

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



Project Title:	100.5 MW Wind Power Project in Madhya Pradesh, India
Monitoring Period:	01/04/2016 to 31/03/2018 (Both days included)
GS project ID:	GS3969
Internal ID:	0218
Customer:	Orange Mamatkheda Wind Private Limited (OMWPL)
Date:	09/07/2018
Revision:	03

SUMMARY			
Reference No.	Date (first version)	Version No.	Date (last version)
GS 3969	17/05/2018	03	09/07/2018
GS4GG Verification			
GS4GG Certified Product (sought):		GHG Emission Reductions	
GS4GG SDG Impact Statement (sought):		NA	
General Information			
Client	Orange Mamatkhedha Wind Private Limited (=OMWPL)		
Project Title	100.5 MW Wind Power Project in Madhya Pradesh, India		
Project Participants	Orange Mamatkhedha Wind Private Limited		
Project Location	OMWPL has installed WTGs at Bagiya, Kanser, Mawta, Nandwell, Ranigaon, Thikriya, Bhandariya, Bhepur, Chandakhedi, Dehari, Dhandhoda, Garoda, Karju and Sagwali, villages of Ratlam & Mandsaur districts of Madhya Pradesh in India		
Contact Person	Mr. Pavan Gupta		
Monitoring Period:	01/04/2016 to 31/03/2018 (Both days included)		
GS4GG Version: GS4GG Principles and Requirements 1.1 GS4GG Activity Requirements: RE Activity Requirements Applied Methodology Version: ACM0002 "Grid-connected electricity generation from renewable sources" Version 16.0 Current Methodology Version: As this is verification applied methodology is equal to current methodology		GS4GG Sectoral Scope: 2 UNFCCC CDM Sectoral Scope: 1 Technical Area: 1.2	
Published Monitoring Report Version: 01 Date: 06/04/2018		Final Monitoring Report Version: 03 Date: 03/07/2018	
Certified Project Design Document Version: The project was previously registered under GS version 2.2. The date of Registered passport is 14/02/2016 version 02 and registered PDD is 14/03/2016 version 02. The project is than upgraded to GS4GG and the same is accepted by GS dated 30/03/2018 Date: Provided above			
Estimated Annual Emission Reductions: 176,331 tCO ₂ e/annum and 352,662 tCO ₂ e for this Monitoring Period			
Actual Emission reduction achieved: 373,792 tCO ₂ e			
Selected Sustainable Development Goals (SDGs): 7;8;13			
Verification Summary			
LGAi Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by Orange Mamatkhedha Wind Private Limited to perform the 2 nd periodical verification of "100.5 MW Wind Power Project in Madhya Pradesh, India" (Ref. No. 3969) applying the methodology ACM0002 version 16.0. The management of Orange Mamatkhedha Wind Private 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: a. The registered PDD and Passport, transitional documents i.e. Gold standard for Global Goals Transition Annex to GS4GG including the monitoring plan and the corresponding validation			

SUMMARY			
Reference No.	Date (first version)	Version No.	Date (last version)
report; b. Monitoring report(s); c. The applied monitoring methodology; d. Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board; e. The Gold Standard Toolkit Version 2.2 and GS4GG guideline and related Annex. f. All information and references relevant to the project activity's resulting in emission reductions. The project activity is a 100.5 MW Wind power project, promoted by Orange Mamatkhedha Wind Private Limited (OMWPL). The purpose of the project activity is to generate clean electricity with utilization of Wind energy. The project consists of 67 Wind Turbine Generators (WTGs) of 1.5 MW class ReGenV87 make. The electricity generated by the project is exported to the NEWNE electricity grid. The project activity is 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/transitional documents and registered Passport/ transitional documents. The monitoring plan complies with the applied methodology ACM0002 version 16.0 and the Gold Standard Toolkit Version 2.2, 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 373,792tCO₂e emission reductions during period 01/04/2016 to 31/03/2018 (Both days included).			

ASSESSMENT TEAM		
Team Members	Type of Resource ¹	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 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

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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 Orange Mamatkhedha Wind Private Limited (OMWPL) to perform the 2nd periodical verification of "100.5 MW Wind Power Project in Madhya Pradesh, India" applying the methodology ACM0002 version 16.0 and the Gold Standard Toolkit Version 2.2 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, Passport and transitional documents for registration and that all physical features (technology, project equipment, monitoring and metering equipment) of the project are in place;
- ensure that the published MR and other supporting documents provided are complete, verifiable and in accordance with applicable VVS version 01 for the project activity and Gold Standard i.e. applicable GS 2.2 and GS4GG requirements;
- 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 16.0.

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, the validated and registered PDD and registered Passport as well as GS4GG transitional documents as well as its validation report, 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 VVS version 01 for the project activity as well as the GS4GG guideline, 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 sustainable parameters.

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 project activity is a 100.5 MW Wind power project, promoted by Orange Mamatkhedha Wind Private Limited (OMWPL). The purpose of the project activity is to generate clean electricity with utilization of Wind energy. The project consists of 67 Wind Turbine Generators (WTGs) of 1.5 MW class ReGenV87 make.

The electricity generated by the project is exported to the NEWNE electricity grid. The project activity is 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.

The project proponent has entered into agreement with the WTG Suppliers (Re-Gen) for the operation and maintenance of WTGs. The WTG supplier has dedicated and technically well-equipped O&M team for day-to-day Operation and maintenance of each WTG. O&M contractor will provide a monthly report, which includes generation data, major breakdown events and machine availability.

The project activity has entered a power purchase agreement for a period of 25 years with the MP Power Management Company Limited (MPPMCL). The electricity is fed in the regional grid and monitored in the presence of MP Power Transmission Company Limited (MPPTCL). Monitoring consists of metering the net electricity supplied to the grid ($EG_{facility,y}$). This parameter is based on the monthly JMRs (share certificates) undertaken by MPPTCL and Re-Gen which is continuously through energy meter. The PP will then raise monthly electricity sales invoices to MPPMCL based on the JMR reading. All the meters used in the project activity will be calibrated on an annual basis.

As a Voluntary measure and in line with SDG goals following indirect benefits are envisaged from the implementation of the project activity.

1. Tree Plantation were conducted by the PP as a part of their CSR activity which contributed towards Good Health and Well-Being. The same is checked by the assessment team during the verification site visit and found correct.
2. As a part of CSR initiative by the project participant following facilities were implemented in and around the project which is as below:
 - Establishment of two libraries cum computer centre in 2 units in Sr. Secondary school Mawta and high school bachodiya.
 - Furniture, Science & Maths Kit, Black Boards, Mats, stationary, scholarships, Sports Kit, bicycles etc. in High school Bachodiya Ratlam (MP) and Primary school Ranigaon District Ratlam (MP).
Assessment team checked the same during the verification site visit and found correct.
3. To improve the healthcare Sanitation and drinking water facility project participant has installed Water Purifier of reverse osmosis technology along with Water cooler, Water pipe line laid down from Mawata Panchyat Well to Mawata village and

Construction of toilet with water facility in Sr. Secondary school Mawta, high school bachodiya, High school ranigaon, Sr. Sec. School Behpur, Jr. High School Sagwali. Assessment team checked the same during the verification site visit and found correct.

