

VERIFICATION REPORT AND CERTIFICATION STATEMENT

Of

100 MW Wind Power Project at Anantapur, Andhra Pradesh

(GS Ref. No. GS4557)

**Monitoring period #1: 28/03/2016 to 31/03/2018 (Both
days included) (Both days included)**

Report No. A+SH_SYST_TQC_GS_VER_3418

Client: Orange Anantapur Wind Power Private Limited

DATE: 22/06/2018

Report No.	Date of first issue	Revision No.	Date of this revision
4557 GS VER	28/05/2018	2.0	22/06/2018
Subject	GS 1 st periodic Verification		
Client	Orange Anantapur Wind Power Private Limited		
Project Title	100 MW Wind Power Project at Anantapur, Andhra Pradesh		
Project Participants	Orange Anantapur Wind Power Private Limited		
Project Location	The project is located at Nimbagallu, Amidyala, mopidi, Renumakulapalli, Indravathi villages of Uravakonda Mandal, Anantapur District, Andhra Pradesh, India		
Contact Person	Mr. Pavan Gupta		
Monitoring period:	28/03/2016 to 31/03/2018 (Both days included)		
Initial Monitoring Report (version/date)	Version 1.0; 27/03/2018		
Final Monitoring Report (version/date)	Version 4.0; 22/06/2018		
Applied Methodology/Version	ACM0002- Grid-connected electricity generation from renewable sources - Version 17.0		
Scope	1		
Technical Area	1.2		
Registered PDD:	https://mer.markit.com/br-reg/public/project.jsp?project_id=10300000010216 Registered PDD version 04 dated 26/01/2018		
Registered Passport	Registered Passport : version 03 dated 26/01/2018		
Summary:			
<p>LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by Orange Anantapur Wind Power Private Limited to perform the first periodical verification of "100 MW Wind Power Project at Anantapur, Andhra Pradesh" (Ref. No. 4557) applying the methodology ACM0002 version 17.0. The management of Orange Anantapur Wind Power Private Limited is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions.</p> <p>A desk review and a site visit have been conducted to verify the data submitted in the monitoring report. Applus+ Certification confirms that the following has been reviewed:</p>			

- a. The registered PDD and Passport, including the monitoring plan and the corresponding validation 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 related Annex.
- f. All information and references relevant to the project activity's resulting in emission reductions.

Orange Anantapur Wind Power Private Limited (OAWPPL) has set up wind power project in the villages of Nimbagallu, Amidyala, Mopidi, Indravathi and Renumakulapalli in Uravakonda Mandal, Anantapur District, Andhra Pradesh with capacity of 100 MW (50 X 2 MW).

The project activity generates clean electricity with utilization of wind energy. The project consists of 50 Wind Turbine Generators (WTGs) of Gamesa G 97 turbines of 2 MW each.

The electricity generated by the project is exported to the Indian electricity grid. The project activity displaces an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid and thereby has resulted in reduction of the associated CO₂ emissions. The monitoring of emission reduction and sustainable development indicators has been carried out in accordance to respective registered PDD and Passport.

The present monitoring period is from 28/03/2016 to 31/03/2018 through which emission reduction claimed is 303,953 tCO₂e. All the project WTGs were commissioned on the same day i.e. 28/03/2016.

The project proponent has chosen to start the crediting period from 28/03/2016.

Applus+ Certification confirms that the project is implemented in accordance with the validated and registered PDD and Passport. The monitoring plan complies with the applied methodology ACM0002 version 17.0 and the Gold Standard Toolkit Version 2.2, 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 303,953 tCO₂e emission reductions during period 28/03/2016 to 31/03/2018 (Both days included)

Assessment team	Role	Organization
Sukanta Das	LA/TE	True Quality Certifications private Limited-Outsourced entity
Reviewer team	Role	Organization
Simon Shen	TR	Applus+ Certification

ABBREVIATIONS

ACM	Approved Consolidated Methodology
Applus+ Certification	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
CM	Combined Margin
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
DOE	Designated Operational Entity
EF	Emission Factor
EIA	Environmental Impact Assessment
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GS	Gold Standard
KP	Kyoto Protocol
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-Governmental Organization
TAC	Gold Standard Technical Advisory Committee
OM	Operational Margin
PDD	Project Design Document
PP	Project Participant
UNFCCC	United Nations Framework Convention for Climate Change
VVS	Validation and Verification Standard

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1. INTRODUCTION

1.1.- Objective

LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by Orange Anantapur Wind Power Private Limited to perform the 1st periodical verification of "100 MW Wind Power Project at Anantapur, Andhra Pradesh" applying the methodology ACM0002 version 17.0 and the Gold Standard Toolkit Version 2.2/08/. 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 comply with the requirements of paragraph 62 of the CDM Modalities and Procedures as well as the Gold Standard Toolkit Version 2.2/08/. According to this assessment Applus+ Certification shall:

- Ensure that the project activity has been implemented and operated as per the registered PDD/03/ and Passport/04/ 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 Toolkit Version 2.2 requirements/08/;
- 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 is recorded and stored as per the ACM0002 version 17.0.

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/03/ and registered Passport/04/ as well as its validation report, the applied monitoring methodology, relevant decisions, clarifications and guidance from the CMP and the EB, The Gold Standard Toolkit Version 2.2 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, The Gold Standard Toolkit Version 2.2/08/and related rules and guidance.

