power Line Management</td><td>14</td></tr> <tr><td>16.</td><td>20/03/2019</td><td>WTG Maintenance</td><td>13 (10 from O&M team and 3</td></tr> </tbody> </table>			Sr No.	Date	Topic	No. of participants	1.	17/04/2018	Working at height & safety	13	2.	26/04/2018	Lubricant refilling	11	3.	15/05/2018	LT Switchgear maintenance	12	4.	26/05/2018	Power Line Management	14	5.	20/06/2018	WTG Maintenance	13	6.	19/07/2018	Software Operations	11	7.	20/08/2018	Computer operating	11	8.	26/09/2018	Power Line Management	14	9.	17/10/2018	Working at Height and Safety	13 (10 from O&M team and 3 locals)	10.	20/11/2018	WTG Maintenance	13	11.	26/09/2018	Lubricant refilling	11	12.	22/11/2018	Behavioural Changes and Stress Management	12 (5 from O&M team and 7 from locals – Men and women both)	13.	09/01/2019	Fire Fighting training	12	14.	19/02/2019	First Aid Training	13(10 from O&M team and 3 locals- Men and Women both)	15.	26/03/2019	Power Line Management	14	16.	20/03/2019	WTG Maintenance	13 (10 from O&M team and 3
Sr No.	Date	Topic	No. of participants																																																																				
1.	17/04/2018	Working at height & safety	13																																																																				
2.	26/04/2018	Lubricant refilling	11																																																																				
3.	15/05/2018	LT Switchgear maintenance	12																																																																				
4.	26/05/2018	Power Line Management	14																																																																				
5.	20/06/2018	WTG Maintenance	13																																																																				
6.	19/07/2018	Software Operations	11																																																																				
7.	20/08/2018	Computer operating	11																																																																				
8.	26/09/2018	Power Line Management	14																																																																				
9.	17/10/2018	Working at Height and Safety	13 (10 from O&M team and 3 locals)																																																																				
10.	20/11/2018	WTG Maintenance	13																																																																				
11.	26/09/2018	Lubricant refilling	11																																																																				
12.	22/11/2018	Behavioural Changes and Stress Management	12 (5 from O&M team and 7 from locals – Men and women both)																																																																				
13.	09/01/2019	Fire Fighting training	12																																																																				
14.	19/02/2019	First Aid Training	13(10 from O&M team and 3 locals- Men and Women both)																																																																				
15.	26/03/2019	Power Line Management	14																																																																				
16.	20/03/2019	WTG Maintenance	13 (10 from O&M team and 3																																																																				

			locals)
17.	11/04/2019	Working at height & safety	13
18.	26/04/2019	Lubricant refilling	11
19.	10/05/2019	LT Switchgear maintenance	12
20.	04/07/2019	Software Operations	11
21.	20/08/2019	Computer Operating	11
22.	11/09/2019	Power Line Management	14

The training programmes help in making the workforce efficient and skilled at their job. This not only helps the company but also adds to growth of individual employees. Thus, the project has a positive impact on the parameter. The detail regarding locals and non-locals participated in the training is also included in the table above. Assessment team thus checked that the locals were also given equal opportunity as per the need of the organization and proper training were also provided to them for the operational related works.

Assessment team checked that for Number of people employed directly due to the project activity: The total number of person employed for the calendar year is as below:

2018 : 27
 2019 : 25

The detail of the employees employed ⁵ with the project are as follows:

Year	Skilled	Unskilled	Total
2018	20	7	27
Male	19	Female	8
2019	20	5	25
Male	19	Female	6

The salary as provided to both skilled and non-skilled person is above the minimum wage of the locality. Before the implementation of the project activity local people are employed as labor in the Agricultural field and the Job is also not permanent. They are paid as per the requirement of the field and day work. After the implementation of the project activity the local people are employed with a permanent job and paid as per the minimum salary wages of the area. This not only improved the livelihood of the local villagers/peoples but also helped in improving the happiness quotient of the area.

Further the average hourly earnings of a person are higher than the local level. For e.g a person is getting a monthly salary of INR 62,000 then his average hourly earnings will be as follows:
 $= 62,000 / (30 \times 7) = \text{INR } 210.$

This is higher than the average wage per hour in India (Average hourly earning of a highly skilled worker for Zone C is INR 26.85 ⁶). Therefore assessment team confirm that project not only provide a sustainable employment opportunity to the skilled and unskilled person but also help to improve the living standard.