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	TA	Financial	Host country
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		Coverage	Coverage	aspect	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 section 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 Madhya Pradesh has been performed by the assessment team.

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Gupta	Pavan	PP representative	24/04/2018	Project implementation, Baseline emissions, ER calculations, Sustainable monitoring etc.	Mr. Sukanta Das
2	Venkat	SR	Local stakeholder	24/04/2018	Stakeholder meeting- Employment opportunities, Standard of Livings etc.	Mr. Sukanta Das
3	Balu	TR	Local stakeholder	24/04/2018	Stakeholder meeting- Employment opportunities, Standard of Livings etc.	Mr. Sukanta Das
4	-	Santosh	Local stakeholder	24/04/2018	Stakeholder meeting- Noise pollution if any, Standard of Livings etc.	Mr. Sukanta Das
5	-	Hari	Local stakeholder	24/04/2018	Stakeholder meeting- Soil Erosion if any, Standard of Livings etc.	Mr. Sukanta Das
6		Lalit	Local stakeholder	24/04/2018	Stakeholder meeting- Employment opportunities, Standard of Livings etc.	Mr. Sukanta Das
7	Raj	Prakash	O&M team member	24/04/2018	O&M practice onsite, Cost of O&M and agreement details with PP	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 Sustainability monitoring plan as per the registered Passport
- To understand grievance (if any) from the villagers during the monitoring period.

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 03. 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 and CRs 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: 05, 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

No FARs envisaged from previous verification and or Validation. This is 2nd periodic verification for 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 registered PDD and registered Passport. 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 PDD and registered Passport.

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:

POWER	
Rated power	1,500 kW
Cut-in wind speed (10 min. mean)	3 m/s
Rated Wind Speed (10 min. mean)	Approx. 12.5 m/s
Cut-out wind speed (10 min. mean)	22 m/s
Survival wind speed	52.5 m/s
Generator	Variable Speed, Multi-pole Synchronous with Permanent Magnet Excitation
ROTOR	
Diameter	86.7 m
Swept area	5,325 m ²

Speed range (variable)	9 to 17.3 rpm
TOWER AND FOUNDATION	
Hub height	85 m
Design	Tubular, Four sections
Foundation type	Floating foundation
CONTROL AND SAFETY SYSTEMS	
Control of output	Pitch Regulation
Speed control	Variable, Micro-controller based
Low Voltage Ride Through (LVRT)	3 seconds
Primary brake system	Aerodynamic Brake, Single Pitch Control/triple redundant
Pitch System	Electromechanical, Maintenance Free Toothed Belt Drive (Patented)
Remote Monitoring	VPN, Visualization via web-browser
TYPE CLASSES	
Wind turbine type class	GL III A

Assessment team checked the relevant dates i.e. Commissioning dates for the project activity and found the same to be appropriate. The details are as below:

<u>WTGs Location Number</u>	Date of Commissioning
RM3-43, RM3-44, RM3-45, RM3-46 & RM3-48	07/11/2014
RM3-32, RM3-33, RM3-34, RM3-39, RM3-13, RM3-14, RM3-16, RM3-35, RM3-10, RM3-11, RM3-8, RM3-9, RM3-41, RM3-42, RM3-23, RM3-17, RM3-18, RM3-19, RM3-01, RM3-02, RM3-03, RM3-22, RM3-28, RM3-30	20/08/2014
RM-2, RM-3, RM-4, RM-5, RM-6, RM-7, RM-8, RM-9, RM-10, RM-11, RM-38, RM-39, RM-41, RM-42, RM-44, RM-45, RM-37, RM-49, RM-33, RM-12, RM-13, RM-21, RM-22, RM-20, RM-19, RM-18, RM-16, RM-29, RM-28, RM-25, RM-26, RM-34, RM-36, RM-48	05/04/2015

RM3-40, RM3-12	25/08/2014
RM-01, RM-43	28/04/2015

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 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 100.5 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 PDD/passport and Monitoring report version 03 is thus correct. The detail location of the project activity is as below.

Geographical coordinates of the all WTGs are given below:

S. No	WTG ID	Latitude N	Longitude E
1	RM_01	23° 44' 28.075"	74° 58' 17.419"
2	RM_02	23° 46' 2.550"	74° 57' 0.942"
3	RM_03	23° 45' 50.778"	74° 56' 56.742"
4	RM_04	23° 45' 44.175"	74° 56' 52.646"
5	RM_05	23° 45' 31.851"	74° 56' 53.004"
6	RM_06	23° 45' 20.438"	74° 56' 52.126"
7	RM_07	23° 45' 13.024"	74° 56' 51.705"
8	RM_08	23° 45' 5.869"	74° 56' 50.400"
9	RM_09	23° 44' 48.409"	74° 56' 53.869"
10	RM_10	23° 44' 40.539"	74° 56' 51.258"

11	RM_11	23° 44' 33.286"	74° 56' 47.552"
12	RM_12	23° 45' 41.015"	74° 58' 44.783"
13	RM_13	23° 45' 29.701"	74° 59' 0.506"
14	RM_16	23° 45' 0.957"	74° 59' 7.999"
15	RM_18	23° 44' 53.801"	74° 58' 49.207"
16	RM_19	23° 44' 40.957"	74° 58' 53.907"
17	RM_20	23° 44' 30.029"	74° 58' 36.282"
18	RM_21	23° 44' 16.855"	74° 58' 12.264"
19	RM_22	23° 44' 10.581"	74° 58' 20.178"
20	RM_25	23° 44' 45.641"	75° 0' 49.350"
21	RM_26	23° 45' 8.242"	74° 59' 40.994"
22	RM_28	23° 44' 21.253"	75° 0' 46.839"
23	RM_29	23° 44' 13.059"	75° 0' 50.582"
24	RM_33	23° 45' 57.626"	74° 58' 12.594"
25	RM_34	23° 45' 15.104"	74° 59' 42.831"
26	RM_36	23° 45' 18.452"	74° 59' 29.123"
27	RM_37	23° 45' 35.434"	74° 57' 10.526"
28	RM_38	23° 45' 49.225"	74° 57' 22.745"
29	RM_39	23° 45' 45.789"	74° 56' 18.906"
30	RM_41	23° 45' 55.547"	74° 56' 25.826"
31	RM_42	23° 45' 23.728"	74° 57' 10.318"
32	RM_43	23° 47' 32.845"	74° 59' 21.058"
33	RM_44	23° 47' 29.747"	74° 58' 12.750"
34	RM_45	23° 47' 36.152"	74° 58' 6.070"