Based on the requirements in the VVS version 01 for the project activity/07/ as well as the Gold Standard Toolkit Version 2.2 /08/, 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:

Project activity:	100 MW Wind Power Project at Anantapur, Andhra Pradesh
Gold Standard registration number:	GS 4557
Project Participants:	Orange Anantapur Wind Power Private Limited
Location of the project:	The project is located at Nimbagallu, Amidyala, mopidi, Renumakulapalli, Indravathi villages of Uravakonda Mandal, Anantapur District, Andhra Pradesh, India

The purpose of the proposed project is to generate electricity by utilizing clean wind energy and to reduce the greenhouse gas emissions, which otherwise would have been emitted by the existing fossil fuel based power plants connected to the National grid in India or the addition of similar kind of fossil fuel based power plants.

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.

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. Simon Shen	TR	YES	YES	NA	NA

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

1. **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.
2. **Meng (Simon) Shen** (Master Degree in Thermal Energy Engineering, Bachelor Degree in Environmental Engineering) is a Lead Auditor appointed by Applus+ LGAI for the GHG project assessment. He is based in Shanghai. He has several years of work experience in environmental protection field. Before he joined Applus+ LGAI, he had been worked for TÜV SÜD as a GHG Validator/Assessment team and ISO 9001/14001 Lead Auditor for 3.5 years

1.4.-Review of Documentation

The Monitoring Report version 1.0 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/[03](#)/and Passport/[04](#)/, 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.

A complete list of documents reviewed is available in chapter 4 of this report.

1.5.-On-site Assessment and follow-up Interviews

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

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Gupta	Pavan	PP representative	11/05/2018	Project implementation, Baseline emissions, ER calculations, Sustainable monitoring etc.	Mr. Sukanta Das
2	Kumar	Rajesh	Local stakeholder	11/05/2018	Stakeholder meeting- Employment opportunities, Standard of Livings etc.	Mr. Sukanta Das
2	-	Amit	Local stakeholder	11/05/2018	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 Sustainability monitoring plan as per the registered Passport
- To understand grievance (if any) from the villagers during the monitoring period.

1.6.-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 3.0. The source of the evidences will be discussed in section 4.0 of this report. 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.

1.7.-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:

- a) 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;
- b) Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;
- c) Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;
- d) 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.

All CARs, CRs and FARs for this verification period are included in Section 3 of the verification report.

1.8.-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. In case one of these two persons is part of the assessment team, the 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.

2. VERIFICATION FINDINGS

In the following sections, the results of the verification are stated. The verification results related to the project performance as documented and described in the registered PDD (Version 04, 26/01/2018/03/, registered Passport (Passport Version 03 dated 26/01/2018)/04/. The verification findings for each verification subject are presented below.

2.1.-FARs from Validation / Previous Verification

This is the first periodical verification, after checking validation report, there are no FARs requested.

2.2.-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/03/ and registered Passport/04/. 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/[03](#)/and registered Passport/[04](#)/.

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

Gamesa G-97	
Rated power	2000 kW
Average Annual Wind speed	7.5 m/s
Turbulence Intensity I15%	18 m/s
Reference 10 minute wind speed for 50 years	37.5 m/s
Survival wind speed	52.5 m/s
POWER	
Rated power	2000 kW
Average Annual Wind speed	7.5 m/s
Turbulence Intensity I15%	18 m/s
Reference 10 minute wind speed for 50 years	37.5 m/s
Survival wind speed	52.5 m/s
GENERATOR	
Type	Doubly-fed with coil rotors and slip rings
Rated power	2.0 MW
Voltage	690 V AC
Frequency	50Hz/60Hz
Protection class	IP 54
Power Factor	0.95 CAP – 0.95 IND throughout the power range
ROTOR	
Diameter	97 m
Swept area	7390 sq.m
Speed range (variable)	9:19 rpm
TOWER AND FOUNDATION	
Hub height	104 m
Design	Tubular, Four sections
Foundation type	Floating foundation

GEAR BOX	
Type	1 Planetary stage & 2 Parallel stage
Ratio	1:106.8 (50 Hz), 1:127.2 (60 Hz)
TOWER AND FOUNDATION	
Hub height	104 m
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GEAR BOX	
Type	1 Planetary stage & 2 Parallel stage
Ratio	1:106.8 (50 Hz), 1:127.2 (60 Hz)

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

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 manufacturers. 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/03/. The capacity of the project activity does not change after the registration of the project activity.

Also during the onsite visit, it was observed that the rated capacity of the wind project is 100 MW. The capacity of the project is more than 15 MW and thus the same qualifies as 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 4.0 is thus correct. The detail location of the project activity is as below:

Geographical coordinates of the Wind turbine are given below:

S. No	WTG ID	Latitude	Longitude	Village	Mandal	District
1	G1-07	16.4197	73.5719	Amidyala	Uravakonda	Anantapur
2	G1-08	16.4225	73.5617	Amidyala	Uravakonda	Anantapur
3	G1-09	16.4257	73.5547	Amidyala	Uravakonda	Anantapur
4	G1-11	16.4324	73.5301	Amidyala	Uravakonda	Anantapur
5	G1-12	16.4349	73.5268	Amidyala	Uravakonda	Anantapur
6	G1-14	16.4397	73.5108	Amidyala	Uravakonda	Anantapur
7	G1-15	16.4231	73.7548	Amidyala	Uravakonda	Anantapur
8	G1-16	16.4256	73.7483	Amidyala	Uravakonda	Anantapur