⁵ Employment agreement for both Skilled and un skilled employees are checked and found correct.

⁶ <https://clc.gov.in/clc/min-wages>

Means of verification:	Assessment team by checking all the training records and certificates, it is confirmed that the project proponent provided sufficient training for the employee/local people for skill and operation of the power plant. Also some interviews were made with employee/local people and they confirmed that they are receiving a lot of trainings. The training not only improves the operation level of the Project, and also enhances the technical skill of the staff. The safe and healthy working condition was provided to the staffs of the Project confirmed by site visit. As the O&M provider is certified with ISO standards Viz 9001 (QMS), 14001 (EMS) and 18001 (OHSAS). Thus all the personal working has to undergo training as per the requirement of the standards which covers Effective verbal & written communication", "HSE training to all employees who are deployed at site", "Inter departmental knowledge sharing" Baseline situation of parameter In the baseline, local people have no such opportunities to be trained on the technology and the monitoring of the plant operation, and the emergency and safety procedures. Future target for parameter Continuation of regular trainings/workshops for employees & O&M staffs
Cross check mechanism	Not applicable

During the site visit, the verification team confirmed that there is a grievance book with GS contact information in the lobby of the project owner's office. By checking grievance book, it was able to confirm there are some comments received from the local people for the present monitoring period. The details are as follow:

S. No.	Date of Complaint	Topic	Date of resolution	Remark from PP
1	03/05/2018	Drinking water not available	21/05/2018	RO Plant repaired.
2	17/08/2018	Need of Games room	-	Requested HO for games room.
3	19/02/2019	Street lights not working	21/02/2019	Street lights have been changed

The problem of drinking water and Street light is resolved during the current monitoring period. The same is confirmed during the interview with the local people. One issue regarding need of Games room construction is under consideration by the PP and it was confirmed that it will be done as soon as possible. However, assessment team is of the opinion that this complaint (regarding need of Game room) is minor in nature and does not reflect that locals are unhappy with the project implementation. The Local people are happy with the implementation of the project activity as it entrust employment and improve living standard of local people and villagers.

Assessment team also checked that the projects are not registered under the REC mechanism of India and the same can be cross-checked at <https://recregistryindia.nic.in>. Thus double counting for the current monitoring period is ruled out.

The project is registered under GS4GG mechanism only. Assessment team checked other registry like UNFCCC and VCS and found that the project is not registered in this mechanism. Hence the double counting is ruled out for the present monitoring period.

Also during the site visit, Applus+ Certification conducted an interview with the project owner and local stakeholders please find the summary of the interview as below:

Sections	Debriefing
Trainings & salaries of the employees	During site visit Mr. H.G Ramesh, of PP representative team was interviewed. It was noted that regular technical & nontechnical trainings were conducted and the salaries are in line with the industry standard.

In Summary, it is Applus+ Certification's opinion that the monitoring of the project owner regarding to sustainability is in line with requirement of the GS4GG guideline.

Summary of ex-post values of each SDG outcome for the current monitoring period

Item	Baseline estimate	Project estimate	Net benefit
SDG 7: Affordable and Clean Energy	-	81,675 MWh	81,675 MWh
SDG 8: Decent Work and Economic Growth	-	No. of employment opportunities created: 27 2018- 27 2019- 25 No. of trainings conducted: 22 2018- 12 2019- 10	No. of employment opportunities created: 27 2018- 27 2019- 25 No. of trainings conducted: 22 2018- 12 2019- 10
SDG 13: Climate Action	76,503 tCO ₂ e	-	76,503 tCO ₂ e

Comparison of actual value of outcomes with estimates in approved GS4GG PDD:

Item	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period												
SDG 7: Affordable and Clean Energy	76,395 MWh	81,675 MWh												
SDG 8: Decent Work and Economic Growth	1 training /annum and 10 people employed	No. of employment opportunities created: 27 Further below is the breakup of employment generated during the monitoring period <table><tr><th>Year</th><th>Skilled</th><th>Unskilled</th><th>Total</th></tr><tr><td>2018</td><td>20</td><td>7</td><td>27</td></tr><tr><td>Male</td><td>19</td><td>Female</td><td>8</td></tr></table>	Year	Skilled	Unskilled	Total	2018	20	7	27	Male	19	Female	8
Year	Skilled	Unskilled	Total											
2018	20	7	27											
Male	19	Female	8											