35	RM_48	23° 47' 39.118"	74° 58' 44.623"
36	RM_49	23° 47' 43.316"	74° 59' 23.990"
37	RM3_01	23° 50' 29.519"	74° 57' 14.203"
38	RM3_02	23° 50' 37.583"	74° 57' 11.973"
39	RM3_03	23° 50' 45.583"	74° 57' 15.470"
40	RM3_08	23° 50' 32.270"	74° 58' 39.328"
41	RM3_09	23° 50' 21.832"	74° 58' 37.456"
42	RM3_10	23° 50' 6.553"	74° 59' 14.328"
43	RM3_11	23° 50' 25.804"	74° 59' 32.992"
44	RM3_12	23° 50' 48.892"	74° 59' 48.864"
45	RM3_13	23° 50' 46.517"	74° 59' 20.122"
46	RM3_14	23° 51' 3.231"	74° 59' 30.267"
47	RM3_16	23° 51' 6.901"	74° 58' 44.060"
48	RM3_17	23° 51' 23.579"	74° 58' 21.783"
49	RM3_18	23° 51' 31.349"	74° 58' 18.175"
50	RM3_19	23° 51' 1.759"	74° 58' 16.979"
51	RM3_22	23° 51' 51.604"	74° 58' 0.138"
52	RM3_23	23° 51' 25.764"	74° 59' 13.401"
53	RM3_28	23° 52' 5.757"	74° 58' 51.263"
54	RM3_30	23° 52' 22.990"	74° 58' 41.855"
55	RM3_32	23° 51' 59.161"	74° 59' 53.317"
56	RM3_33	23° 52' 14.671"	75° 0' 15.699"
57	RM3_34	23° 52' 24.199"	75° 0' 11.174"
58	RM3_35	23° 50' 51.456"	74° 58' 50.107"

59	RM3_39	23° 51' 51.292"	75° 0' 0.743"
60	RM3_40	23° 51' 1.443"	74° 59' 57.136"
61	RM3_41	23° 49' 57.904"	74° 59' 28.398"
62	RM3_42	23° 49' 42.687"	74° 59' 32.712"
63	RM3_43	23° 53' 28.641"	74° 58' 41.490"
64	RM3_44	23° 53' 41.388"	74° 58' 41.630"
65	RM3_45	23° 53' 52.021"	74° 58' 44.457"
66	RM3_46	23° 54' 1.191"	74° 58' 44.809"
67	RM3_48	23° 54' 27.171"	74° 58' 42.683"

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.

The amount of GS-VERs achieved during the present monitoring period is higher than the estimated value in the PDD. This is due to the high PLF months during the monitoring period. The actual achieved emission reduction for this monitoring period is 5.99% more than estimated value in the PDD which is marginal high and with the increased PLF leading to a 5.99% increase in the emission reduction, it does not have a material impact on the additionality. Moreover, in previous Monitoring period the emission reductions were lower than the ex-ante value calculated in PDD, hence the generation depends on the wind conditions and PP has no control over the same. The same is acceptable to the DOE as the trend of PLF is not fixed in the region.

Vintage wise summary for the ER calculation is presented below

Emission Reduction for this monitoring period	373,792	tCO ₂ e
Emission Reduction for 2016	157,132	tCO ₂ e
Emission Reduction for 2017	189,545	tCO ₂ e
Emission Reduction for 2018	27,115	tCO ₂ e

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 PDD and no change in additionality/baseline is envisaged for the present monitoring period.

Assessment team also checked the Feeder details of the connected WTGs and found the same to be appropriate. The detail of the feeders is as below:

FEEDER No.	Project	No. Of WTGs	Capacity in MW
Feeder 1	OMWPL	RM3-34, RM3-33, RM3-32, RM3-39, RM3-16, RM3-35, RM3-14, RM3-13, RM3-40, RM3-12, RM3-08, RM3-09, RM3-11, RM3-10, RM3-41 & RM3-42	24
Feeder 2	OMWPL	RM3-48, RM3-46, RM3-45, RM3-44, RM3-43, RM3-30, RM3-28, RM3-22, RM3-18, RM3-17, RM3-23, RM3-19, RM3-03, RM3-02, RM3-01	22.5
Feeder 3	OMWPL	RM-49, RM-43, RM-33, RM-12, RM-13, RM-36, RM-34, RM-26, RM-16, RM-18, RM-19, RM-20, RM-21, RM-22, RM-25, RM-28, RM-29	25.5
Feeder 4	OMWPL	RM-48, RM-45, RM-44, RM-01, RM-02, RM-03, RM-04, RM-41, RM-39, RM-05, RM-37, RM-06, RM-42, RM-07, RM-08, RM-09, RM-10, RM-11, RM-38	28.5
TOTAL		67	100.5

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 16.0, applied by the proposed GS project activity.

No deviation, correction or permanent change to the monitoring plan has been requested or observed.

3.4 Completeness of Monitoring

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

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

$EF_{OM,y}$, $EF_{BM,y}$, $EF_{CM,y}$, 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_{OM,y}**, **EF_{BM,y}**, and **EF_{CM,y}** was considered from the CO₂ baseline database published by Central Electricity Authority (CEA) version 10.0. 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 PDD for the current monitoring period.

The relevant Emission factor values used for emission reduction calculation is 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.

$EF_{OM, y} = \text{Relevant SDG Indicator} = \text{SDG13: Climate Action} = 0.9862 \text{ tCO}_2\text{e/MWh}$

$EF_{BM, y} = \text{Relevant SDG Indicator} = \text{SDG13: Climate Action} = 0.9495 \text{ tCO}_2\text{e/MWh}$

$EF_{CM, y} = \text{Relevant SDG Indicator} = \text{SDG13: Climate Action} = 0.9770 \text{ tCO}_2\text{e/MWh}$

b. Data and parameters monitored

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

$EG_{\text{facility}, y}$ = Quantity of net electricity supplied to the grid during the year y . = Relevant SDG indicators= **SDG 7 : Affordable and Clean Energy, SDG 13: Climate Action**

The parameter $EG_{\text{facility}, y}$ is calculated using the difference of export and import value measured from the electricity meter. Transmission loss is accounted in Net export at substation based on the readings of Government substation & "primary metering Point". Net electricity supplied to the grid for individual project activity is than calculated as export-import. The Meter Reading Statement issued by State board which provide the Net electricity supplied to the grid by the project activity (= calculated as export-import). The same is thus used for emission reduction calculation. The total energy exported/imported to/from the grid by this WTG is measured by State electricity board via (electronic tri-vector main meter which measures both export & import concurrently) connected to the WTG in the High Tension (HT) yard located besides the each WTGs. 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. On the basis of this reading, Quantity of net electricity supplied to the grid shall be calculated and the statement shall be issued to Project Participant. Based on the statement the Invoice is raised by PP to State electricity board. The practice followed onsite is as per the registered PDD and registered Passport. 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 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 Meter reading statement 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 JMR 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 energy meters (main and check) 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 will be as per the registered PDD and will be calibrated once in a year by the MSEDCL officials, as per the provisions of the PPA, signed between the PP and the M/s Madhya Pradesh Power Management Company limited (MPPTCL). PP has not control whatsoever over the processes related to MPPTCL meters. The joint meter reading can be cross checked against the credit note on energy generation from the WTGs, issued monthly by the MPPTCL.

