

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



Project Title:	Lingasugur Wind Power Project in Karnataka
Monitoring Period:	01/10/2019 to 30/06/2022 (inclusive of both dates)
GS project ID:	GS 11404
Internal ID:	A+SH_SYST_TQC_GS_VAL_VER_30421
Customer:	ReNew Wind Energy (AP) Private Limited
Date:	23/07/2023
Revision:	03

SUMMARY																												
Reference No.	Date (first version)	Version No.	Date (last version)																									
A+SH_SYST_TQC_GS_VAL_VER_30421	13/09/2022	03	23/07/2023																									
GS4GG Verification																												
GS4GG Certified Product (sought):		GHG Emission Reductions																										
GS4GG SDG Impact Statement (sought):		Impact Certification																										
General Information																												
Client	ReNew Wind Energy (AP) Private Limited																											
Project Title	Lingasugur Wind Power Project in Karnataka																											
Project Participants	ReNew Wind Energy (AP) Private Limited																											
Project Location	Host Country: India State: Karnataka District: Raichur Village: Khota, Hire Hesurur, Chikehesurur, Amaravathi, Basapur																											
Contact Person	Mr. Ishan Nagpal																											
Monitoring Period	01/10/2019 to 30/06/2022 (Inclusive of both days)																											
GS4GG Version: GS4GG Principles and Requirements Version 1.2 GS4GG Activity Requirements: RE Activity Requirements Version 1.4 Applied Methodology Version: ACM0002- Grid-connected electricity generation from renewable sources - Version 20.0 Current Methodology Version: ACM0002- Grid-connected electricity generation from renewable sources - Version 20.0		GS4GG Sectoral Scope: 2 UNFCCC CDM Sectoral Scope: 1 Technical Area: 1.2																										
Published Monitoring Report Version: 01 Date: 16/06/2022		Final Monitoring Report Version: 06 Date: 22/07/2023																										
GS4GG Project Design Document Version: 06, Date: 22/07/2023 GS Passport Version (if applicable): NA																												
Estimated SDG Goals: SDG 7 (Affordable and clean energy): 81,142 MWh/annum and 223,196.076 MWh for this monitoring period SDG 8 (Decent work and economic growth): 10 people employed and minimum 1 training per year SDG 13 (Climate action): 72,784 tCO ₂ e/annum for first crediting period and 75,502 tCO ₂ e/annum for second crediting period and 202,663 tCO ₂ e for this monitoring period.																												
Actual SDG Goals achieved during current monitoring period: SDG 7 (Affordable and clean energy): 230,149.034 MWh SDG 8 (Decent work and economic growth): No. of Employment opportunities created: 47																												
<table><tr><th>Year</th><th>Skilled</th><th>Semi-Skilled</th><th>Unskilled</th><th>Total</th></tr><tr><td>2019</td><td>2</td><td>5</td><td>3</td><td>10</td></tr><tr><td>2020</td><td>1</td><td>5</td><td>5</td><td>11</td></tr><tr><td>2021</td><td>2</td><td>7</td><td>7</td><td>16</td></tr><tr><td>2022</td><td>2</td><td>7</td><td>1</td><td>10</td></tr></table>				Year	Skilled	Semi-Skilled	Unskilled	Total	2019	2	5	3	10	2020	1	5	5	11	2021	2	7	7	16	2022	2	7	1	10
Year	Skilled	Semi-Skilled	Unskilled	Total																								
2019	2	5	3	10																								
2020	1	5	5	11																								
2021	2	7	7	16																								
2022	2	7	1	10																								
No. of trainings conducted: 30 SDG 13 (Climate action): 208,793 tCO ₂ e(GSVER)																												

Selected Sustainable Development Goals (SDGs): 7, 8 and 13

Verification Summary

LGA Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by ReNew Wind Energy (AP) Private Limited to perform the 1st verification of "Lingasugur Wind Power Project in Karnataka" (Ref. No. GS 11404) applying the methodology ACM0002- Grid-connected electricity generation from renewable sources - Version 20.0. The management of ReNew Wind Energy (AP) Private Limited is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions.

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

- The GS4GG PDD V06 including the monitoring plan;
- Monitoring report(s);
- The applied monitoring methodology;
- Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board;
- The Gold Standard for Global Goals "Principles and Requirements" Version 1.2 and GS4GG guideline and related Annex.
- All information and references relevant to the project activity's resulting in emission reductions.

ReNew Wind Energy (AP) Private Limited has implemented wind power project title as "**Lingasugur Wind Power Project in Karnataka**)" large-scale grid connected. The project activity involves installation and operation of 20 WTGs of 2 MW each of total capacity 40 MW wind power project at Village Khota, Hire Hesurur, Chikehesurur, Amaravathi, Basapur, District Raichur, Karnataka in state in India. The project is promoted by ReNew Wind Energy (AP) Private Limited.

The project activity replaces anthropogenic emissions of greenhouse gases of 208,793 tCO₂e, thereon displacing 230,149.034 MWh amount of electricity in current Monitoring Period from the generation-mix of power plants connected to the Indian Grid, which is mainly dominated by thermal/ fossil-fuel based power plant.

The location of the project activity is –

Host Country: India

State: Karnataka

District: Raichur

Village: Khota, Hire Hesurur, Chikehesurur, Amaravathi, Basapur

The WTG location details commissioned on date 31/12/2015 is shown below:

WTG ID	Site	Latitude (N)	Longitude (E)
GLG211	Khota, Hire Hesurur, Chikehesurur, Amaravathi, Basapur Site (Karnataka)	16°7'37"N	76°37'44"E
GLG55		16°7'21"N	76°37'37"E
GLG186		16°7'57"N	76°37'18"E
GLG113		16°8'27"N	76°37'23"E
GLG208		16°8'13"N	76°37'17"E
GLG112		16°8'37"N	76°37'22"E
GLG111		16°8'47"N	76°37'21 E
GLG110		16°8'56"N	76°37'25"E
GLG109		16°9'5"N	76°37'24"E

GLG227		16°9'15"N	76°37'24"E
GLG56		16°7'5"N	76°37'38 E
GLG169		16°6'47"N	76°37'31 E
GLG223		16°6'30"N	76°37'6" E
GLG148		16°6'21"N	76°37'5" E
GLG171		16°6'0"N	76°37'3" E
GLG165		16°5'46"N	76°37'6" E
GLG221		16°5'29"N	76°37'15 E
GLG160		16°5'16"N	76°37'10 E
GLG152		16°5'1"N	76°37'1" E
GLG207		16°4'52"N	76°36'59" E

Applus+ Certification confirms that the project is implemented in accordance with the GS4GG PDD V05. The monitoring plan complies with the applied methodology ACM0002- Grid-connected electricity generation from renewable sources - Version 20.0 /11/ and the Gold Standard for Global Goals "Principles and Requirements" Ver.1.2 /13/, 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 208,793 tCO₂e emission reductions during period 01/10/2019 to 30/06/2022 (Both days included).