9	G1-17	16.4284	73.7456	Amidyala	Uravakonda	Anantapur
10	G1-18	16.4309	73.7265	Amidyala	Uravakonda	Anantapur
11	G1-19	16.4341	73.7241	Amidyala	Uravakonda	Anantapur
12	G1-20	16.4202	73.7557	Amidyala	Uravakonda	Anantapur
13	G1-21	16.4257	73.5547	Indravathi	Uravakonda	Anantapur
14	G1-23	16.4509	73.7016	Amidyala	Uravakonda	Anantapur
15	G1-24	16.4349	73.5268	Renimakulapalli	Uravakonda	Anantapur
16	G1-25	16.4962	73.9643	Renimakulapalli	Uravakonda	Anantapur
17	G1-26	16.4901	74.0145	Renimakulalpalli	Uravakonda	Anantapur
18	G1-27	16.4749	74.0365	Indravathi	Uravakonda	Anantapur
19	G1-28	16.4344	73.925	Amidyala	Uravakonda	Anantapur
20	G1-29	16.4385	73.9344	Amidyala	Uravakonda	Anantapur
21	G1-30	16.4406	73.9235	Amidyala	Uravakonda	Anantapur
22	G1-31	16.4431	73.9161	Amidyala	Uravakonda	Anantapur
23	G1-32	16.4454	73.9048	Amidyala	Uravakonda	Anantapur
24	G1-33	16.4291	74.0404	Amidyala	Uravakonda	Anantapur
25	G1-34	16.4493	73.8834	Nimbagallu	Uravakonda	Anantapur
26	G1-35	16.4517	73.8782	Nimbagallu	Uravakonda	Anantapur
27	G1-36	16.4542	73.8764	Nimbagallu	Uravakonda	Anantapur
28	G1-37	16.4372	73.725	Nimbagallu	Uravakonda	Anantapur
29	G1-38	16.4397	73.7282	Nimbagallu	Uravakonda	Anantapur
30	G1-39	16.4437	73.7203	Nimbagallu	Uravakonda	Anantapur
31	G1-40	16.4460	73.703	Nimbagallu	Uravakonda	Anantapur
32	G1-41	16.4484	73.7063	Nimbagallu	Uravakonda	Anantapur
33	G1-42	16.4509	73.7016	Nimbagallu	Uravakonda	Anantapur
34	G1-43	16.4346	74.0551	Amidyala	Uravakonda	Anantapur
35	G1-44	16.4370	74.0438	Amidyala	Uravakonda	Anantapur
36	G1-45	16.4404	74.1268	Amidyala	Uravakonda	Anantapur
37	G1-46	16.4430	74.1301	Amidyala	Uravakonda	Anantapur
38	G1-47	16.4455	74.1329	Amidyala	Uravakonda	Anantapur
39	G1-48	16.4484	74.1097	Mopidi	Uravakonda	Anantapur
40	G1-49	16.4509	74.108	Mopidi	Uravakonda	Anantapur
41	G1-50	16.4532	74.0995	Mopidi	Uravakonda	Anantapur
42	G1-51	16.4557	74.0918	Mopidi	Uravakonda	Anantapur
43	G1-52	16.4581	74.0885	Mopidi	Uravakonda	Anantapur

44	G1-53	16.4606	74.0833	Mopidi	Uravakonda	Anantapur
45	G1-54	16.4773	74.0302	Indravathi	Uravakonda	Anantapur
46	G1-55	16.4798	74.0254	Mopidi	Uravakonda	Anantapur
47	G1-56	16.4828	74.0343	Mopidi	Uravakonda	Anantapur
48	G1-57	16.4854	74.0305	Mopidi	Uravakonda	Anantapur
49	G1-58	16.4236	74.0439	Amidyala	Uravakonda	Anantapur
50	G1-59	16.4189	74.0189	Amidyala	Uravakonda	Anantapur

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/03/ is still applicable for the project and ex-ante emission factor as proposed in the PDD/03/ is used for emission reduction calculation. Assessment team noted that the project activity has entered a power purchase agreement for a period of 25 years with the Southern Power Distribution Company of A.P LIMITED (DISCOM). The electricity is fed in the Integrated Indian grid.

The commissioning details as provided in the MR Version 1.0, 2.0 3.0 and 4.0/01/were checked with the commissioning certificates/13/ provided by the project participant. 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.

The amount of GS-VERs achieved during the present monitoring period is lower than the estimated value in the PDD/03/. This is due to the lower PLF months during the monitoring period. There is no any adverse impact on additionality due to this low PLF of project activity for current monitoring period.

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/03/ and no change in additionality/baseline is envisaged for the present monitoring period.

Assessment team also checked the Feeder details of the connected Wind turbine and found the same to be appropriate. 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 17.0 /06/, applied by the proposed GS project activity.

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

The feeder details are checked and found correct by the assessment team. The details are as below:

Feeder 1	OAWP-21, OAWP-24, OAWP-25, OAWP-26, OAWP-27, OAWP-54, OAWP-55, OAWP-56, OAWP-57
Feeder 2	OAWP-35, OAWP-36, OAWP-45, OAWP-46, OAWP-47, OAWP-48, OAWP-49, OAWP-50, OAWP-51, OAWP-52, OAWP-53

Feeder 3	OAWP-23, OAWP-28, OAWP-29, OAWP-30, OAWP-31, OAWP-32, OAWP-33, OAWP-34, OAWP-43, OAWP-44, OAWP-58, OAWP-59
Feeder 4	OAWP-15, OAWP-16, OAWP-17, OAWP-18, OAWP-19, OAWP-20, OAWP-37, OAWP-38, OAWP-39, OAWP-40, OAWP-41
Feeder 5	OAWP-07, OAWP-08, OAWP-09, OAWP-11, OAWP-12, OAWP-14, OAWP-42

2.3.-Completeness of Monitoring

The monitoring has been carried out in accordance with the monitoring plan contained in the registered PDD/[03](#)/ and Passport/[04](#)/. All parameters were monitored and determined as per the monitoring plan as follows:

a. Data and parameters fixed ex ante or at renewal 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/[03](#)/and confirms that the similar approach was considered for the current monitoring period also.