The Calibration details are presented in Appendix 2 of this report. Calibration Agency for all the meters is M/s Madhya Pradesh Power Management Company limited (MPPTCL). As per the registered PDD, the calibration dates and frequency is under the control of MPPTCL.

The calibration is done by State nodal agency (Meter Testing division), MPPTCL, India 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 observed that the Meters were not calibrated in between some dates of the monitoring period; hence, error factor has been applied for the non-calibrated months i.e. February 2017 to December 2017 conservatively. The same is thus acceptable to the assessment team.

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 Passport Version indicators are chosen for the monitoring of sustainable monitoring:

Meth/tool	Relevant SDG indicator	Passport	MR	Compliance
Quantity of net electricity supplied to the grid during the year y.	SDG 7: Affordable and Clean Energy	Quantity of net electricity supplied to the grid during the year y.	Quantity of net electricity supplied to the grid during the year y.	Yes
Air quality and Dust emission	SDG 13: Climate Action	Air quality and Dust emission	Air quality and Dust emission	Yes
Quality of employment	SDG 8: Decent Work and Economic Growth	Quality of employment	Quality of employment	Yes
Access to affordable and clean energy services	SDG 7: Affordable and Clean Energy	Access to affordable and clean energy services	Access to affordable and clean energy services	Yes
Quantitative employment and income generation	SDG 8: Decent Work and Economic Growth	Quantitative employment and income generation	Quantitative employment and income	Yes

Meth/tool	Relevant indicator	SDG	Passport	MR	Compliance
				generation	
Soil Erosion	SDG 13: Climate Action		Soil Erosion	Soil Erosion	Yes
Maintenance of Landscape visual impact	SDG 13: Climate Action		Maintenance of Landscape visual impact	Maintenance of Landscape visual impact	Yes

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

Relevant SDG Indicator	SDG 7: Affordable and Clean Energy																									
Data/parameter:	EG _{facility,y}																									
Unit	MWh																									
Description	Quantity of net electricity supplied to the grid during the year y.																									
Source of data checked by the assessment team	Share Certificate Issued i.e. JMR (Joint Meter Reading)																									
Value(s) of monitored parameter	382,594 MWh																									
Means of verification:	Assessment team checked that the parameter is calculated. The electricity exported & imported measured by Energy meter installed at substation. Transmission loss is accounted in Net export at substation based on the readings of Government substation & "primary metering Point". Two sets of energy meters (main & check) installed. The details are the meters are given below: <table border="1"> <thead> <tr> <th>Details</th><th>Main meter</th><th>Check meter</th></tr> </thead> <tbody> <tr> <td>Meter Number</td><td>MPC65127</td><td>MPC65126</td></tr> <tr> <td>Make</td><td>Secure</td><td>Secure</td></tr> <tr> <td>Accuracy class</td><td>0.2S</td><td>0.2S</td></tr> <tr> <td>Location</td><td>Substation</td><td>Substation</td></tr> <tr> <td>Last calibration (Before start of current monitoring period)</td><td>11/02/2016</td><td>11/02/2016</td></tr> <tr> <td>Calibration 1</td><td colspan="2">Meters were not calibrated in between these dates; hence, error factor has been applied for the non-calibrated months i.e. February 2017 to December 2017 conservatively.</td></tr> <tr> <td>Calibration 2</td><td>11/12/2017 (valid up to 10/12/2018)</td><td>11/12/2017 (valid up to 10/12/2018)</td></tr> </tbody> </table>		Details	Main meter	Check meter	Meter Number	MPC65127	MPC65126	Make	Secure	Secure	Accuracy class	0.2S	0.2S	Location	Substation	Substation	Last calibration (Before start of current monitoring period)	11/02/2016	11/02/2016	Calibration 1	Meters were not calibrated in between these dates; hence, error factor has been applied for the non-calibrated months i.e. February 2017 to December 2017 conservatively.		Calibration 2	11/12/2017 (valid up to 10/12/2018)	11/12/2017 (valid up to 10/12/2018)
Details	Main meter	Check meter																								
Meter Number	MPC65127	MPC65126																								
Make	Secure	Secure																								
Accuracy class	0.2S	0.2S																								
Location	Substation	Substation																								
Last calibration (Before start of current monitoring period)	11/02/2016	11/02/2016																								
Calibration 1	Meters were not calibrated in between these dates; hence, error factor has been applied for the non-calibrated months i.e. February 2017 to December 2017 conservatively.																									
Calibration 2	11/12/2017 (valid up to 10/12/2018)	11/12/2017 (valid up to 10/12/2018)																								
Cross check mechanism	The net electricity is cross-checked with the invoice copies. The same is also produced in the emission reduction calculation.																									

Relevant SDG Indicator	SDG 13: Climate Action
Data/parameter :	Air quality
Unit	CO ₂ emission reduction and reduction in dust generation
Description	In order to reduce dust emissions during the construction phase, the following dust suppression measures stipulated and implemented: • Spraying water and covering material trucks' body to minimize dust; • Reuse of water for sprinkling of unpaved roads. • Imposition of speed controls for vehicles and unpaved site roads; • Well-maintained diesel-powered mechanical equipment to avoid black smoke emissions; • Shut-down of diesel-powered mechanical equipment or trucks inside the worksites when they are not in operation. • During the operational phase (monitoring period) the scope of dust emission none to minimal. Vehicles are run under controlled speed to avoid any dust generation.
Source of data checked by the assessment team	Central Electricity Authority: "CO₂ Emission Database CEA CO₂ Baseline database Version 10" published by Central Electricity Authority (CEA), Ministry of Power, Government of India. http://cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver10.pdf
Value(s) of monitored parameter	373,793 tCO_{2e} emission reductions achieved during the reported monitoring period. The applied OM & BM for the project are as following: Operating Margin: 0.9862 tCO₂/MWh Build Margin: 0.9495 tCO₂/MWh The applied Combined margin for the project activity is 0.9770 tCO₂/MWh. This high emission factor signifies the fact that the electricity being fed in the Indian grid (earlier NEWNE) is highly carbon intensive. Every MWh of electricity generated by the project activity prevents further emissions. During Commissioning phase, dust generation was controlled through strict practice of control measures at site, which includes no soil piles, open trucks, controlled vehicle speed. It also included sprinkling of water if required. The project makes positive impact on this parameter. It resulted in emission reductions hence is helping in climate change mitigation.