ASSESSMENT TEAM		
Team Members	Type of Resource ¹	Organization (for OEs)
Lead Auditor: Mr. Pankaj Kumar	☐ IR ☐ EI ☒ OE	M/s True Quality Certifications Private Limited
Technical Expert: Mr. Pankaj Kumar	☐ IR ☐ EI ☒ OE	M/s True Quality Certifications Private Limited
Technical Reviewer: Mr. Simon Shen	☐ IR ☒ EI ☐ OE	

¹ IR (Internal Resource); EI (External Individual); OE (Outsourced Entity)

ABBREVIATIONS	
AM	Approved Methodology
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
KPTCL	Karnataka Power Transmission Corporation Limited
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:

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

LGA Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by ReNew Wind Energy (AP) Private Limited to perform the first verification of "Lingasugur Wind Power Project in Karnataka)" applying the methodology ACM0002- "Grid-connected electricity generation from renewable sources" - Version 20.0 and GS4GG guidelines. 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, Version 1.2. According to this assessment Applus+ Certification shall:

- Ensure that the project activity has been implemented and operated as per the registered PDD 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 CDM VVS for project activities version 03 for the project activity and Gold Standard i.e., 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- "Grid-connected electricity generation from renewable sources" - Version 20.0.

1.2 Scope

The verification scope encompasses an independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the VVB. The verification is based on the submitted monitoring report, the registered PDD V06 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 CDM VVS for project activities version 03 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

ReNew Wind Energy (AP) Private Limited has implemented a Greenfield “Lingasugur Wind Power Project in Karnataka)” (Project activity). The project activity generates power using renewable energy source (wind energy) and sell the power generated to the National grid. The project activity generates electricity using wind energy. The generated electricity is exported to the third party buyer through Indian Grid system which is under the purview of the INDIAN electricity grid of India.

The project activity replaces anthropogenic emissions of greenhouse gases of 208,793 tCO₂e, thereon displacing 230,149.034 MWh amount of electricity in current Monitoring Period from the generation-mix of power plants connected to the Indian Grid, which is mainly dominated by thermal/ fossil fuel based power plant.

The total installed capacity of the current project activity is 40 MW; which involves operation of 20 WTGs of 2 MW capacity each, in the state of Karnataka in India. The same was confirmed during Onsite visit.

The detail of the project is mentioned in the table below:

Project Investor	Project Type	Total Project Capacity	State	Usage
ReNew Wind Energy (AP) Private Limited	Wind	40 MW	Karnataka	Sale to third party

The project activity start date is 30/06/2015. And commissioning date of WTG as below: -

WTG ID	Date of Commissioning
GKL-11,12,13,14,15,16,17,18,19,20	31/12/2015
GKL-21,22,23,24,25,26,27,28,29,30	31/12/2015

Technical Description:

The total installed capacity of the current project activity is 40 MW; which involves operation of 20 WTGs of 2 MW capacity each, in the state of Karnataka in India. The project is promoted by ReNew Wind Energy (AP) Private Limited.

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

Particulars	Details
WTG Make	Gamesa Wind Turbines Private Limited
Rated Power	2000 KW
Cut-in-wind speed	3 m/s
Cut-out wind speed	25 m/s
Rotor Diameter	97 m
Operational range of Rotor	9.83 – 17.79 rpm
Turbine type	Horizontal axis turbine with variable rotor speed
Gear Box Type	Planetary helical gearbox
Hub Height	104 m
Orientation	Up-wind
No. of blades	3
Blade material	Fibre glass epoxy reinforced
Braking	Active Hydraulic Brake
Rated wind speed	~ 10.5 m/s
Tower	104 m
Particulars	Details
WTG Make	Gamesa Wind Turbines Private Limited

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 project's 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 if applicable.

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 interviewing PP representative during the Site visit and a desk review of the Monitoring Report. This Verification Report describes the findings of this assessment.

2.1 Appointment of the assessment team

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

The composition of audit team shall be approved by the LGAI Technological Center, S.A. (Applus+ Certification) ensuring that the required skills are covered by the team.

The four qualification levels for team members that are assigned by formal appointment rules are as presented below:

- Lead Auditor (LA)
- Auditor (A) / Auditor in Training (AiT)
- Technical Expert (TE)
- Technical Reviewer (TR)

The sectoral scope/technical area knowledge linked to the applied methodology/ies shall be covered by the assessment team.

Name	Role	SS Coverage	TA Coverage	Financial aspect	Host country experience
Mr. Pankaj Kumar	LA/TE	YES	YES	NA	YES
Mr. Simon Shen	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 VVB 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 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 Onsite assessment and follow up interviews

In the context of verification, the GS4GG principles and requirements version 1.2, para 5.1.26 requires VVB to conduct a site visit including the assessment of the monitoring report and all supporting evidence and documents included by the Project Developer to demonstrate conformity.

Site Location: Village Khota, Hire Hesurur, Chikehesurur, Amaravathi, Basapur, District Raichur
 State: Karnataka

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1	Sharma	Parag	PP representative	18/07/2022 and 19/07/2022	Project implementation, Baseline emissions, ER calculations, Grievance mechanism, Trainings, Sustainable monitoring etc.	Mr. Pankaj kumar
2.	-	Mr. Dileep	Site person	18/07/2022 and 19/07/2022	Stakeholder meeting- Employment opportunities, Standard of Livings etc.	
3.	Ghose	Bibhushita	consultant	18/07/2022 and 19/07/2022	emission reduction calculation and MR preparation .	

The objective of the Onsite audit 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 onsite;
- Check the monitoring equipment against the requirements of the GS PDD and the approved methodology, including calibrations, maintenance, etc.;

- Identify if the quality control and quality assurance procedures are in place to prevent or correct errors or omissions in the reported parameters.
- Confirm the SDG goals/ Sustainable monitoring parameter as per the registered GS PDD
- To understand grievance (if any) from the villagers during the monitoring period.
- Local stakeholder meeting details:

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

Name of the stakeholder	Mr. Guru Dutt
Occupation	Villager
VVB questions: Did the power plant have any harmful impact on farming or vegetations? Answer: NO. The plant is implemented in barren land and there were no any fertile land or crop which is damaged.	