The value for $EF_{OM,y}$, $EF_{BM,y}$, $EF_{CM,y}$ was considered from the CO₂ baseline database published by Central Electricity Authority (CEA) version 11.0. The default value as mentioned in the registered PDD/[03](#)/ and MR /[01](#)/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/[03](#)/for the current monitoring period.

The ex-ante fixed value as per registered PDD is as below. The same values are used for the current monitoring period for the calculation of baseline emission.

$$EF_{OM,y} = 0.9941 \text{ tCO}_{2e}/\text{MWh}$$

$$EF_{BM,y} = 0.9285 \text{ tCO}_{2e}/\text{MWh}$$

$$EF_{CM,y} = 0.9777 \text{ tCO}_{2e}/\text{MWh}$$

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 generation supplied by the project plant/unit to the grid in year y in MWh

The parameter $EG_{\text{facility},y}$ is calculated using the difference of (Export – Transmission Loss) – Import measured from the billing electricity meter. The Meter Reading Statement (i.e. JMR sheets) issued by State board which provide the values of export and import for the month. The transmission loss is already incurred in the export value and thus the same is not mentioned separately in the emission reduction sheet. The calculation of transmission loss is under the purview of State electricity board and PP has no role in it. The same is thus used for emission reduction calculation. The total energy exported/imported to/from the grid by project is measured by State electricity board via (electronic tri-vector main meter which measures both export & import concurrently) connected to the turbines. 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/[03](#)/and onsite practice. Assessment team confirms the same during the project visit. Assessment team checked all the values of calculated Net electricity supplied to the grid from the Meter reading statement (provides the value of export and import) issued by State electricity board. Moreover, as per the requirement of the approved methodology and registered PDD and passport assessment team cross checked the net electricity value as presented in the JMR with the invoice raised and found the values match with each other. The same is thus acceptable to the assessment team and thus emission reduction calculation is correct.

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/[11](#)/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/[12](#)/ such as make, accuracy class serial number is as per the meter available onsite and checked during verification site visit.

The calibration details are as below:

As per the registered PDD, calibration of meters is under the control of State Utility and frequency of calibration is not within the control of PP. However, as the PDD the PP shall ensure at least once in five year calibration as per the national standard. During the monitoring period the meters have been calibrated and there has been no error or fault in the meters identified during the latest calibration as well.

Below are the details of meter numbers and calibration dates, The meters are calibrated before commissioned and post commissioning during the monitoring period have been calibrated twice as detailed below:

Energy Meter Serial No Details			Calibration Date	Latest Calibration
33 KV Billing Meter	Old Main	APX00050	28.03.2016	-
	Old Check	APX00049	28.03.2016	-
	Main Meter	APX00642	21.07.2016	23.11.2017
	Check Meter	APX00643	21.07.2016	23.11.2017
220 KV Common Billing Meter Line 1	Main Meter	APX00638	21.07.2016	23.11.2017
	Check Meter	APX00639	21.07.2016	23.11.2017

220 KV common Billing Meter Line 2	Main Meter	APX00640	21.07.2016	23.11.2017
	Check Meter	APX00641	21.07.2016	23.11.2017

*All the meters are of "Secure Make: with 0.2s Accuracy class."

Note: The Old main and check meter at the 33kV end of the sub-station were used till 21/07/2016. Post which the new meters were used for metering. Hence the calibration details of the Old meters are not presented post 28/03/2016.

The calibration is done by State nodal agency (Meter Testing division), state board, 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 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.

2.4.-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 1.0, Monitoring report Version 2.0, Monitoring report Version 3.0 and 4.0 /01/and corresponding ER calculation spreadsheets and are consistent with the applied methodology ACM0002 version 17.0/06/and the monitoring plan contained in the registered PDD/03/. The parameters are complete in this monitoring period.

After verifying the reported figures with the raw data sources, it is confirmed that the values of the parameters from the raw data sources are consistent with those quoted in the Monitoring report Version 1.0, Monitoring report Version 2.0, Monitoring report Version 3.0 and version 4.0/01/and corresponding ER calculation spreadsheets/02See below for the detailed data:

The baseline emissions are the product of electrical energy baseline $EG_{PJ,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor.

$$BE_y = EG_{PJ,y} \cdot EF_{grid,CM,y} \tag{6}$$

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 used version of the "Tool to calculate the emission factor for an electricity system" (tCO₂/MWh) as per the registered Passport and PDD

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

$$= 310,886 \text{ (MWh)} * 0.9777 \text{ (tCO}_2\text{/MWh)}$$

$$= 303,953 \text{ tCO}_2 \text{ (rounded down)}$$

Project emissions:

The project is a wind power project, no fossil fuel will be consumed according to the methodology ACM0002 version 17.0/06/ & according to registered PDD/03/, $PE_y = 0 \text{ tCO}_2e$

Emission reductions:

Thus the emission reductions are:

$$ER_y = BE_y - PE_y$$

$$= 303,953 - 0 \text{ (tCO}_2e)$$

$$= 303,953 \text{ (tCO}_2e) \text{ (Rounded down)}$$

2.5.- Management and Operational System

The responsibilities of data measurement, collection, verifying, archiving etc. have been clearly defined in the registered PDD/03/. 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/03/.

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

It is verified during the on-site verification the monitoring procedure as well as the internal quality management and control procedures that are stipulated in the PDD/03/. The monitoring personnel have been interviewed by the assessment team and it is 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.