		<table><tr><td>2019</td><td>20</td><td>5</td><td>25</td></tr><tr><td>Male</td><td>19</td><td>Female</td><td>6</td></tr></table>				2019	20	5	25	Male	19	Female	6
		2019	20	5	25								
		Male	19	Female	6								
		No. of trainings conducted: 22											
		2018- 12											
2019- 10													
SDG 13: Climate Action	68,964 tCO ₂ e	76,503 tCO ₂ e											

3.6 Assessment of Data and Calculation of Greenhouse Gas Emission Reductions

As a result of verification of the ER calculation process, the assessment team confirmed that all the parameters required for the determination of the emission reductions have been included in the Monitoring report Version 01 & Monitoring report Version 02 and corresponding ER calculation spread-sheets and are consistent with the applied methodology ACM0002 version 20.0 and the monitoring plan contained in the registered GS4GG PDD. The parameters are complete in this monitoring period.

After verifying the reported figures with the raw data sources, it's confirmed that the values of the parameters from the raw data sources are consistent with those quoted in the Monitoring Report Version 01 & Monitoring report Version 02 and corresponding ER calculation spread-sheets. The verification process for the same has been clearly described in above section of the report. See below for the detailed data:

Baseline emissions

$$\begin{aligned}
 BE_y &= EG_{PJ,y} \times EF_{grid,CM,y} \\
 &= 81,675 \times 0.9368 \\
 &= 76,503 \text{ tCO}_2\text{e (round down value)}
 \end{aligned}$$

Project emissions:

The project is a Wind power project, no fossil fuel is be consumed according to the methodology ACM0002 version 20.0 & according to registered PDD, $PE_y = 0 \text{ tCO}_2\text{e}$

Leakage:

As per ACM0002 version 20.0, No leakage emission needs to be considered.

Emission reductions:

Thus the emission reductions are:

$$\begin{aligned}
 ER_y &= BE_y - PE_y \\
 &= 76,503 \text{ tCO}_2\text{e}
 \end{aligned}$$

The emission reductions as per the registered PDD for the current monitoring period is estimated to be 68,964 tCO₂e (Calculated based on pro rate basis considering 583 days of the monitoring period and annual estimation from the registered PDD which is 44,806 tCO₂e) whereas during the current monitoring period the emission reductions claimed are 76,503 tCO₂e, which is approximately 10.93% higher than the estimated emission reductions for the same monitoring period.

It is to noticed here that in present monitoring period, the emission reductions are 10.93% higher than the estimated emission reductions based upon the number of days covered during the current verification period. This is due to the fact that the higher PLF (27.8%) achieved as compared to the PLF estimated in the Investment Analysis of the project activity at the Validation stage. However, even with actual PLF of 27.8% achieved, the equity IRR of the project activity is 7.53% with a benchmark of 15.16% and the breaching value is 80.35% which is highly unlikely scenario.

The estimated PLF considered during Investment analysis was 26% which resulted in equity IRR of the project activity to be 6.71%, thus even with an increased PLF of 27.8% the equity IRR (7.53%) is well below benchmark and thus deemed acceptable to the VVB. Moreover, this is a 1st periodic verification and there is no historical data to prove that there is a continuous increase in actual emission reduction. During the onsite visit assessment team confirm that there is no project design change which can impact the increase of the actual ER value and the partial increase of actual value is because the project experienced favourable wind flow and is nature dependent. Therefore, the partial increase is acceptable to the assessment team because the additionality of the project is not impacted and project is implemented as per the description and specification provided in the registered PDD without any design change.

3.7 Management and Operational System

The responsibilities of data measurement, collection, verifying, archiving etc. have been clearly defined in the registered PDD. The same practice is followed onsite and it is confirmed by the assessment team during the verification site visit. The data related to ER calculation as well as data monitoring, collection process etc. have been internally reviewed by the management of the Monitoring team regularly. The responsibility of each function is consistent with the monitoring plan in the registered PDD.

The information flow of each parameter has been verified by the assessment team via interviewing with responsible personnel.

It's verified during the on-site verification, the monitoring procedure as well as the internal quality management and control procedures are stipulated in the PDD. The monitoring personnel have been interviewed by the assessment team and it's confirmed that the monitoring is implemented as per the procedure. Also the training record has been checked by the assessment team and it is confirmed that the monitoring personnel are get sufficient train to perform the monitoring.