Assessment team interviewed the local stakeholder and confirmed that there is no grievance resulted from the project activity in and out of the project location. The stakeholder confirmed that the project resulted in employment and improves lifestyles of the personal/families in the nearby villages. (Discussion with Stakeholder)

The Grievance mechanism and procedure adopted have been confirmed and assessed to be appropriate. The grievance register is maintained at the project site office which looks after the day-to-day operation and maintenance of the project. By checking grievance book submitted by PP, assessment team was able to confirm there are no comments received from the local people for the present monitoring period towards project activity.

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 06. 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 findings: CAR: 04, CL: 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 VVB'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

As this is the first verification of the project activity there was no previous verification.

3.2 Project Implementation in accordance with the registered Project Design Document

The project activity was fully implemented according to the description presented in the GS4GG PDD, Version 06. The assessment team confirms, through the visual inspection that all physical

features of the project activity including data collecting systems and storage have been implemented in accordance with the GS4GG PDD.

The project activity was in normal operational during the monitoring period and the same has been confirmed during the on-site interviews. 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 technical features of the equipment's have been verified by the assessment team by reviewing following documentation:

- Interviews of onsite personnel's during Site Visit.
- Technical detail analysis of the power plant from the documents submitted by the manufacturer.
- Commissioning certificates of the plant
- PPA for the project activity
- Technical details are as follows:

The details of equipment installed at project activity are as follows:

Particulars	Details
WTG Make	Gamesa Wind Turbines Private Limited
Rated Power	2000 KW
Cut-in-wind speed	3 m/s
Cut-out wind speed	25 m/s
Rotor Diameter	97 m
Operational range of Rotor Speed	9.83 – 17.79 rpm
Turbine type	Horizontal axis turbine with variable rotor speed
Gear Box Type	Planetary helical gearbox
Hub Height	104 m
Orientation	Up-wind
No. of blades	3
Blade material	Fibre glass epoxy reinforced
Braking	Active Hydraulic Brake
Rated wind speed	~ 10.5 m/s
Tower	104 m

Technical specifications of the Wind Turbine Generator are provided in the section B.1 of the MR^{/01/}. Same are conformed during the Onsite with PP and Specification document, commissioning certificates found correct.

WTG ID	Date of Commissioning
GKL-11,12,13,14,15,16,17,18,19,20	31/12/2015
GKL-21,22,23,24,25,26,27,28,29,30	31/12/2015

The project activity was commissioned as stated in table above and same was verified from the commissioning certificate issued by KPTCL^{/11/}.

The project activity was in normal operational during the monitoring period and the same has been confirmed during interviews with PP and crosschecked from review of B-form/JMR issued by KPTCL. No unusual activates observed during the monitoring period and plant was undergone scheduled as well as emergency 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 and B-form/JMR.

Verification team confirm that the project implementation is in accordance with the project description contained in the GS PDD (version 06, dated 22/07/2023 /09/).

The verification team has reviewed the commissioning certificates & PPA to conclude that the capacity of the project is same as mentioned in the registered GS4GG PDD and explained by PP during site visit. The capacity of the project activity does not change after the registration of the project activity and same have been confirmed from the commission certificate issued by KPTCL.

Grievance Mechanism:

During the interviews with PP, the verification team confirmed that there is a grievance book/form with GS contact information at the project site office and are accessible to local stakeholders. By checking grievance book submitted by PP, it was able to confirm there are no comments received from the local people for the present monitoring period towards project activity. Local people are happy with the implementation of the project activity as it entrusts employment and improve living standard of local people and villagers.

Materiality adopted in Verification:

Consideration of materiality in planning the verification

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

No.	Risk that would lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk levels	Justification	
				data for the project activity.
2	Human error: Quantification of emission reduction	LOW	Use of spread sheets without adequate data control, changes/updates, version tracking, traceability and security	All the energy statement i.e., REA statement and the invoices for the complete monitoring period are checked and thus the assessment team confirms that the ER value is conservative and correct.

Consideration of materiality in conducting the verification

In line with Guidelines for Application of materiality in verifications, version 2.0 the verification team has conducted a complete verification of all the information presented in the monitoring report and data monitored as presented in the emission reduction calculation spread sheet. It follows the paper trail back to the raw data such as meter reading records and invoices. There are no material errors, overestimation of ER, omission or misstatement.

The project has obtained the requisite clearances and has already commissioned on as verified from the review of relevant document [/15/](#) and operating successfully [/16/](#).

Project equipment and the technology are employed as mentioned in the GS PDD [/09/](#).

The technical details of the project activity as confirmed during the site visit explained in sec. 1.3 above.

Training has been provided to the operators on the technology and the monitoring of the plant operation, and the emergency and safety procedures. The company has recruited personnel with relevant experience in the operation of the plant.

Assessment of actual emission reductions with the estimate emission reductions in PDD:

In summary, verification team confirms that actual emission reduction is 3.02% higher the estimate of the GS PDD for the current monitoring period.

Verification team considers the project and monitoring description of the project contained in the Monitoring report to be complete and accurate. The Monitoring report complies with the relevant methodology, tools, forms and guidance which are in line with that available in the registered documents (including PDD) with Gold Standard.

Opinion:

a) In opinion of the assessment team the implementation and operation of the project activity is in compliance with the description in the PDD V06.

b) There is no revision in monitoring plan or post registration change for the current monitoring period.

c) The actual emission reductions for the current monitoring period are 208,793 tCO₂e which are higher than the estimated ERs (202,663 tCO₂e) for the comparable period.

3.3 Compliance of the Monitoring Plan with the Monitoring Methodology

The verification team is able to confirm that the monitoring plan contained in the PDD (version 06.0, dated 22/07/2023) is in accordance with the approved methodology applied by the project activity — ACM0002- "Grid-connected electricity generation from renewable sources" - Version 20.0 /11/.

The monitoring plan and the monitoring system implemented are in compliance to the applied monitoring methodology ACM0002- Grid-connected electricity generation from renewable sources - Version 20.0.

During the verification all relevant monitoring parameters (as listed in the PDD) have been verified with regard to the appropriateness of the applied measurement/determination method, the correctness of the values applied for ER calculation, the accuracy, and applied QA/QC measures.

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

Opinion:

The monitoring plan mentioned in the registered PDD is in line with the applied methodology i.e. — ACM0002- Grid-connected electricity generation from renewable sources - Version 20.0.

The monitoring mechanism is in line with the methodology and is effective and reliable.

3.4 Completeness of Monitoring

The monitoring has been carried out in accordance with the monitoring plan contained in the PDD (version 06, dated 22/07/2023) /09/. During the course of verification, all relevant monitoring parameters have been verified with regard to the appropriateness of the applied measurement / determination method and applied QA/QC procedures. It is confirmed that the monitoring parameters have been measured / determined without material misstatements.