2.6.-Assessment of Sustainable Monitoring

In the Registered Passport Version 03 dated 21/03/2018 indicators are chosen for the monitoring of sustainable monitoring:

Meth/tool	Passport	MR	Compliance?
Air Quality	Air Quality	Air Quality	Yes
Quality of employment	Quality of employment	Quality of employment	Yes
Livelihood of poor	Livelihood of poor	Livelihood of poor	Yes
Access to affordable and clean energy services	Access to affordable and clean energy services	Access to affordable and clean energy services	Yes
Quantitative employment and income generation	Quantitative employment and income generation	Quantitative employment and income generation	Yes
Soil Erosion	Soil Erosion	Soil Erosion	Yes
Maintenance of Landscape visual impact	Maintenance of Landscape visual impact	Maintenance of Landscape visual impact	Yes

Meth/tool	Passport	MR	Compliance?
Species Mortality & Bird Strikes (Bird & Bat Deaths)	Species Mortality & Bird Strikes (Bird & Bat Deaths)	Species Mortality & Bird Strikes (Bird & Bat Deaths)	Yes

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

Indicator:	Air Quality
Chosen parameter 1:	CO ₂ emission reduction and reduction in dust generation
Parameter value:	Not applicable
Mitigation Measures:	Not applicable as indicator scored positive as per the registered Passport
Data Source:	O&M policy and interview with O&M team. The interview with the O&M team revealed that the project operation has minimalistic ground activities which does not result in any dust emissions.
Baseline situation of parameter 1:	In the baseline, According to latest CEA official data CO ₂ emissions due to electricity generation in India is 9777 tCO ₂ /GWh. (This is calculated value and sources are available in the emission reduction spread sheet.) There was no project related activity and hence no resultant dust due to construction or project's vehicle movements.
Target achieved?	Yes. Future target: Continuation of strict control measures for prevention of dust generation. Optimal operation of wind power project to generate clean energy and associated emission reductions.
Procedure of monitoring:	Checked O&M policy and interview with O&M team. The interview with the O&M team revealed that the project operation has minimalistic ground activities which does not result in any dust emissions
Means of verification:	By checking O&M policy and interview with O&M team, it is confirmed that the revealed that the project operation has minimalistic ground activities which does not result in any dust emissions. The safe and healthy working condition was provided to the staffs of the Project confirmed by site visit.
Cross-check:	Not applicable

Indicator:	Quality of employment
Chosen parameter 2:	Training provided to employees
Parameter value:	Not applicable
Mitigation Measures:	Not applicable as indicator scored positive as per the registered Passport
Data Source:	Training Record
Baseline situation of parameter 2:	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.
Target achieved?	Yes, the staffs have accepted a series of training on the technology and the monitoring of the plant operation, and the emergency and safety procedures.

	The safe and healthy working condition was provided to the staffs.
Procedure monitoring:	of Checked training record (both HSE- health safety and environment and HR- Human resource training records) and certificates and employee feedback forms are also checked.
Means of verification:	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.
Cross-check:	Not applicable

Indicator:	Livelihood of the poor
Chosen parameter 3:	Health Camps, Knowledge and information dissemination regarding natural disasters.
Parameter value:	Not applicable
Mitigation Measures:	Not applicable as indicator scored positive as per the registered Passport
Data Source:	CSR records and photographic evidence.
Baseline situation of parameter 3:	In the baseline, No activity except Government facilities
Target achieved?	Yes Future target: Health Camps, Knowledge and information dissemination regarding natural disasters are done by PP based on the requirement in the project location.
Procedure monitoring:	of Checked CSR activities report and photographic evidences.
Means of verification:	Assessment team noted that PP conducted survey during construction phase of the project in the villages near project locations to check the requirement of facilities by the villages. From the survey, PP has identified several scope of developmental activities such as health camps, furniture, sports kits and toilet requirements in government schools, drinking water requirements etc. PP has started implementing the CSR activities. During the monitoring period the CSR activities like: <ol style="list-style-type: none"> 1) Distribution of furniture to schools (Chairs, stools, benches and books) 2) Possibility of construction of Toilets at school for Girls if required. 3) Health camp at the village of Nimbagallu. 4) Establishment of water purifier with cooler in Nimbagallu

	The project will have positive impact on this parameter as there were no socially oriented CSR activities before the project activity. Thus the project has positive impact on the indicator.
Cross-check:	Not applicable

Indicator:	Access to affordable and clean energy services
Chosen parameter 4:	Net electricity supplied to grid
Parameter value:	310.886 million units of electricity supplied to grid by the project activity
Mitigation Measures:	Not applicable as indicator scored positive as per the registered Passport
Data Source:	Monitored through energy meter. Net electricity will be calculated by DISCOM and O&M operator on monthly basis and provided in the share certificate.
Baseline situation of parameter 4:	In the baseline, electricity facility were not available
Target achieved?	Yes Future target: Similar units of electricity supplied to grid by the project activity
Procedure of monitoring:	Checked the share certificate
Means of verification:	Assessment team checked the share certificate and conclude that 310.886 million units of electricity supplied to grid by the project activity
Cross-check:	Invoices are cross checked for the Net electricity supplied to grid

Indicator:	Quantitative employment and income generation
Chosen parameter 5:	1. Cost spent for O&M 2. Number of O&M staffs involved in the project
Parameter value:	The total number of O&M staffs employed by the Gamesa and Orange for the operation & maintenance of the project activity are around 50. This includes 9 number of O&M team of Gamesa, 10 number of third party contractors engaged by Gamesa, 1 personnel of Orange and 30 number of security staff employed at project site. The cost of O&M is over 20.5 lakhs per WTG which works at 1050 lakhs for the project per year, which helps in creating service based jobs in the project region.
Data Source:	Plant employment records. Attendance register are also checked to confirm the on rolled employment.
Mitigation Measures:	Not applicable