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. Moreover, Dust generation is controlled through strict practice of control measures at site, which includes no soil piles, open trucks, controlled vehicle speed. It also includes sprinkling of water if required during Construction phase. During the operational phase (Monitoring period) the scope of dust emission none to minimal as checked by the assessment team during the site visit. Baseline situation of parameter According to latest CEA official data CO₂ emissions due to electricity generation in 2014 are: 764.2 tons/GWh. There was no project related activity and hence no resultant dust due to construction or project's vehicle movements. Future target for parameter Continuation of strict control measures for prevention of dust generation. Optimal operation of wind power project to generate clean energy and associated emission reductions.
Cross check mechanism	Not applicable

Relevant SDG Indicator	SDG 8: Decent Work and Economic Growth
Data/parameter:	Quality of employment
Unit	Number of Trainings provided to employees & O&M staffs
Description	Trainings provided to employees & O&M staff
Source of data checked by the assessment team	Training Records (HSE & HR) & Employee feedback forms
Value(s) of monitored parameter	Trainings & workshops were conducted to the O&M staffs by management of Re-generation. • Height Safety and Self Rescue Training Program held in devgarh site however 6 employees of Mamatkhed site took place for the training dated 9-April 2017 to 13-April-2017 • 10 employees took part in Mock Drill for the Emergency situation dated 09- May 2017 • 4 workers took training on "Work at height & Self Rescue" dated April 2017 to 13- April 2017 The records of training & workshops are checked by the assessment team. 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

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. 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

Relevant SDG Indicator	SDG 7: Affordable and Clean Energy
Data/parameter:	Access to affordable and clean energy services
Unit	MWh
Description	Net electricity supplied to grid
Source of data checked by the assessment team	Share Certificate i.e. JMR (Joint Meter Reading)
Value(s) of monitored parameter	382,594 MWh net electricity is supplied to NEWNE grid by the project activity. The project helps in improving Indian grid power deficit by feeding its entire electricity to the national grid, which in-turn supplies electricity to households and industries alike. The generation of electricity from wind power project is not dependent on any fossil fuel availability and prices, hence, the price of electricity from such projects are fixed. By reducing the power deficit and stabilizing the price of power, the project makes a positive impact on the current parameter.

Means of verification:	Net electricity supplied is calculated based on the difference between calculated values of "export" (which already accounts for losses during transmission) and "import" on the EB energy meter at the Government substation. Transmission loss is accounted in Net export at substation based on the readings of Government substation & "primary metering Point". (Net Electricity = Export – Import) Assessment team checked Net electricity will be calculated by DISCOM and O&M operator on monthly basis and provided in the share certificate. The procedure is as per the registered Passport and PDD and thus acceptable to the assessment team. Baseline situation of parameter In the baseline the grid was mainly dominated by fossil fuel power plant and not able to meet the demand. The introduction of Renewable power to the grid in turn help to meet the demand and also have positive effect in the environment Future target for parameter To monitor continuously SDG7
Cross check mechanism	The net electricity is cross-checked with the invoice copies. The same is also produced in the emission reduction calculation

Relevant SDG Indicator	SDG 8: Decent Work and Economic Growth
Data/parameter:	Quantitative employment and income generation
Unit	1. Cost spent for O&M 2. Number of O&M staffs involved in the project
Description	Number of people employed directly due to the project activity
Source of data checked by the assessment team	Plant employment records
Value(s) of monitored parameter	The total number of O&M staffs employed by the ReGen and Orange for the operation & maintenance of the project activity are around 82. This includes 23 number of O&M team of ReGen, 53 Site security, 2 Asset management, 4 Drivers for all north & south location employed at project site. Assessment team checked that the cost of O&M is 14 lakhs per WTG which works at 938 lakhs for the project per year with 5% escalation, which helps in creating service based jobs in the project region. There is no amount paid to the O&M, as the cost of first 2 years of O&M is inclusive in the supply order. For the monitoring period from 01/01/2017 to 31/03/2018, the O & M cost was 118291370 INR for all the 67 WTGs of the project as per the O & M Contract signed with Re-Gen.

	Monitoring period	Total Cost of O & M (INR lakhs)															
	Total O & m cost for monitoring period 01/04/2016 to 31/03/2018	118291370															
	The parameter has a positive impact as the project results in direct employment and income generation																
Means of verification:	After checking daily attendance register and employment records assessment team confirms that the total number of O&M staffs employed by the ReGen and Orange for the operation & maintenance of the project activity are around 82. This includes 23 number of O&M team of ReGen, 53 Site security, 2 Asset management, 4 Drivers for all north & south location employed at project site. Yearly data for employment <table border="1"> <thead> <tr> <th>Serial number-year</th><th>Number of people from Re-gen (O&M team and sub-contractors)</th><th>Number of local people- Non –skilled job- Site security and drivers</th></tr> </thead> <tbody> <tr> <td>Year 2016</td><td>12</td><td>20</td></tr> <tr> <td>Year 2017</td><td>5</td><td>30</td></tr> <tr> <td>Year 2018</td><td>6</td><td>2</td></tr> <tr> <td>Total</td><td>23</td><td>53+ 4 drivers in the year 2016</td></tr> </tbody> </table> The parameter has a positive impact as the project results in direct employment and income generation. Assessment team confirm that the monitoring parameters target is achieved for the present monitoring period. Baseline situation of parameter In the baseline, local people have no such job opportunities from the project, and their income has no increase. Future target for parameter To Continuously monitor SDG 8 parameter		Serial number-year	Number of people from Re-gen (O&M team and sub-contractors)	Number of local people- Non –skilled job- Site security and drivers	Year 2016	12	20	Year 2017	5	30	Year 2018	6	2	Total	23	53+ 4 drivers in the year 2016
Serial number-year	Number of people from Re-gen (O&M team and sub-contractors)	Number of local people- Non –skilled job- Site security and drivers															
Year 2016	12	20															
Year 2017	5	30															
Year 2018	6	2															
Total	23	53+ 4 drivers in the year 2016															
Cross check mechanism	Not applicable																

Relevant SDG Indicator	SDG 13: Climate Action
Data/parameter:	Soil Erosion
Unit	Area
Description	General soil erosion and sediment control measures would include: • Keep open areas of excavation to a minimum and construction activities restricted to dry months to avoid heavy rainfalls; • Using existing roads and lanes used by land owner. • Stockpiles of materials placed away from drainage lines and formed with sediment control structures placed immediately down slope; • Construction debris and excavated material were cleared up at regular intervals • Excavated material stock piled and used for backfilling of foundations, platforms etc. • Minimization of traffic in construction zones and use of a dedicated parking area, i.e. site compound; • Re-vegetation taken up as necessary after construction, in order to reduce the risk of soil erosion. •
Source of data checked by the assessment team	Project O&M HSE logbook, or interview with maintenance staff
Value(s) of monitored parameter	The O&M log book records all the parameters as listed: • Hazardous waste generated, disposed, any spillages • Waste oil generated, disposed, any spillages • Leakage of any diesel or waste oil The same O&M HSE logbook is checked by the DOE. This parameter has a neutral (0) impact as there has been no incidence of oil leakage or inappropriate disposal of hazardous or waste oil during the monitoring period. Hazardous waste generated in form of oil soaked cotton have been collected and disposed in line with the disposal procedure.