The verification team reviewed the actual monitoring during the Site interview and from document review and compared it against the requirements of the monitoring plan in the GS4GG PDD /09/ and found in line.

Assessment team verified that there is no non-project WTG is connected in the feeder where project WTGs are connected. The same has been mentioned by PP in monitoring report which is checked and confirmed by VVB through interviews and submitted single line diagram.

The verification team assessed the monitoring techniques and each monitoring value in the monitoring report; and provided a short summary on the verification of every parameter listed in the monitoring plan and used for calculation of emission reductions.

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

EF_{grid,OM,y}, **EF_{grid,BM,y}**, & **EF_{grid,CM,y}** were mentioned as ex-ante fixed parameter.

As per the revised PDD, Version 6.0, the value for **EF_{grid,OM,y}**, **EF_{grid,BM,y}**, & **EF_{grid,CM,y}** was considered from CO₂ Baseline Database Version 07.0 for first crediting period and Version 17.0 for second crediting period for the Indian Power Sector prepared by Central Electricity Authority, Ministry of Power, Government of India. The value of grid emission factor is 0.8970 tCO₂/MWh for first crediting period and 0.9305 tCO₂/MWh for second crediting period is considered as grid emission factor for the GS4GG project activity. The default value in turn is used for baseline calculation as per the formula given in the GS4GG PDD for the current monitoring period. Assessment team checked the values, source of data, choice of data, purpose of the data mentioned in the MR from the GS4GG PDD and confirms that the similar approach was considered for the current monitoring period also.

The monitoring period is from 01/10/2019 to 30/06/2022 and this is covered in first and second crediting period. From 01/10/2019 to 04/08/2021 is covered in first crediting period and 05/08/2021 to 30/06/2022 is covered in second crediting period. Hence, emission factor for both crediting period are applicable for this verification.

The relevant Emission factor values used for emission reduction calculation are as below. Also, as GS4GG "Principles and Requirements" V 1.2 the ex-ante fixed parameters are now connected to relevant SDG indicator which is acceptable to the assessment team.

For 1st Crediting Period:

Parameter/ Description	Value applied	MoV
SDG 13: Climate Action EF_{grid,OM,y} Operating Margin CO ₂ emission factor in year y	0.9515 tCO ₂ /MWh	The value was checked from GS4GG PDD ^{/10/} and found correct. The value was calculated generation weighted average using data for the year 2008-09, 2009-10 and 2010-11 of Southern Grid, sourced from sourced from CEA CO ₂ baseline database version 07.
SDG 13: Climate Action EF_{grid,BM} Build Margin CO ₂ emission factor in year y	0.7339 tCO ₂ /MWh	The value of the parameter was checked from GS4GG PDD ^{/10/} . The value of the parameter was sourced from CEA CO ₂ baseline database version 07.
SDG 13: Climate Action EF_{grid,CM,y} Combined Margin CO ₂ emission factor in year y	0.8970 tCO ₂ /MWh	The value of the parameter was checked from registered CDM PDD ^{/10/} and found correct. The value of the parameter was calculated as follows: The combined margin emissions

		factor is calculated as follows: $EF_{grid,CM,y} = EF_{grid,OM,y} * W_{OM} + EF_{grid,BM,y} * W_{BM}$ Where: $EF_{grid,BM,y}$ = Build margin CO₂ emission factor in year y (tCO₂/MWh) $EF_{grid,OM,y}$ = Operating margin CO₂ emission factor in year y (tCO₂/MWh) W_{OM} = Weighting of operating margin emissions factor (%) = 75% W_{BM} = Weighting of build margin emissions factor (%) = 25%
--	--	--

For 2nd Crediting Period

Parameter/ Description	Value applied	MoV
SDG 13: Climate Action EF_{grid,OM,y} Operating Margin CO ₂ emission factor in year y	0.9522 tCO ₂ /MWh	The value was checked from GS4GG PDD ^{/10/} and found correct. The value was calculated generation weighted average using data for the year 2018-19, 2019,20 and 2020-21, sourced from sourced from CEA CO ₂ baseline database version 17.
SDG 13: Climate Action EF_{grid,BM} Build Margin CO ₂ emission factor in year y	0.8653 tCO ₂ /MWh	The value of the parameter was checked from GS4GG PDD ^{/10/} . The value of the parameter was sourced from CEA CO ₂ baseline database version 17.
SDG 13: Climate Action EF_{grid,CM,y} Combined Margin CO ₂ emission factor in year y	0.9305 tCO ₂ /MWh	The value of the parameter was checked from registered CDM PDD ^{/10/} and found correct. The value of the parameter was calculated as follows: The combined margin emissions factor is calculated as follows: $EF_{grid,CM,y} = EF_{grid,OM,y} * W_{OM} + EF_{grid,BM,y} * W_{BM}$ Where: $EF_{grid,BM,y}$ = Build margin CO₂ emission factor in year y (tCO₂/MWh) $EF_{grid,OM,y}$ = Operating margin CO₂ emission factor in year y (tCO₂/MWh) W_{OM} = Weighting of operating margin emissions factor (%) = 75% W_{BM} = Weighting of build margin emissions factor (%) = 25%

b. Data and parameters monitored

Relevant Indicator	SDG	SDG 7.2.1: Renewable energy share in the total final energy consumption
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Data/parameter:	EG _{facility,y}
Unit	MWh/year
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh
Measured/calculated/default	Calculated
Source of data	Joint meter reading OR break up sheet provided by power purchaser (referred as 'Form B')
Value(s) of monitored parameter	230,149.034 Crediting Period wise break up : CP1 (01/10/2019 to 04/08/2021): 159,534.079 CP2 (05/08/2021 to 30/06/2022): 70,614.956
Monitoring equipment	Monitoring equipment: electricity meters at feeders Recording: Electronic and paper Recording Frequency: Continuous monitoring and monthly recording Responsibility: The operators/ O&M team is responsible for measurement Calibration Testing Frequency: Annually Accuracy class of meters: 0.2s (as per state regulation) Archiving: Crediting Period + 2 years The detailed schedule of Calibration and energy meters used in project activity has been mentioned in Appendix 2
Measuring/reading/recording frequency:	Continuous monitoring and monthly recording
Calculation method (if applicable):	The JMR is usually taken once in month for the bulk/ revenue meter at the common substation as well as at feeder meters. Transmission losses are derived between feeders and substation. JMR gives electricity export, electricity import and losses till metering point at feeders. By using these data net export by the WTGs in the project is calculated (as in some case net export is not explicitly reported in JMR). The details of the Meters are provided in appendix 2 of the report.
QA/QC procedures:	Cross check measurement results with records for sold electricity – where electricity sale is applicable
Cross Checks	The value was cross checked between JMR, Invoices and site log book.