Baseline situation of parameter:	In the baseline, local people have no such job opportunities from the project, and their income has no increase. Most of the non- skilled i.e. local villagers are involved in Labour work in the agricultural field with no fixed income.
Target achieved?	Yes. Future target: Continued employment of O&M staff and security. Explore opportunity to engage more villagers. The project security staffs are local villagers and hence the project has also generated employment and income for local villagers.
Procedure monitoring:	PP has employment records for the people working in skilled O&M team and also local villagers working as non- skilled jobs like Security guards, peon etc.
Means of verification:	<p>After checking daily attendance register and employment records assessment team confirms that the total number of O&M staffs employed by the Gamesa and Orange for the operation & maintenance of the project activity are around 50. This includes 9 number of O&M team of Gamesa, 10 number of third party contractors engaged by Gamesa, 1 personnel of Orange and 30 number of security staff employed at project site.</p> <p>The cost of O&M is over 20.5 lakhs per WTG which works at 1050 lakhs for the project per year, which helps in creating service based jobs in the project region.</p> <p>The parameter has a positive impact as the project results in direct employment and income generation.</p> <p>Assessment team confirms that the monitoring parameter target is achieved for the present monitoring period.</p>
Cross-check:	Not applicable

Indicator:	Soil Erosion
Chosen parameter 6:	Any change in top soil around the establishment of project.
Parameter value:	Not applicable
Mitigation Measures:	Not applicable as indicator scored positive as per the registered Passport
Data Source:	Checked via Project O&M HSE logbook, or interview with maintenance staff.
Baseline situation of parameter 6:	In the baseline, no project related soil erosion in absence of project activity
Target achieved?	<p>Yes</p> <p>Future target: Regular review of mitigation measures proposed under monitoring plan and revision as per grievance expressed (if any)</p>
Procedure monitoring:	Checked the Project O&M HSE logbook, or interview with maintenance staff.
Means of verification:	<p>Assessment team checked the O&M HSE logbook and had an interview with maintenance staff. The O&M log book records all the parameters as listed:</p> <ol style="list-style-type: none"> 1) Hazardous waste generated, disposed, any spillages 2) Waste oil generated, disposed, any spillages 3) Leakage of any diesel or waste oil <p>This parameter has a neutral (0) impact as there have been no incidences of oil leakage or inappropriate disposal of hazardous or waste oil during the monitoring period.</p>

	<p>Moreover, assessment team checked the grievance register and found that no any formal complaint received from the local stakeholders regarding soil erosion because of the implementation of the project activity. The register is checked by the assessment team during the onsite visit and found correct.</p> <p>Also, Re-vegetation taken up as necessary after construction, in order to reduce the risk of soil erosion.</p>
Cross-check:	Not applicable

Indicator:	Maintenance of Landscape visual impact
Chosen parameter 7:	Aesthetics
Parameter value:	Not applicable
Mitigation Measures:	Not applicable as indicator scored positive as per the registered Passport
Data Source:	Checked via Project Grievance register, or interview with local villagers
Baseline situation of parameter 7:	In the baseline, There was no project activity and hence no resultant visual or landscape impact of the same.
Target achieved?	Yes Future target: Minimalistic visual impact/No stakeholders' complaints
Procedure of monitoring:	Checked via Project Grievance register, or interview with local villagers
Means of verification:	<p>Assessment team checked Detailed ESIA study conducted to understand if any of the location needs to be altered.</p> <p>Locals were consulted where ever a WTG location or access road was in vicinity to a settlement.</p> <p>The WTGs are painted with non-reflect paints and are not glary.</p> <p>Re-vegetation taken up as necessary after construction, in order to reduce the risk of soil erosion.</p> <p>Moreover, No significant visual impact observed and no grievances received.</p> <p>Vegetation has been grown where ever possible in the project's land. Apart from this the project proponent has planted a number of trees to improve the landscape visual impact.</p> <p>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.</p>
Cross-check:	Not applicable

Indicator:	Species Mortality & Bird Strikes (Bird & Bat Deaths)
Chosen parameter 8:	Bird carcass count
Parameter value:	Not applicable
Mitigation Measures:	Not applicable as indicator scored positive as per the registered Passport

Data Source:	Checked via Bird Strike register, or interview with local villager
Baseline situation of parameter 8:	In the baseline, no such incident
Target achieved?	Yes Future target: Strictly follow the control measures to prevent & control any bird strikes
Procedure monitoring:	Checked via Bird Strike register, or interview with local villager
Means of verification:	<p>Assessment team checked that the O&M team maintains a Bird strike register. As per the record, there are no observed carcasses in vicinity of the WTGs. The death of birds by other reasons including prey and accidents has not been recorded as this is not caused by the project's WTGs and its ancillary. Such rare incidents are known to the project proponent mostly through news.</p> <p>(Such as: http://www.indiatimes.com/news/india/parrots-in-madhyapradesh-are-so-addicted-to-opium-they-re-stealing-it-straight-from-the-farms-274146.html)</p> <p>The project activity's micro-siting had been done considering possible impact on flora and fauna. The choice of sites has been carefully done considering the preliminary recommendation of the ESIA report. None of the WTGs are near to water bodies and PP takes deliberate steps to ensure there no water holes around the WTGs.</p> <p>The project proponent actively takes regular feedback from local villagers about project and has also set up a grievance mechanism in place. There has been no reported bird death in the project vicinity.</p> <p>The impact of parameter is neutral as there is no impact observed during the current monitoring period.</p>
Cross-check:	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	Rajesh Kumar
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	Amit
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.	

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 Gold Standard Toolkit Version 2.2.