Also, during the site visit the VVB witnessed the stakeholder consultations feed-back conducted by the PP and observed that the no complaints or disputes were highlighted by the stakeholder for the project. All the stakeholders are of the opinion that the project proponent had taken care of all the agreed issues during the initial stakeholder consultation at the start of the project.

All the data and documents, either hard copies or soft copies, is kept for two years after the end of the last crediting period or the last issuance of GS VERs for this Project, whichever occurs later.

4. REFERENCE

LIST OF DOCUMENTS	
S. No.	Document/Evidence/Reference/Web link, Version, Date
/01/	Monitoring Report Version 01 dated 04/11/2019, Monitoring report version 02 dated 23/04/2020
/02/	ER sheets version 1.0 dated 04/11/2019 ER Sheets version 2.0 dated 23/04/2020
/03/	Assessment team checked the registered GS4GG PDD version 04 dated 06/12/2019, Final Validation report dated 06/12/2019 version 02. https://registry.goldstandard.org/projects/details/1454
/04/	GS Validation Report - Final Validation report dated 06/12/2019 version 02.
/05/	ACM0002 version 20.0 Tool to calculate the emission factor for an electricity system"
/06/	CDM Validation and Verification Standard Version 2.0 for the project activities
/07/	GS4GG guideline
/08/	Training records of the employees (both skilled/non-skilled)
/09/	O&M policy
/10/	Monthly reports issued by state utility and invoices raised by PP for the complete monitoring period
/11/	Calibration certificates of the complete monitoring period
/12/	Commissioning certificates for power plant
/13/	Log book records for scheduled maintenance of the power plant for the complete monitoring period
/14/	Sample work contract for both skilled and non-skilled manpower
/15/	CSR report
/16/	Grievance register
/17/	HSE procedures
/18/	Power wheeling agreement
/19/	O&M agreement
/20/	Technical manual from the Manufacturer

5. FINAL VERIFICATION STATEMENT

Applus+ Certification has been engaged by Shree Cement Limited to perform the 1st periodical verification of the “21 MW Wind Energy Project by Shree Cement Limited” (GS Ref. No. 6999).

The management of Shree Cement Limited is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project’s Monitoring Plan in the registered GS4GG PDD version 04 and the applied methodology ACM0002 version 20.0.

Our verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakesh accord, as well as those defined by the CDM Executive Board and Gold Standard. Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. The verification can confirm that:

- the project is operated as planned and described in the project design document and approved by the GS;
- the monitoring plan is as per the applied methodology;
- the monitoring in Monitoring Report is as per the PDD and the monitoring plan approved by the GS;
- the development and maintenance of records and reporting procedures are in accordance with the registered monitoring plan;
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately;
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements.

In our opinion, the GHG emission reductions for “21 MW Wind Energy Project by Shree Cement Limited” (GS Ref. No. 6999) for the monitoring period 28/03/2018 to 31/10/2019 (Both days included) as reported in Monitoring Report, prepared on the basis of the project’s Monitoring Plan are fairly stated.

Based on the information we have seen and evaluated, we confirm the following statement:

Reporting period: 28/03/2018 to 31/10/2019⁷ (Both days included)

Verified emissions in the above reporting period:

Leakage emissions	0 tCO ₂ e equivalents
Project emissions	0 tCO ₂ e equivalents
Baseline emissions	76,503 tCO ₂ e equivalents (Rounded

⁷ The project is registered under Retroactive Mechanism. So the start date of crediting period can be from two years before the registration date, but as the project was commissioned on 28/03/2018, the start date of crediting period has been taken since then.

down)

Emission reductions

76,503 tCO₂e equivalents (Rounded
down)

VINTAGE WISE EMISSION REDUCTION IS AS FOLLOWS:

Period	Amount
28/03/2018 to 31/12/2018	34,461
01/01/2019 to 31/10/2019	42,042

Date: 06/06/2020

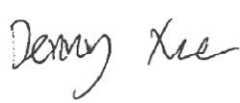
Lead Auditor: Mr. Sukanta Das

Tech. Expert: Mr. Sukanta Das

Tech. Reviewer: Mr. Denny Xue

Approver (*Applus+ Certification Business Unit Managing Director*)

Mr. Juan Sendín Caballero

ASSESSMENT TEAM	
Team Leader Mr. Sukanta Das	Technical Reviewer: Mr. Denny Xue
Signature: 	Signature: 
Approver: Mr. Juan Sendín Caballero	
Signature: 	

Appendix 1: Corrective Action Request/Clarification Request/Forward Action Request resolution table