Relevant Indicator	SDG	SDG 13.2.1: Climate Action
Data/parameter:		ER _y
Unit		tCO ₂ e/year
Description		Emission reductions achieved per year
Source of data checked by the assessment team		Emission reduction sheet
Value(s) of monitored		01/10/2019 to 31/12/2019: 10,906

parameter	01/01/2020 to 31/12/2020: 77,483 01/01/2021 to 31/12/2021: 82,380 01/01/2022 to 30/06/2022: 38,024 Total: 208,793 Crediting Period wise break up : CP1 (01/10/2019 to 04/08/2021): 143,090 CP2 (05/08/2021 to 30/06/2022): 65,703
Means of verification:	Assessment team checked that the parameter is calculated. The electricity exported & imported measured by Energy meter installed at substation. The JMR is cross-checked with the invoice copies. Emission reduction calculated in thus correct and accurate.
Cross check mechanism	All the formulas are applied in line with the GS4GG PDD, Version 04.0

Relevant SDG Indicator	SDG 8.5.1: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value				
Data/parameter:	Number of employment generation				
Unit	Number				
Description	Number of people employed directly due to the project activity				
Measured/calculated/default	Not Applicable				
Source of data	Plant records or training records for all the employees/ Letter from O&M contractor for employment generation/ VVB interview with employees, local stakeholders etc.				
Value(s) of monitored parameter	Total employment opportunities generated during the current monitoring period is 47.				
	Further, below is the breakup of employment generated during the monitoring period.				
	Year	Skilled	Semi skilled	Unskilled	Total
	2019	2	5	3	10
	2020	1	5	5	11
	2021	2	7	7	16
2022	2	7	1	10	
Value(s) of monitored parameter	Four unskilled female staffs were employed during the current monitoring period.				
	Crediting Period wise break up : CP1(01/10/2019 to 04/08/2021): 28				
	CP2(05/08/2021 to 30/06/2022): 19				
Monitoring equipment	-				

Measuring/reading/recording frequency:	Monthly monitoring and annual compilation
Calculation method (if applicable):	The average hourly earnings of a person is calculated by considering 8 hours per day working as per Indian standards and is depicted below. the minimum monthly wages for a semi-skilled worker is INR 19,500. Thus the hourly wage is = $19,500 / (30 \times 8)$ = INR 81.25 As per the notification² from Chief Labour Commissioner, for semi-skilled workers working in B Category of cities, the daily wage is 625, and accordingly the average hourly earnings come out to be INR 78.12 Also, as India is a member of International Labour Organization (Organization (ILO)), project developer maintains the standards set by ILO³
QA/QC procedures:	The number of persons employed would be mentioned in the plant register, which can be crossed checked with attendance register. Average hourly earnings of the employees/workers can be checked and calculated from the salary slips. The information required for this parameter is being checked by VVB during site visit and through documents provided by PP.
Cross Checks:	The hourly wages checked from the notification from the order published by the Chief Labour Commissioner (Central) ⁴ .

Relevant SDG Indicator	8.6.1 Proportion of youth (aged 15-24 years) not in education, employment or training
Data/parameter:	Quality of employment
Unit	-
Description	Number of trainings provided per year
Measured/calculated/default	Not Applicable
Source of data	Plant records or the training records for all the employees / DOE interview with employees, etc.
Value(s) of monitored parameter	During the current monitoring period, a total of 30 trainings were conducted. Training for the technology supplier, the Project organize training for the staff on the technology and the monitoring of the plant operation, and the emergency and safety procedures

² <https://clc.gov.in/clc/min-wages>

⁴ <https://www.ilo.org/global/standards/introduction-to-international-labour-standards/lang-en/index.htm>

	Crediting Period wise break up: CP1 (01/10/2019 to 04/08/2021): 4 CP2 (05/08/2021 to 30/06/2022): 26
Monitoring equipment	Not applicable.
Measuring/reading/recording frequency:	Annually
Calculation method (if applicable):	-
QA/QC procedures:	The data crosschecked annually with the training records for all the employees
Cross Checks:	Training records.

Environmental Safeguard	
Data/parameter:	Noise and Shadow Flickering
Unit	-
Description	The noise and shadow produced due to operation of wind power plant respect to nearest residential spot
Measured/calculated/default	Manual
Source of data	Grievance Register
Value(s) of monitored parameter	0
Monitoring equipment	Not applicable.
Measuring/reading/recording frequency:	Once in First Monitoring Period
Calculation method (if applicable):	-
QA/QC procedures:	-
Cross Checks:	VVB team has cross checked the grievance register to check and analyse safeguarding principle

Data/parameter:	Waste Oil Disposal
Unit	m ³
Description	Waste oil due to operation and Construction work of plant
Measured/calculated/default	Manual
Source of data	Plant Log Book
Value(s) of monitored parameter	0
Monitoring equipment	Not applicable.
Measuring/reading/recording	Once in a Monitoring Period

frequency:	
Calculation method (if applicable):	-
QA/QC procedures:	-
Cross Checks:	VVB team has cross checked the plant log book to check and analyse safeguarding principle

The verification team confirms;

- The monitoring plan implemented is in line with monitoring plan included in approved GS4GG PDD.
- The monitoring complies with the requirement of the applied methodology.
- The information inflow (from data generation, aggregation, to recording, calculation and reporting) is included above under each parameter and confirms to the requirement of the approved PDD.
- The values included in the monitoring report and corresponding emission reduction sheets are verified, cross checked and included under each monitoring parameter, wherever appropriate
- The findings relevant to each parameter, wherever appropriate are discussed in detail in Appendix 1 of this report.

In summary, the verification team confirms that all the ex-post parameters are monitored in accordance with the approved monitoring plan and applied methodology.

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 calibration details such as make, accuracy class serial number is as per the meter available Onsite which was shared by PP and checked by verification team and found the details in line with approved PDD. The calibration details are presented in Appendix 2 of this report.

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 applicable norms and the meters are within the permissible error limit.

3.5 SDG Outcomes Monitoring

For Contributions to Sustainable Development

The verification team checked the sustainable development indicator parameters during the On-Site.

Assessment team also checked the Indian domestic REC web site (<https://recregistryindia.nic.in/>) & International REC device registry (<https://evident.services/device-register>) and confirms that the project is not undertaking any REC benefits at present nor intended to take it in near future.

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.