3. SUMMARY OF FINDINGS

The assessment team can confirm that the MR Version 1.0, MR Version 2.0, MR Version 3.0 and MR Version 4.0 /01/and related documents are complete and verifiable in accordance with the GS requirements. All the findings that were raised by the assessment team, the responses by the PPs and the conclusion from the team are presented below. The means of verification and resulting changes in the MR/01/ or related documents are identified in the following tables:

Compilation and Resolutions of CARs, CRs and FARs

Type:	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR	Number:	01
Raised by:	Sukanta Das	Ref. to checklist in above tables:	NA
Description of the audit finding		Date:	12/05/2018

Following observation are noticed related to Sustainability monitoring parameters:

1. Air Quality: O&M policy as per the registered PDD is not submitted to assessment team. Corrective action is sought.
2. As per registered Passport for parameter "Quality of employment" will be monitored through Training Records (HSE & HR) & Employee feedback forms. The documents are not submitted to the assessment team. The parameter is thus reserved till the submission of further documents. Corrective action is sought.
3. As per registered passport the parameter "Livelihood of the poor will be monitored through CSR records and photographic evidence. The documents are not submitted to the assessment team. The parameter is thus reserved till the submission of further documents. Corrective action is sought.
4. As per registered passport Quantitative employment and income generation will be monitored through Plant employment records. Moreover, the number of employees (skilled and non-skilled and permanent and adhoc) are also not detailed out in the MR. The documents are not submitted to the assessment team. The parameter is thus reserved till the submission of further documents. Corrective action is sought.
5. As per registered passport Soil erosion will be monitored through Project O&M HSE log book. The documents are not submitted to the assessment team. The parameter is thus reserved till the submission of further documents. Corrective action is sought.
6. As per the registered passport Maintenance of Landscape visual impact will be monitored through Project grievance register. The parameter is thus reserved till the submission of further documents. Corrective action is sought.
7. As per the registered passport Species Mortality & Bird Strikes (Bird & Bat Deaths) will be monitored through Bird Strike register. The documents are not submitted to the assessment team. The parameter is thus reserved till the submission of further documents. Corrective action is sought.

Based on the above observation corrective action is sought in MR and ER sheet

Project Participant's response	Date:	21/05/2018
<ol style="list-style-type: none"> 1. O&M agreement of the project activity is now shared with the DoE 2. List of Training carried out by Orange along with feedback forms is shared with the DoE 3. The project team carried out study in the project before carrying out the CSR. Based on the findings and recommendations, CSR activity was carried out and the details of which are now shared with the DoE in the form of a brief presentation. 4. Now in the MR details of number of employees (skilled and non-skilled and permanent and adhoc) are included. Sample Employee contract as well is shared with the DoE. 5. The project activity is under operation and being a wind power project there is no impact on the parameter of soil erosion. The DoE is shared with the Log extract reflecting observation of the O&M team with respect to the parameter of soil erosion. In the current monitoring period there has been no impact on this parameter. 6. The project proponent is actively involved with the local community in the region and carries out CSR activities as well. Such involvement with the stakeholders has ensured that the project team is well connected to the stakeholders. There have been no incidents of grievances in the monitoring period. The DoE is shared with the copy of Grievance form used at site. 7. There have been no incidents of bird or bat deaths in the monitoring period. The DoE is shared with the copy of register form used at site. 		
Documentation provided as evidence by Project Participant		

<ol style="list-style-type: none"> 1. O&M agreement copy 2. List of Training & Feedback forms 3. CSR activity photos 4. Sample Employee Contract 5. Log extract for soil erosion 6. Grievance Form copy 7. Bird & Bat register copy 		
Auditor's assessment comment	Date:	22/05/2018
<p>Following are the observation of the auditor:</p> <ol style="list-style-type: none"> 1. The O&M agreement copy is checked by the assessment team and found correct. 2. The training both (HSE & HR) & Employee feedback forms are checked and found correct by the assessment team. CAR is thus closed 3. CSR initiative and photographic evidence are checked by the assessment team to confirm Livelihood of the poor. CAR is thus closed 4. The employee details (skilled/ non-skilled/permanent/ adhoc) is now submitted to the assessment team. The MR version 02 now details the same and thus CAR is closed 5. The log extract of Soil erosion is checked and found correct by the assessment team. CAR is thus closed. 6. The Grievance form is checked by the assessment team to conclude Maintenance of Landscape visual impact. The same is found correct. CAR is thus closed 7. The register is checked and assessment team observed that no Bird death occurred during the operation of the WTGs. CAR is thus closed. 		

Type:	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR	Number:	02
Raised by:	Sukanta Das	Ref. to checklist in above tables:	NA
Description of the audit finding		Date:	12/05/2018
<p>Following discrepancies are observed by the assessment team:</p> <ol style="list-style-type: none"> 1. Calibration details for the measuring device for the monitoring period is missing. The calibration agency name and due date of calibration is also missing for the energy meters. Calibration certificate is also not provided to the assessment team. Corrective action is sought in the MR. 2. The feeder wise details of the WTGs of the respective site are also missing. Corrective action is sought in the MR. 3. JMR and invoices are missing for the complete monitoring period. 4. Commission Certificate is missing. Corrective action is sought in the MR. 5. The actual vs estimated value is not provided in % term. Also the detail explanation is missing in the MR. <p>Based on the above observation corrective action is sought in MR and ER sheet</p>			