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	01
Raised by:	Sukanta	Ref. to checklist in above tables:	NA
Description of the audit finding		Date:	15/11/2019
During the document verification following documents are missing: Commission Certificate of the power plant is missing Technical Manual of the power plant is missing.			
Project Participant's response		Date:	23/04/2020
1. Commissioning certificate of project activity is submitted herewith 2. Technical manual of WTG is submitted with MR V 02			
Documentation provided as evidence by Project Participant			
1. Commissioning certificate 2. Technical manual of WTG			
Auditor's assessment comment		Date:	04/06/2020
Following are the observation of the DOE: Commission Certificate and Technical Manual of the power plant are now submitted to the assessment team. CAR is thus closed.			

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	02
Raised by:	Sukanta	Ref. to checklist in above tables:	NA
Description of the audit finding		Date:	15/11/2019
During the document verification it is observed that the log records for plant break down is not provided to the assessment team for the monitoring period. Corrective action is sought for the same.			
Project Participant's response		Date:	23/04/2020
Breakdown details for the project is submitted herewith			
Documentation provided as evidence by Project Participant			
Plant breakdown details			
Auditor's assessment comment		Date:	04/06/2020
The plant log records for the monitoring period is checked by the assessment team and found that no unforeseen incident observed during the monitoring period. The Power plant undergone scheduled maintenance as per the manufacturer specification. CAR is thus closed.			

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	03
Raised by:	Sukanta	Ref. to checklist in above tables:	NA
Description of the audit finding		Date:	15/11/2019
The Monitoring plan in the MR is not as per the registered Monitoring plan of GS4GG PDD. Corrective action is sought. Moreover, following observation is made by the DOE regarding monitoring parameter: For the parameter SDG 7: Monthly Generation Record / Joint Meter Reading sheets and invoices for cross check for the complete monitoring period is missing. The parameter is thus reserved. For the parameter SDG 8: Decent Work and Economic Growth are linked with Quality of employment which is acceptable to the assessment team. However following discrepancies found: • The Letter from O&M contractor for employment generation • Annual Training Records- (Attendance sheet, Minutes of Meeting for the training provided- Safety, operational, soft skills etc) and (HSE & HR) & Employee feedback forms are not submitted to the DOE. Moreover, Annual training details for the monitoring period are also missing in the MR. Corrective action is sought for the same. For the parameter SDG 8: Decent Work and Economic Growth are linked to Quantitative employment and income generation. The same is acceptable to the assessment team. Following discrepancies are observed for the current monitoring period: • The daily attendance register is not provided to DOE. • Plant employment records- supportings • Moreover, PP claimed that many people are employed however it is not mentioned whether they are temporary/permanent or skilled/unskilled basis. Annual data for the Jobs opportunity provided for the monitoring period is missing in the MR. As per registered passport and transitional annex the supporting to claim the data like Employee pay- rolls, Salary slip and Attendance register is not submitted to the DOE. • PP also claimed that the payment will be based on work and no any gender inequality for payment for work of equal value. The supporting is missing. • Also, it is not mentioned whether local people are employed because of the implementation of the project activity. As per PP the parameter has a positive impact as the project results in direct employment and income generation. PP is requested to provide evidence how income generation and direct employment in the region is improved.			
Project Participant's response		Date:	23/04/2020
1. JMR Sheets and Invoices for the complete monitoring period is submitted with MR V02 2. SDG 8- Employment generated during the monitoring period as well as training records are provided by the O&M Contractor 3. Breakup of employment generated for skilled as well as unskilled workers is submitted with MR V02 4. PP has submitted their HR Policy and Anti-harassment policies to ensure gender equality and equal pay for equal work. The statement is also supported with employee salary slips. Further due to project implementation local people are getting employed and are earning higher salary than the local level. Thus it can be concluded that the			
Documentation provided as evidence by Project Participant			

1. Salary slips 2. Training records 3. JMR & Invoices 4. HR Policy		
Auditor's assessment comment	Date:	04/06/2020
Following are the observation of the DOE: 1. FOR SDG 7 the form B and the invoice for the complete monitoring period is submitted. CAR is thus closed 2. FOR SDG 8 , the supporting documents are now submitted. CAR is thus closed. FOR SDG 8, the explanation is acceptable to the DOE. CAR is thus closed.		