As per the sustainability monitoring plan in the approved PDD, verification team evaluated all sustainable development indicators as followed in the table:

Item	Baseline estimate	Project estimate	Net benefit
SDG 7: Affordable and Clean Energy	-	230,149.034 MWh	230,149.034 MWh
SDG 8: Decent Work and Economic Growth	-	No. of Employment Opportunities created: 47 No. of trainings conducted: 30	No. of Employment Opportunities created: 47 No. of trainings conducted: 30
SDG 13: Climate Action	208,793 tCO ₂ e	0	208,793 tCO ₂ e

Comparison of actual value of outcomes with estimates in approved GS PD

Item	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period
SDG 7: Affordable and Clean Energy	81,142 MWh/annum electricity generation for both crediting periods. 223,196.076 MWh for current monitoring period.	CP1 (01/10/2019 to 04/08/2021): 159,534.079 CP2 (05/08/2021 to 30/06/2022): 70,614.956 Total: 230,149.034 MWh

SDG 8: Decent Work and Economic Growth	10 people employed and minimum 1 training per year for both crediting periods. 3 training and 28 employment for this monitoring period.	No. of Employment opportunities created: 47⁵ CP1(01/10/2019 to 04/08/2021): 28 CP2(05/08/2021 to 30/06/2022): 19 <table><tr><th>Year</th><th>Skilled</th><th>Semi Skilled</th><th>Unskilled</th><th>Total</th></tr><tr><td>2019</td><td>2</td><td>5</td><td>3</td><td>10</td></tr><tr><td>2020</td><td>1</td><td>5</td><td>5</td><td>11</td></tr><tr><td>2021</td><td>2</td><td>7</td><td>7</td><td>16</td></tr><tr><td>2022</td><td>2</td><td>7</td><td>1</td><td>10</td></tr></table> No. of trainings conducted: 30 CP1 (01/10/2019 to 04/08/2021): 4 CP2 (05/08/2021 to 30/06/2022): 26	Year	Skilled	Semi Skilled	Unskilled	Total	2019	2	5	3	10	2020	1	5	5	11	2021	2	7	7	16	2022	2	7	1	10
Year	Skilled	Semi Skilled	Unskilled	Total																							
2019	2	5	3	10																							
2020	1	5	5	11																							
2021	2	7	7	16																							
2022	2	7	1	10																							
SDG 13: Climate Action	72,784/annum tCO₂e emission reduction for first crediting period and 75,502/annum tCO₂e emission reduction for second crediting period. 202,663 tCO₂e for current MP	CP1 (01/10/2019 to 04/08/2021): 143,090 tCO₂e CP2 (05/08/2021 to 30/06/2022): 65,703 tCO₂e Total: 208,793 tCO₂e																									

The annual estimated power generation for the project activity is 81,142 MWh, thus considering number of days covered during present monitoring period to be 1004, the estimated power generation is 223,196.076 MWh. Assessment team checked it and found correct.

The project leads to employment opportunities which would not have been possible in the baseline scenario. The project provides employment to at least 10 persons per year. Taking the Monitoring Period is of 1,004 days, the estimated number of employment for this monitoring period is 28. Assessment team checked it and found correct.

Also project activity improves the quality of employment by giving training to employee. Thus, minimum 1 training per year will be conducted by the project activity. Taking the Monitoring Period is of 1,004 days, the estimated number of training for this monitoring period is 3. Assessment team checked it and found correct.

The annual estimated emission reduction for the project activity is 72,784 tCO₂e for CP1 & 75,502 tCO₂e for CP2 respectively, thus considering number of days covered during present monitoring period to be 1004(674 days for CP1 and 330 days for CP2), the estimated emission reduction contributing towards SDG 13 will be 202,663 tCO₂e. Assessment team checked it and found correct.

The adequacy and compliance of the monitoring plan in the Monitoring report was found as per the requirements laid by the approved GS4GG PDD. The information flow (from data

⁵ It is to be noted that the employment numbers are not cumulative (unlike ERs).

generation, aggregation, to recording, calculation and reporting) is already included under respective parameter above. The verification team has verified all the data and collected evidence as per the required monitoring frequency and found to be correct and appropriate meeting the requirements of the applied methodology and GS4GG PDD.

As a part of continuous feedback from stakeholders, the grievances register is being placed at site and is being continuously monitored and addressed through the grievances cell on regular basis and maintained in a register at ReNew Wind Energy (AP) Private Limited site office. No comments were received during the monitoring period and same is verified with copies of grievance register submitted to assessment team.. The grievance register provide to verification team was also checked it was found that during the current monitoring period, no comments/feedbacks were received from the local stakeholders.

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.

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 06 and corresponding ER calculation spreadsheets and are consistent with the applied methodology ACM0002- Grid-connected electricity generation from renewable sources - Version 20.0 for monitoring period (01/10/2019 to 30/06/2022) and the monitoring plan contained in the GS4GG PDD. The parameters are complete in this monitoring period.

After verifying the reported figures with the raw data sources, it's confirmed that the values of the parameters from the raw data sources are consistent with those quoted in the Monitoring Report Version 05 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:

$$BE_y = EG_{\text{facility},y} * EF_{\text{grid,CM},y}$$

Where:

BE_y	=	Baseline emissions in year y (t CO ₂)
$EG_{\text{facility},y}$	=	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh
$EF_{\text{grid,CM},y}$	=	Combined margin CO ₂ emission factor for grid connected power generation in year y

For Portion of Monitoring Period Covered under 1st Crediting Period:

$$\begin{aligned}
 BE_y &= 159,534.079 \text{ MWh} \times 0.8970 \text{ tCO}_2/\text{MWh} \\
 &= 143,090 \text{ tCO}_2\text{e (Round Down Value)}
 \end{aligned}$$

For Portion of Monitoring Period Covered under 2nd Crediting Period:

$$\begin{aligned}BE_y &= 70,614.956 \text{ MWh} \times 0.9305 \text{ tCO}_2/\text{MWh} \\ &= 65,703 \text{ tCO}_2\text{e (Round Down Value)}\end{aligned}$$

$$\begin{aligned}\text{Total Baseline emission in this monitoring period} &= 143,090 \text{ tCO}_2\text{e} + 65,703 \text{ tCO}_2\text{e} \\ &= 208,793 \text{ tCO}_2\text{e}\end{aligned}$$

Project emissions:

$$\text{Project Emissions, } PE_y = 0$$

Emission reductions:

$$ER_y = BE_y - PE_y - LE_y$$

Where:

$$ER_y = \text{Emission reductions in year } y \text{ (t CO}_2\text{e)}$$

$$BE_y = \text{Baseline emissions in year } y \text{ (t CO}_2\text{e)}$$

$$PE_y = \text{Project emissions in year } y \text{ (t CO}_2\text{e)}$$

$$LE_y = \text{Leakage emissions in year } y \text{ (tCO}_2\text{e)}$$

Therefore,

$$\begin{aligned}ER_y &= 208,793 - 0 - 0 \\ &= 208,793 \text{ tCO}_2\text{e (Rounded down)}\end{aligned}$$

3.7 Management and Operational System

The responsibilities of data measurement, collection, verifying, archiving etc. have been clearly defined in the approved PDD V06. The same practice is followed On-Site and it is confirmed by the assessment team during the on-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 GS4GG PDD.