Project Participant's response	Date:	21/05/2018
<ol style="list-style-type: none"> 1. Calibration details of the energy meters has been updated in the section C.2 of the revised MR. The name of calibrating agency due dates for the entire monitoring period has been updated now. The DoE is provided with the copy of calibration certificate. 2. Now feeder details and information on connected WTGs to each feeder is updated in the section C.2 of the revised MR. 3. JMR and invoices are provided to the DoE 4. Commissioning certificate of the project activity has been provided to the DoE 5. The percentage of variation is provided under the section D.6 of the MR, now the explanation as well is detailed under the section D.6 of the revised MR. 		
Documentation provided as evidence by Project Participant		
<ol style="list-style-type: none"> 1. Calibration certificate of energy meters 2. JMR and invoices 3. WTG commissioning certificate 		
Auditor's assessment comment	Date:	22/05/2018
<p>Following are the observation of the DOE:</p> <ul style="list-style-type: none"> • The calibration certificates are checked and found correct by the assessment team. CAR is thus closed • The details of the new Feeder is now mentioned in the revised MR Version 02. CAR is thus closed • JMR and invoice copies are checked by the assessment team and it is observed that ER calculation is correct. CAR is thus closed. • The Commissioning certificate of the power plant is checked and found correct. CAR is closed • The % variation is now checked and found correct by the assessment team. CAR is thus closed. 		

Type:	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL/CR <input type="checkbox"/> FAR	Number:	03
Raised by:	Sukanta Das	Ref. to checklist in above tables:	NA
Description of the audit finding	Date:		12/05/2018
<p>The grievance register records are missing and not submitted to the assessment team. Break down details of the power plant is not detailed out. Supporting log sheets are also missing. Corrective action sought.</p>			
Project Participant's response	Date:	21/05/2018	
<p>The monitoring period does not receive any grievance from the stakeholder, the DoE is provided with the Grivance form used at the site. The form is placed not only in the panchayat offices of the villages but also at the project site office.</p> <p>The MR has only the consolidated break down details and the DoE is provided with spreadsheet with complete reord of break down with reasoning. All the details at plant are recorded in the same spread sheet and there is no separate log book.</p>			
Documentation provided as evidence by Project Participant			

Grievance form		
Auditor's assessment comment	Date:	22/05/2018
<p>The grievance forms are checked and assessment team noted that no grievance is observed from the local stakeholder and thus it is acceptable to the DOE.</p> <p>The breakdown details are checked and found correct by the assessment team. The power plant undergone scheduled maintenance and no unforeseen incident observed during the monitoring period. CAR is thus closed.</p>		

4. REFERENCE

/01/	Monitoring Report Version 1.0 dated 27/03/2018, Monitoring report version 2.0 dated 21/05/2018, Monitoring report Version 3.0 dated 26/05/2018, Monitoring report Version 4.0 dated 22/06/2018
/02/	ER sheets version 1.0 ER Sheets version 2.0
/03/	Registered PDD Version 04 dated 26/01/2018
/04/	Registered Passport Version 03 dated 26/01/2018
/05/	GS Validation Report
/06/	ACM0002 version 17.0
/07/	CDM Validation and Verification Standard Version 01.0
/08/	The Gold Standard Toolkit Version 2.2
/09/	Training records of the employees (both skilled/non skilled)
/10/	O&M policy
/11/	Monthly reports i.e. JMR sheets 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/	Seminars and training records
/17/	Grievance register

5. VERIFICATION STATEMENT

Applus+ Certifications has been engaged by Orange Anantapur Wind Power Private Limited to perform the first periodical verification of the “100 MW Wind Power Project at Anantapur, Andhra Pradesh” (GS Ref. No. 4557).

The management of Orange Anantapur Wind Power 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 17.0

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 MW Wind Power Project at Anantapur, Andhra Pradesh” for the monitoring period 28/03/2016 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: 28/03/2016 to 31/03/2018 (Both days included)

Verified emissions in the above reporting period:

<i>Leakage emissions</i>	<i>0 tCO₂ equivalents</i>
<i>Project emissions</i>	<i>0 tCO₂ equivalents</i>
<i>Baseline emissions</i>	<i>303,953 tCO₂ equivalents</i>
<i>Emission reductions</i>	<i>303,953 tCO₂ equivalents</i>

Vintage wise Emission reduction value:

Item	Values estimated in ex ante calculation of registered PDD	Actual values achieved during this monitoring period (28/03/2016 to 31.03.2016)
Emission reductions or GHG removals by sinks (t CO _{2e})	421,966	303,953
Year 2016	158,093	90,305
Year 2017	209,833	190,955
Year 2018	51,740	22,693

The actual achieved emission reduction for this monitoring period is less than estimated value in the PDD. The PP would like to clarify that such variation is possible due to various factors such as annually varying capacity utilization factor of the machines (WTGs) and ancillary facilities.

Assessment team noted that for the year 2016 the actual generation is less than 42.88% from the estimated value. The PLF during the period is on the lower side. Moreover, as the plant is just implemented the full efficiency for any renewable project require time. As the actual value is less than the estimated the same is acceptable to the assessment team.

Assessment team noted that for the year 2017 the actual generation is less than 9.00% from the estimated value. The reason is same as the PLF is lower for the period. Moreover, generation is directly depended upon power availability in the turbine. Since the Wind availability for the period is lower the generation is thus on the lower side. As the actual value is less than the estimated the same is acceptable to the assessment team.

Assessment team noted that for the year 2018 only 3 months are covered i.e. from Jan – March 2018 which are low wind availability season and thus actual generation is 56.14% lower than the estimated generation. Most of the generation for wind projects comes from the months of June to September. As the actual value is less than the estimated the same is acceptable to the assessment team.

Signature



Date: 22/06/2018

Assessment team: Mr. Sukanta Das (Team Leader / Leader Auditor)

Technical Reviewer: Mr. Simon Shen

DOE Representative Applus+ Certification BU Managing Director: Mr. Juan Sendín Caballero