Means of verification:	Assessment team checked the O&M HSE logbook and found that following actions were taken to avoid soil erosion: • Hazardous waste generated, disposed, any spillages • Waste oil generated, disposed, any spillages • Leakage of any diesel or waste oil Moreover, during the interview with the local people it is found that following general rules are applied to avoid soil erosion: • Keep open areas of excavation to a minimum and construction activities restricted to dry months to avoid heavy rainfalls; • Using existing roads and lanes used by land owner. • Stockpiles of materials placed away from drainage lines and formed with sediment control structures placed immediately down slope; • Construction debris and excavated material were cleared up at regular intervals • Excavated material stock piled and used for backfilling of foundations, platforms etc. • Minimization of traffic in construction zones and use of a dedicated parking area, i.e. site compound; • Re-vegetation taken up as necessary after construction, in order to reduce the risk of soil erosion. The parameter as such is neutral as no evidence of leakage of oil observed during the monitoring period. Baseline situation of parameter In the baseline there were no soil erosion observed however there were also no vegetation as such which may lead to erosion of soil. Future target for parameter To Continuously monitor SDG 13 parameter
Cross check mechanism	Not applicable

Relevant SDG Indicator	SDG 13: Climate Action
Data/parameter:	Maintenance of Landscape visual impact
Unit	Aesthetics
Description	Detailed ESIA study conducted to understand if any of the location needs to be altered. Locals were consulted wherever a WTG location or access road was in vicinity to a settlement. The WTGs are painted with non-reflect paints and are not glary. Re-vegetation taken up as necessary after construction, in order to reduce the risk of soil erosion.
Source of data checked by the assessment team	Project Grievance register, or interview with local villagers
Value(s) of monitored parameter	No significant visual impact observed and no grievances received.

	Vegetation has been grown wherever possible in the project's land. Apart from this, the project proponent has planted a number of trees to improve the landscape visual impact. The parameter has a neutral (0) impact as there are no grievances received or registered. The WTGs are spread across the terrain and hence have minimalistic presence.
Means of verification:	Assessment team observed during the site visit that vegetation has been grown wherever possible in the project's land. Apart from this, the project proponent has planted a number of trees to improve the landscape visual impact. The parameter has a neutral (0) impact as there are no grievances received or registered. The grievances register was also checked and assessment team confirm that no negative comments were observed and local people are happy with the implementation of the project activity as it not only improved landscape visual impact by planting trees and vegetation to improve soil erosion but also elevated the lifestyle of the villagers because it provided job opportunities as described earlier. Baseline situation of parameter In the baseline there were less trees and vegetation were minimal. Future target for parameter To Continuously monitor SDG 13 parameter
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 no comments received from the local people for the present monitoring period. 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.

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. Gupta, 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.

Local stakeholder meeting details:

Name of the stakeholder	SR Venkat
Occupation	Farmer
DOE QUESTION: Did PP promised employment opportunity? Answer: Yes, PP told us that employment will be generated and the locals will be given priority. 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	Balu TR
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.	

Name of the stakeholder	Santosh
Occupation	Teacher
DOE question: Did the power plant produces noise which effect the livelihood of the Villager Answer: No sound is produced from the Wind turbine which may lead to hearing problem for the local people. The locals are happy with the implementation of the project activity.	

Name of the stakeholder	Hari
Occupation	Shopkeeper
DOE questions: Did the power plant causes any Soil erosion Answer: The project participant Excavated material stock piled and used for backfilling of foundations, platforms etc. They also have done Vegetation to avoid any kind of soil erosion.	

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Name of the stakeholder	Lalit
Occupation	Villager
DOE questions: Did the project help in improving the livelihood of the ,nearby local people Answer: Before the implementation of the project activity local people are employed as Labour 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.	

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= DOE assessment
SDG 7: Affordable and Clean Energy	$= 180,478 * 730 / 365$ 360,956 MWh	382,594 MWh	382,594 MWh. Please see the above table for detail explanation
SDG 8: Decent Work and Economic Growth	0	3 trainings INR 93.8 million 82 staff	3 trainings INR 93.8 million 82 staff Please see the above table for detail explanation
SDG 13: Climate Action	352,662 tCO ₂ e No soil erosion No impact on aesthetics	0 No soil erosion No impact on aesthetics	373,793 tCO ₂ e No soil erosion No impact on aesthetics Please see the above table for detail explanation

Comparison of actual value of outcomes with estimates in approved PDD

Item	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period
SDG 7: Affordable and Clean Energy	$= 180,478 * 730 / 365$ 360,956 MWh	382,594 MWh
SDG 8: Decent Work and Economic Growth	3 trainings INR 93.8 million 82 staff	3 trainings INR 93.8 million 82 staff
SDG 13: Climate Action	$= 352,662 \text{ tCO}_2$ No soil erosion No impact on aesthetics	373,793 tCO ₂ No soil erosion No impact on aesthetics

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 03 and corresponding ER calculation spreadsheets and are consistent with the applied methodology ACM0002 version 16.0 and the monitoring plan contained in the registered 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 spreadsheets. The verification process for the same has been clearly described in above section of the report. See below for the detailed data:

Baseline Emissions for the amount of electricity supplied by project activity, BE_y is calculated as:

$$BE_y = EG_{PJ,y} * EF_{CM,y}$$

Where,

BE_y = Baseline emissions in year y (tCO₂/yr)

$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr).

$EF_{grid,CM,y}$ = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (tCO₂/MWh)

For this monitoring period, the emission reduction is calculated as below:

$$= 382,594 \text{ (MWh)} * 0.977 \text{ (tCO}_2\text{/MWh)}$$

$$= 373,792 \text{ tCO}_2 \text{ (rounded down)}$$

Project emissions:

The project is a Wind power project, no fossil fuel will be consumed according to the methodology ACM0002 version 16.0 & according to registered PDD, $PE_y = 0 \text{ tCO}_2e$

Leakage:

As per ACM0002 version 16.0, No leakage emission needs to be considered.