It's verified during the On-Site audit, the monitoring procedure as well as the internal quality management and control procedures are stipulated in the PDD. The monitoring personnel have been interviewed onsite by the verification team and it's confirmed that the monitoring is implemented as per the procedure. Also, the training record (training register and attendance sheet) has been checked by the assessment team and it is confirmed that the monitoring personnel are 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. The monitoring plan maintained for first crediting period, is continuing for second crediting period.

4. REFERENCE

LIST OF DOCUMENTS	
S. No.	Document/Evidence/Reference/Web link, Version, Date
/01/	GS MR 11404 Version 01 dated 16/06/2022
/02/	GS MR 11404 Version 06 dated 22/07/2023
/03/	Emission reduction Sheet version 01 dated 16/06/2022
/04/	Emission reduction Sheet version 04 dated 02/05/2023
/05/	Joint Meter Reading (JMR)/ Invoices
/06/	Actual geo-coordinates
/07/	Calibration certificates
/08/	Training record
/09/	GS4GG PDD dated 22/07/2023 and Validation report dated 23/07/2023
/10/	EHS Policy
/11/	ACM0002- Grid-connected electricity generation from renewable sources - Version 20.0
/12/	CDM validation and verification standard for project activities, Version 03.0
/13/	The Gold Standard for Global Goals "Principles and Requirement" V 1.2
/14/	Employment records
/15/	Commissioning certificates for the power plant
/16/	Log book records for scheduled maintenance of the power plant for the complete monitoring period
/17/	Grievance register
/18/	CSR records
/19/	HR policy of ReNew Wind Energy (AP) Private Limited
/20/	Employment Contract

5. FINAL VERIFICATION STATEMENT

Applus+ Certification has been engaged by ReNew Wind Energy (AP) Private Limited to perform the 1st verification of the “Lingasugur Wind Power Project in Karnataka”

The management of ReNew Wind Energy (AP) 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 approved PDD Ver. 06 and the applied methodology ACM0002- “Grid-connected electricity generation from renewable sources” – Version 20.0.

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

- the project is operated as planned and described in the approved GS4GG project design document, Version 06;
- the monitoring plan is as per the applied methodology;
- the monitoring in Monitoring Report is as per the PDD and the monitoring plan approved by GS4GG;
- 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 “Lingasugur Wind Power Project in Karnataka” for the monitoring period 01/10/2019 to 30/06/2022 (Both days included) as reported in Monitoring Report, prepared on the basis of the project’s Monitoring Plan are fairly stated. The monitoring period consists of first and second crediting period. From 01/10/2019 to 04/08/2021 the monitoring period is under first crediting period and from 05/08/2021 to 30/06/2022, the monitoring period is under second crediting period.

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

Reporting period: 01/10/2019 to 30/06/2022 (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	208,793 tCO ₂ e equivalents
Emission reductions	208,793 tCO ₂ e equivalents

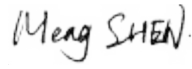
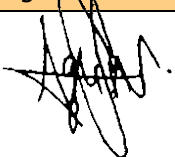
Vintage wise breakup of verified emission reduction is given below:

Year	Baseline emission (tCO ₂)	Project Emission (tCO ₂)	Emission Reduction (tCO ₂)
01/10/2019 to 31/12/2019	10,906	0	10,906
01/01/2020 to 31/12/2020	77,483	0	77,483
01/01/2021 to 31/12/2021	82,380	0	82,380
01/01/2022 to 30/06/2022	38,024	0	38,024

Date: 23/07/2023
Lead Auditor: Mr. Pankaj Kumar
Tech. Expert: Mr. Pankaj Kumar
Tech. Reviewer: Mr. Simon Shen

Approver (*Applus+ Certification VVB Technical Manager*)

Mr. Agustín Calle de Miguel

ASSESSMENT TEAM	
Lead Auditor: Mr. Pankaj Kumar	Technical Reviewer: Mr. Simon Shen
Signature: 	Signature: 
Approver: Mr. Agustín Calle de Miguel	
Signature: 	

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

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	01
Raised by:	Pankaj Kumar	Ref. to checklist in above tables:	3.2
Description of the audit finding		Date:	24/08/2022
Following discrepancies observed during the review of monitoring report: 1. Monitoring report is found not clear about inclusion of first & last dates. Thus, Corrective action sought. PP is requested to update the monitoring period in line with the signed contract and PDD 2. Commissioning date of project activity is found missing in the monitoring report. Corrective action sought. 3. PP is requested to reframe the language throughout the monitoring report as the project is already commissioned and contributing towards sustainable development & emission reductions. 4. PP requested to submit technical specifications of the power plant, O&M agreements and Declaration confirming project registered under other GHG schemes along with there would not be double counting of credits. Kindly submit.			
Project Participant's response		Date:	26/08/2022
1. The Monitoring Period duration has been mentioned in Key Project Information Section in Monitoring Report. 2. The commissioning date of project activity is mentioned in Section B.1 of updated Monitoring Report. 3. The language of Monitoring Report has been corrected. 4. Technical specifications of WTG, O&M Agreement, Declaration regarding Double Counting have been submitted to assessment team.			
Documentation provided as evidence by Project Participant			
Technical specifications of WTG, O&M Agreement, Declaration regarding Double Counting, Updated Monitoring Report.			
Auditor's assessment comment		Date:	02/09/2022
1. PP has submitted the updated MR version 03 dated 26/08/2022 mentioning the monitoring period. Upon verification VVB have been found that it is in line with the registered PDD. 2. VVB has found that the commissioning dates of WTGs are not mentioned in the updated MR version 03 dated 26/08/2022. PP is requested to update the MR and mentioned the same. 3. VVB upon verification found that the language in the monitoring report version 03 dated 29/08/2022 is still not corrected PP is requested to correct it as the project is already commissioned and contributing towards sustainable development & emission reductions. 4. PP has submitted O&M agreement, technical details of WTGs, declaration regarding Double Counting and declaration confirming that the project is registered under other GHG scheme which have been verified by the VVB. CAR is open.			
Project Participant's response		Date:	09/09/2022
Language of Monitoring Report has been corrected.			
Documentation provided as evidence by Project Participant			
Updated Monitoring Report.			

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	01
Raised by:	Pankaj Kumar	Ref. to checklist in above tables:	3.2
Auditor's assessment comment		Date:	13/09/2022
Language has been now updated in revised Monitoring report made language consistent as per commissioned and contributing towards sustainable development and emission reduction. CAR is closed.			