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	04
Raised by:	Sukanta Das	Ref. to checklist in above tables:	
Description of the audit finding		Date:	15/11/2019
The ER value is not rounded down which is not conservative. Cross check mechanism is not mentioned in the ER sheet. Section E.4 and E.5 need detail assessment. The table is not correct. Corrective action is sought. The emission reduction calculation is thus reserved till the submission of proper documents.			
Project Participant's response		Date:	23/04/2020
ER Sheet is being round down to nearest integer. Crosscheck mechanism is also being represented in the ER Sheet transparently.			
Documentation provided as evidence by Project Participant			
ER Sheet V02			
Auditor's assessment comment		Date:	04/06/2020
All the form B and invoices are now submitted to the assessment team. The value as mentioned in the ER is correct and conservative. Cross check mechanism now forms the part of ER sheet version 02. CAR is thus closed.			

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	05
Raised by:	Sukanta Das	Ref. to checklist in above tables:	
Description of the audit finding		Date:	15/11/2019
The calibration details are missing in the MR. Calibration date/Calibration frequency/Due date of Calibration is missing. Moreover, Calibration certificates are also missing. Corrective action is sought for the same.			
Project Participant's response		Date:	23/04/2020
Calibration schedule as well as their validity is mentioned in Annexure I of the MR V02 and the same is baked with calibration certificates covering the entire monitoring period.			
Documentation provided as evidence by Project Participant			

MR V02		
Calibration reports		
Auditor's assessment comment	Date:	04/06/2020
The Calibration details are now submitted to the assessment team. No delay observed in calibration for the present monitoring period. CAR is thus closed.		

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	06
Raised by:	Sukanta Das	Ref. to checklist in above tables:	
Description of the audit finding		Date:	15/11/2019
As per the monitoring report a grievance register is placed at site and is being monitored continuously for any comments from Stakeholder. The Register is not submitted to the assessment team. CAR is thus raised.			
Project Participant's response		Date:	23/04/2020
Grievance register is submitted with MR V02			
Documentation provided as evidence by Project Participant			
Grievance register			
Auditor's assessment comment		Date:	04/06/2020
During the site visit, the verification team confirmed that there is a grievance book with GS contact information in the lobby of the project owner's office. By checking grievance book, it was able to confirm there are some comments received from the local people for the present monitoring period.			
The problem of drinking water and Street light is resolved during the current monitoring period. The same is confirmed during the interview with the local people. One issue regarding need of Games room construction is under consideration by the PP and it was confirmed that it will be done as soon as possible. However, assessment team is of the opinion that this complaint (regarding need of Game room) is minor in nature and does not reflect that locals are unhappy with the project implementation. The Local people are happy with the implementation of the project activity as it entrust employment and improve living standard of local people and villagers.			
CAR is thus closed.			

Appendix 2: Calibration details of monitoring meters

Serial No & Type	Make	Accuracy Class	Calibration Date	Validity
18015377 (Main meter)	L&T	0.2 s	23/02/2018	22/02/2023
18015378 (check meter)	L&T	0.2 s	23/02/2018	22/02/2023

Appendix 3: Audit Team CVs

Name	SHORT CV. BACKGROUND INFORMATION
Mr. Sukanta DAS	Mr. Sukanta DAS, has done M. SC in (Electronics and Photonics) and M. Tech in (Energy technology) from Tezpur Central University/ Indian Institute of technology Bombay in India. He is a certified lead auditor for ISO 14001 EMS LA and ISO 9001 QMS LA from International registry for Certified Auditors (IRCA) and Certified Lean Management practitioner from Quality Council of India (QCI). He has more than Nine years of working experience at TUV NoRD/ Re-consult/CRA/APPLUS certifications under various categories of projects stating from Renewable to waste to supercritical projects. He was JI/ CDM Lead Assessor in TUV NoRD and was involved in more than 100 CDM validation and verifications activities in Gold Standard, VCS, CDM projects as a team leader/technical reviewer / validator / verifier covering the sectoral scope 1, 13 technical areas 1.2/1.1/13.1. Currently he is associated with True Quality Certifications Private Limited and is empanelled with APPLUS certification to carry out GHG audit.
Mr. Denny Xue	Mr. Denny Xue (Master Degree in Environmental Engineering, Bachelor Degree in Thermal Engineering) is an Auditor appointed by Applus+ LGAI for the GHG project assessment. He is based on Shanghai. He has 1.5 years of work experiences in CDM project development. Before he joined Applus+ LGAI, he has been worked for Shanghai Chuanji Investment and Management which is a CDM consultancy company as a project manager for CDM project development.