Emission reductions:

Thus the emission reductions are:

$$ER_y = BE_y - PE_y$$

$$= 373,792 \text{ tCO}_2e$$

The amount of GS-VERs achieved during the present monitoring period is higher than the estimated value in the PDD. This is due to the high PLF months during the monitoring period. The actual achieved emission reduction for this monitoring period is 5.99% more than estimated value in the PDD which is marginal high and with the increased PLF leading to a 5.99% increase in the emission reduction, it does not have a material impact on the additionality. Moreover in previous Monitoring period the emission reductions were lower than the ex-ante value calculated in PDD, hence the generation depends on the wind conditions and PP has no control over the same. The same is acceptable to the DOE as the trend of PLF is not fixed in the region.

Vintage wise summary for the ER calculation is presented below

Emission Reduction for this monitoring period	373,792	tCO ₂ e
Emission Reduction for 2016	157,132	tCO ₂ e
Emission Reduction for 2017	189,545	tCO ₂ e
Emission Reduction for 2018	27,115	tCO ₂ e

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.

All the data and documents, either hard copies or soft copies, will be 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 06/04/2018, Monitoring report version 02 dated 15/05/2018, Monitoring report version 03 dated 03/07/2018
/02/	ER sheets version 1.0 ER Sheets version 2.0
/03/	Registered PDD Version 03 dated 14/03/2016
/04/	Registered Passport Version 02 dated 14/02/2016
/05/	GS Validation Report
/06/	ACM0002 version 16.0 Tool to calculate the emission factor for an electricity system"
/07/	Validation and Verification Standard Version 1.0
/08/	The Gold Standard Toolkit Version 2.2 and GS4GG guideline
/09/	Training records of the employees (both skilled/non skilled)
/10/	O&M policy
/11/	Monthly reports issued by state utility and invoices raised by PP for the complete monitoring period
/12/	Calibration certificates of the complete monitoring period
/13/	Commissioning certificates for power plant
/14/	Log book records for scheduled maintenance of the power plant for the complete monitoring period

/15/	Sample work contract for both skilled and non-skilled manpower
/16/	CSR report
/17/	Grievance register
/18/	Bat and Bird register
/19/	HSE procedures
/20/	Power purchase agreement
/21/	O&M agreement
/22/	Technical manual from the Manufacturer

5. **FINAL VERIFICATION STATEMENT**

Applus+ Certification has been engaged by Orange Mamatkhedha Wind Private Limited (OMWPL) to perform the 2nd periodical verification of the “100.5 MW Wind Power Project in Madhya Pradesh, India” (GS Ref. No. 3969).

The management of Orange Mamatkhedha Wind Private 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 PDD, registered Passport and the applied methodology ACM0002 version 16.0.

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 passport approved by the EB and GS;
- the monitoring plan is as per the applied methodology;
- the monitoring in Monitoring Report is as per the PDD and Passport and the monitoring plan approved by the EB and 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 “100.5 MW Wind Power Project in Madhya Pradesh, India” for the monitoring period 01/04/2016 to 31/03/2018 (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: 01/04/2016 to 31/03/2018 (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	373,792 tCO ₂ e equivalents
Emission reductions	373,792 tCO ₂ e equivalents

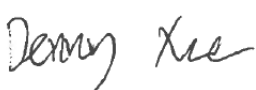
Vintage wise yearly data is as below:

Emission Reduction for this monitoring period	373,792	tCO ₂ e
Emission Reduction for 2016	157,132	tCO ₂ e
Emission Reduction for 2017	189,545	tCO ₂ e
Emission Reduction for 2018	27,115	tCO ₂ e

Date: 09/07/2018
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:	04/05/2018
During the document verification it was observed that the feeder details of the power plant is missing. Correction along with the supporting is sought for the same. Commission Certificate of the power plant is missing Technical Manual of the power plant is missing. O&M contract signed with Re-Gen is missing Power purchase agreement signed is missing			
Project Participant's response		Date:	15/05/2018
The feeder details of the power plant have been incorporated in the revised MR version 2.0. The Power Evacuation Layout is also been provided to DOE. Commission Certificate of the power plant has been provided to the DOE. Technical Manual of the power plant has been provided to the DOE. O&M contract signed with Re-Gen has already been provided to the DOE. Signed Power purchase agreement has already been provided to the DOE.			
Documentation provided as evidence by Project Participant			
Evacuation Layout Commission Certificate Technical Manual. O&M contract Signed Power purchase agreement			

Auditor's assessment comment	Date:	17/05/2018
Following are the observation of the DOE: 1. The feeder details are now submitted to the DOE and also revised in the MR Version 2.0. CAR is thus closed 2. The Commission Certificate is checked and found correct. CAR is thus closed 3. The technical manual from the manufacturer is checked and found correct by the assessment team. CAR is thus closed 4. O&M agreement signed with Re-Gen power is checked and found correct by the assessment team. CAR is thus closed 5. The power purchase agreement signed between PP and State electricity board is checked and found correct by 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:	04/05/2018
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:	15/05/2018
The below link having the log records for MMK plant break down of the Monitoring period 01/04/2016 to 31/03/2018 i.e. FY 2016-17 & FY 2017-18 have already been provided to the assessment team.			
Documentation provided as evidence by Project Participant			
Log records for plant break down			
Auditor's assessment comment		Date:	17/05/2018
The breakdown log details are checked and found correct by the assessment team. The power plant undergone scheduled maintenance as per the manufacturer recommendation and no unforeseen incident is observed during the monitoring period. CAR is thus closed.			

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	03
Raised by:	Sukanta	Ref. to checklist in above	NA

	tables:	
Description of the audit finding	Date:	04/05/2018
Following observation is made by the DOE regarding monitoring parameter: - For the Parameter SDG 13: Climate Action: it is mentioned that "Dust generation is controlled through strict practice of control measures at site". Please detail out the practice with documentary evidence. Corrective action is sought for the same. - For the parameter SDG 8: Decent Work and Economic Growth is linked with Quality of employment which is acceptable to the assessment team. However, the Training Records (HSE & HR) & Employee feedback forms are not submitted to the DOE. Corrective action is sought for the same. - For the parameter SDG 8: Decent Work and Economic Growth is linked to Quantitative employment and income generation. However, the daily attendance register is not provided to DOE. Moreover, PP claimed that around 53 people are employed however it is not mentioned whether they are permanent or adhoc basis. 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. - For the parameter SDG 13: Climate Action Project O&M HSE logbook is not submitted to the DOE. Corrective action is sought for the same - For the parameter SDG 13: Climate Action project grievance register is not submitted to the DOE. Corrective action is sought for the same - For the parameter SDG15 Life on Land Bird Strike register is not provided to the DOE. Corrective action is sought for the same.		
Project Participant's response	Date:	15/05/2018
- The Parameter SDG 13 "reduction in dust generation" mentions dust reduction methods to be adopted during construction phase. The steps taken during construction phase were checked by the DOE during validation stage. There are no Dust reduction measures applicable for operational phase. Further CO2 emission reductions have been considered under this parameter for every monitoring period in line with the GS Passport. Relevant monitoring procedures have been described in the revised MR. - Three following trainings occurred for the Mamatkhed employees by the Project. - Height Safety and Self Rescue Training Program held in devgarh site however 6 employees of Mamatkhed site took place for the training. - Mock Drill for the Emergency situation. Total 10 employees were part of the mock drill. 4 employees were provided Training on "Work at height & Self Rescue". The trainings Records (HSE & HR) & Employee feedback forms held in MMK Project activity have been provided to the DOE.		