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	02
Raised by:	Pankaj Kumar	Ref. to checklist in above tables:	3.5
Description of the audit finding		Date:	24/08/2022
Single line diagram showing all relevant monitoring points is found missing in Section-C, of the Monitoring Report. Thus, corrective action sought.			
Project Participant's response		Date:	26/08/2022
Single Line Diagram has been provided in Section C of updated Monitoring Report.			
Documentation provided as evidence by Project Participant			
Updated Monitoring Report.			
Auditor's assessment comment		Date:	02/09/2022
1. VVB has verified the revised MR version 03 dated 26/08/2022 containing Single line diagram showing all relevant monitoring points. CAR closed.			

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	03
Raised by:	Pankaj Kumar	Ref. to checklist in above tables:	3.5
Description of the audit finding		Date:	24/08/2022
The supporting's to the indicator mentioned relevant to SDG is missing. Corrective action is sought for the same.			
Project Participant's response		Date:	26/08/2022
Following supporting has been submitted for SDG : 1. SDG 7 – JMR and Invoices have been provided. 2. SDG 8 – Employment Contract, Training Attendance and Daily Attendance Register have been provided. 3. SDG 13 – Emission Reduction Spreadsheet has been provided.			
Documentation provided as evidence by Project Participant			
JMR, Invoices, Employment Contract, Training Attendance, Daily Attendance Register, ER Sheet.			
Auditor's assessment comment		Date:	02/09/2022

1. VVB has verified the JMR and invoices values in the ER sheets and found them consistent with the documents provided. 2. VVB has verified the ER sheet and found the data consistent with the evidence submitted by PP. 3. VVB has verified employment contract, Training attendance and daily attendance register provided by the PP however VVB has found some inconsistency in the number of people trained during the monitoring period. Thus, CAR is raised.		
CAR is open.		
Project Participant's response	Date:	09/09/2022
Number of people trained has been corrected as per supporting documents and the same has been mentioned in Monitoring Report.		
Documentation provided as evidence by Project Participant		
Updated Monitoring Report		
Auditor's assessment comment	Date:	13/09/2022
1. VVB has verified the number of people trained during the current monitoring period consistent throughout in revised MR.		
CAR closed.		

Type:	☒ CAR ☐ CL/CR ☐ FAR	Number:	04
Raised by:	Pankaj Kumar	Ref. to checklist in above tables:	3.4
Description of the audit finding	Date:	24/08/2022	
PP is requested to submit the details of monitoring meters and calibration dates as it is found missing in the MR. corrective action sought.			
Project Participant's response	Date:	26/08/2022	
Calibration details of Monitoring Meters have been provided in updated Monitoring Report.			
Documentation provided as evidence by Project Participant			
Calibration Report, Updated Monitoring Report.			
Auditor's assessment comment	Date:	02/09/2022	
PP is requested to submit the details of monitoring meters and calibration dates as it is found missing in the MR version 03 dated 26/08/2022. corrective action sought.			
CAR is open.			
Project Participant's response	Date:	09/09/2022	
Meter details and meter calibration details have been provided in Annexure 1 of updated Monitoring Report.			
Documentation provided as evidence by Project Participant			
Updated Monitoring Report Version 04 dated 09/09/2022.			
Auditor's assessment comment	Date:	13/09/2022	
VVB has verified the calibration dates mentioned in the revised MR and found them in line with the calibration certificates provided by PP.			
CAR closed.			

Appendix 2: Calibration details of monitoring meters

The calibration details of meters involved in the project activity is as below:

Meter Location	Meter No.	Type of Meter	Accuracy Class	Calibration Date	Validity of Calibration	Delay in Calibration
Feeder-1	18068227	Main Meter	0.2s	15/09/2019	14/09/2020	No Delay
				08/08/2020	07/08/2021	
				21/03/2021	20/03/2022	
				27/11/2021	26/11/2022	
	18068230	Check Meter	0.2s	15/09/2019	14/09/2020	
				08/08/2020	07/08/2021	
				21/03/2021	20/03/2022	
				27/11/2021	26/11/2022	
Feeder-2	18068218	Main Meter	0.2s	15/09/2019	14/09/2020	No Delay
				08/08/2020	07/08/2021	
				21/03/2021	20/03/2022	
				27/11/2021	26/11/2022	
	18068254	Check Meter	0.2s	15/09/2019	14/09/2020	
				08/08/2020	07/08/2021	
				21/03/2021	20/03/2022	
				27/11/2021	26/11/2022	

Appendix 3: Audit Team CVs

Name	SHORT CV. BACKGROUND INFORMATION
Mr. Pankaj Kumar	Mr. Pankaj Kumar has done M. Sc in Environment Management from Forest Research Institute, Dehradun and B. Sc. (Hons.) in Environment & Water Management from Magadh University, Bihar, India. He has also done Post Graduate Diploma in Environmental Law from NLSIU, Bangalore. He has more than 12 years of working experience in GHG Assessments and has participated during his career in Agencies and DOEs like MITCON, Agrinergy, Carbon Check and is empanelled with Applus+ Certification since 2015 for the performance of CDM/VCS/GS project assessments. He has extensive experience in the Renewable, Waste Management and Energy Demand Scopes of UNFCCC CDM and has done more than 100 Validations and Verifications of PAs and PoAs as Lead Auditor, Technical Expert and Technical Reviewer, mainly in Asia, Africa, USA, Asia Pacific and Americas under CDM, Verified Carbon Standard, Gold Standard & Social Carbon Standard, Brazil. He is an experienced, qualified and result oriented Environment and climate change professional having 16 yrs. of relevant experience in Climate Change (Mitigation & Adaptation), Environmental Due Diligence, Disaster Risk Reduction, Climate finance, adaptation planning, capacity building, validation and verification of GHG project. He can also provide technical support for environmental investigative, remedial projects involving air, water and soil, Waste management, EIA, Environmental Compliance, ISO 14001, OHSAS 18001, GHG accounting (ISO 14064) and Carbon foot printing.
Mr. Simon Shen	Mr. Simon Shen (Master's Degree in Thermal Energy Engineering, Bachelor's Degree in Environmental Engineering) is an Auditor appointed by Applus+ LGAI for the GHG project assessment, auditing and technical review. He has more than 6 years of work experience in CDM/GS4GG/VCS project assessment and review with Applus+, apart from the years of experience working as GHG Auditor and ISO 9001/14001 in TUV SUD for 3.5 years before he joined Applus+. Mr. Simon Shen has extensive experience also as former Applus+ Shanghai CDM Technical Manager.