3. The daily register has been provided to the DOE.

Total 82 employees have been appointed in the OMWPL. 15 employees are full time nonlocal whereas 67 are fulltime locals. All the employees are permanent employees. Further details are now incorporated in the revised MR ver. 02.

4. For the parameter SDG 13: Climate Action Project O&M HSE logbook is submitted to the DOE.
5. For the parameter SDG 13: Climate Action project; grievance register is submitted to the DOE.
6. For the parameter SDG15 Life on Land, Bird Strike is recorded as part of HSE monitoring. No bird strike has been observed. HSE report is provided to the DOE.

Documentation provided as evidence by Project Participant

1. Trainings Records
2. Daily register
3. Project O&M HSE logbook
4. Grievance register
5. HSE report – pls refer serial no 13 other incidents.

Auditor's assessment comment

Date:

17/05/2018

Following are the observations of the DOE:

1. There are no Dust reduction measures applicable for operational phase. The details are now mentioned as per the revision of MR Version 2.0. CAR is thus closed.
2. The training records are checked by the assessment team. Following training are observed :
 - Height Safety and Self Rescue Training Program held in devgarh site however 6 employees of Mamatkhed site took place for the training.
 - Mock Drill for the Emergency situation. Total 10 employees were part of the mock drill.
 - 4 employees were provided Training on "Work at height & Self Rescue".

The training records are found satisfactory and thus CAR is closed.

3. Assessment team observed that total 82 employees have been appointed in the OMWPL. 15 employees are full time nonlocal whereas 67 are fulltime locals. All the employees are permanent employees. Further details are now incorporated in the revised MR ver. 02. CAR is closed.
4. O&M HSE log book is checked and assessment team confirm that target for the parameter is achieved for the monitoring period. CAR is thus closed
5. The grievance register is checked and it is observed that no negative comments were received during construction and operation stage of the project activity. CAR is thus closed

6. The Bird Strike is recorded as part of HSE monitoring. The HSE monitoring reports are checked and it is confirmed that No bird strike has been observed during the monitoring period. CAR is thus closed.

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	04																					
Raised by:	Sukanta Das	Ref. to checklist in above tables:	NA																					
Description of the audit finding		Date:	04/05/2018																					
The calibration certificate for the present monitoring period is not submitted to the DOE. Corrective action is sought for the same.																								
Project Participant's response		Date:	15/05/2018																					
The calibration certificate for the present monitoring period has already been submitted to the DOE. The calibration details for both the Main meter and Check meter are as follows: <table border="1"> <thead> <tr> <th>Details</th> <th>Main meter</th> <th>Check meter</th> </tr> </thead> <tbody> <tr> <td>Meter Number</td> <td>MPC65127</td> <td>MPC65126</td> </tr> <tr> <td>Make</td> <td>Secure</td> <td>Secure</td> </tr> <tr> <td>Accuracy class</td> <td>0.2S</td> <td>0.2S</td> </tr> <tr> <td>Location</td> <td>Substation</td> <td>Substation</td> </tr> <tr> <td>Last calibration (Before start of current monitoring period)</td> <td>11/02/2016</td> <td>11/02/2016</td> </tr> <tr> <td>Calibration 2</td> <td>11/12/2017 (valid up to 10/12/2018)</td> <td>11/12/2017 (valid up to 10/12/2018)</td> </tr> </tbody> </table> However, meters were not calibrated in between these dates; hence error factor has been applied for the non calibrated months i.e. February 2017 to December 2017 conservatively.				Details	Main meter	Check meter	Meter Number	MPC65127	MPC65126	Make	Secure	Secure	Accuracy class	0.2S	0.2S	Location	Substation	Substation	Last calibration (Before start of current monitoring period)	11/02/2016	11/02/2016	Calibration 2	11/12/2017 (valid up to 10/12/2018)	11/12/2017 (valid up to 10/12/2018)
Details	Main meter	Check meter																						
Meter Number	MPC65127	MPC65126																						
Make	Secure	Secure																						
Accuracy class	0.2S	0.2S																						
Location	Substation	Substation																						
Last calibration (Before start of current monitoring period)	11/02/2016	11/02/2016																						
Calibration 2	11/12/2017 (valid up to 10/12/2018)	11/12/2017 (valid up to 10/12/2018)																						
Documentation provided as evidence by Project Participant																								
Calibration Certificates																								
Auditor's assessment comment		Date:	17/05/2018																					
The calibration certificate are checked and found correct by the assessment team. However, meters were not calibrated in between February 2017 to December 2017; hence																								

error factor has been applied for the non-calibrated months i.e. February 2017 to December 2017 conservatively. The same is thus acceptable to the DOE. CAR is closed.

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	05
Raised by:	Sukanta Das	Ref. to checklist in above tables:	
Description of the audit finding		Date:	04/05/2018
The invoice to cross check the JMR values and Net electricity supplied is not provided to the assessment team. Moreover, the raw data for JMR and invoice is not matched in the ER sheet. Corrective action is sought for the same.			
Project Participant's response		Date:	15/05/2018
The invoices and the JMR have been provided to the assessment team. Moreover, the raw data for JMR and invoice is now matching with the ER sheet.			
Documentation provided as evidence by Project Participant			
JMRs Invoice			
Auditor's assessment comment		Date:	17/05/2018
The JMR sheets and the invoices for the complete monitoring period is checked and found correct by the assessment team. The raw data for JMR and invoice is now matched in the ER sheet.			
CAR is thus closed.			



LGAI Technological Center, S.A.
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

Appendix 2: Calibration details of monitoring meters

Details	Main meter	Check meter
Meter Number	MPC65127	MPC65126
Make	Secure	Secure
Accuracy class	0.2S	0.2S
Location	Substation	Substation
Last calibration (Before start of current monitoring period)	11/02/2016	11/02/2016
Calibration 1	Meters were not calibrated in between these some months; hence, error factor has been applied for the non-calibrated months i.e. February 2017 to December 2017 conservatively.	
Calibration 2	11/12/2017 (valid up to 10/12/2018)	11/12/2017 (valid up to 10/12/2018)

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.
Hanshen (Denny) Xue	Hanshen (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.