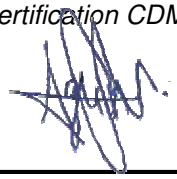
Verification and certification report form for CDM project activities

(Version 04.0)

Complete this form in accordance with the instructions attached at the end of this form.

BASIC INFORMATION			
Title and UNFCCC reference number of the project activity	Jangi 91.8 MW wind farm in Gujarat (UNFCCC Ref. No. 6702)		
Scale of the project activity	☒ Large-scale ☐ Small-scale		
Version number of the verification and certification report	02		
Completion date of the verification and certification report	27/09/2021		
Monitoring period number and duration of this monitoring period	04 01/06/2018 – 31/12/2020(including first and last dates)		
Version number of the monitoring report to which this report applies	03		
Crediting period of the project activity corresponding to this monitoring period	01/11/2012 -31/10/2022(Fixed)		
Project participants	GP Wind (Jangi) Private Limited		
Host Party	India		
Applied methodologies and standardized baselines	ACM0002 - Consolidated baseline methodology for grid-connected electricity generation from renewable sources (Version 12.3.0) Standardized Methodology: Not Applicable		
Mandatory sectoral scopes	1: Energy industries (renewable - / non-renewable sources)		
Conditional sectoral scopes, if applicable	NA		
Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD	658,981 tCO_{2e}		
Certified amount of GHG emission reductions or GHG removals for this monitoring period	Amount before 1 January 2013	Amount from 1 January 2013 until 31 December 2020	Amount from 1 January 2021
	0 tCO_{2e}	525,437 tCO_{2e}	0 tCO_{2e}
Name and UNFCCC reference number of the DOE	LGAI Technological Center, S.A. (Applus+ Certification) UNFCCC Ref. No.: E-0032		

Name, position and signature of the approver of the verification and certification report	Mr. Agustín Calle de Miguel *Applus+ Certification CDM Technical Manager* Signature: 

SECTION A. Executive summary

GP Wind (Jangi) Private Limited has commissioned LGAI Technological Center, S.A. (Applus+ Certification) to perform 4th periodic verification of the "Jangi 91.8 MW wind farm in Gujarat". The project activity located in Jangi town, Kutch district of Gujarat state, India. The total installed capacity of the project is 91.8 MW (51 X 1.8 MW).

The purpose of the project activity is to generate clean form of electricity through renewable wind energy sources. The electricity generated from the project activity is supplied to NEWNE grid (now Indian grid).

During the reported monitoring period 01/06/2018 to 31/12/2020(first and last date included) the project activity has supplied 553,616.145 MWh of electricity, and thus contributing to the GHG reductions of 525,437 tCO_2e.

1. Verification 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 as well as its validation report, the applied monitoring methodology, relevant decisions, clarifications and guidance from the CMP and the EB 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 and related rules and guidance. Based on the requirements in the CDM validation and verification standard for project activities, Version 02.0, 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 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.

2. Methodology:

LGAI Technological Center, S.A. (Applus+ Certification) – Hereinafter referred as 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.

3. Desk Review

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.

The Monitoring Report version 01 submitted by the PP was made publicly available on the UNFCCC website before the verification activities started. The published 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 was paid;
- 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.

4. 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
Mr Jitendra Mohan Singh[1]	LA/TE	YES	YES	NA
Mr. Sukanta Das[2]	LA/TE	YES	YES	NA
Mr. Denny Xue	TR	YES	YES	NA

The curriculum vitae of the DOE's Verification team members is provided in Appendix 2 of this report.

5. Review of Documentation:

The Monitoring Report version 01 submitted by the PP was made publicly available on the UNFCCC website before the verification activities started. The published MR was assessed based on all the relevant documents. A cross-check between information provided and information from other sources has been done. A complete list of documents reviewed is available in Appendix 3 of this report.

6. On-site Assessment and follow-up Interviews:

As a part of the verification, the on-site inspection has been performed by the assessment team. The objective of the on-site assessment is to:

[1] LA/TE since 10/06/2021. The changes have been communicated accordingly to the PP(s)/client(s) in accordance with the DOE's procedures.

[2] Mr. Sukanta Das was LA/TE till 09/06/2021. The changes have been communicated accordingly to the PP(s)/client(s) in accordance with the DOE's procedures

- 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 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.

The details are mentioned in section D.2 of this report.

7. 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. The source of the evidences will be discussed in Appendix 3 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.

8. 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) Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;
b) Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;
c) 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 (CL) if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

All CARs and CLs 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 the CARs/CLs/FARs are being discussed in Appendix 4 of this report.

9. 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 of issuance is submitted to CDM EB along with the requisite documents.

SECTION B. Verification team, technical reviewer and approver

B.1. Verification team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Verification findings
1.	Lead Auditor/Technical Expert	OR	Singh[3]	Jitendra Mohan	True Quality Certifications Private Limited-Outsourced entity	Yes	No	No	Yes
2.	Lead Auditor/Technical Expert	OR	Das[4]	Sukanta	True Quality Certifications Private Limited-Outsourced entity	Yes	Yes	Yes	Yes

B.2. Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	EI	Xue	Denny	Applus+ Certification
2.	Approver	IR	Calle de Miguel	Agustin	Applus+ Certification

SECTION C. Application of materiality

C.1. Consideration of materiality in planning the verification

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Human errors: Readings from Meters (if not automatic)	LOW	Human error is likely to occur if the monitoring personnel are not trained well or inexperienced in data recording procedures and monitoring processes.	All the personal are well trained to monitor and collect data and thus risk associated with Human error is minimized. Assessment team checked the training records to confirm that all the personal are well trained to handle the activities related to monitoring. Assessment team checked the training records for the complete monitoring period and confirm that the personal are well trained to monitor and collect data for the project activity.
2.	Human error: Quantification of emission reduction	LOW	Use of spreadsheets without adequate data control, changes/updates, version tracking, traceability and	All the JMRs (Monthly meter reading reports) sheets and the invoices for the complete monitoring period are checked

[3] LA/TE since 10/06/2021. The changes have been communicated accordingly to the PP(s)/client(s) in accordance with the DOE's procedures

[4] Mr. Sukanta Das was LA/TE till 10/06/2021. The changes have been communicated accordingly to the PP(s)/client(s) in accordance with the DOE's procedures

			security	and thus the assessment team confirms that the ER value is conservative and correct.

C.2. Consideration of materiality in conducting the verification

In line with Guidelines for Application of materiality in verifications, the verification team has conducted a complete verification of all the information presented in the monitoring report and data monitored as presented in the emission reduction calculation spread sheet. There are no material errors, overestimation of ER, omission or misstatement.

SECTION D. Means of verification

D.1. Desk/document review

The verification was performed primarily based on the review of the monitoring report and the supporting documentation. This process included review of data and information presented to verify their completeness and review of the monitoring plan and monitoring methodology, paying particular attention to the frequency of measurements, the quality of metering equipment used including calibration requirements, and the QA/QC procedures, and an evaluation of data management and the QA/QC system in the context of their influence on the generation and reporting of emission reduction.

The initial MR Version 01 submitted by the project participant and additional background documents related to the emission reductions are reviewed as an initial step of the verification process. The subsequent step involved the identification of corrective action requests, clarification requests and Forward action request (CAR, CL and FAR) which are presented in Appendix 4 of this report. As a result of these findings, the MR is revised & submitted by PP. A complete list of all documents and records reviewed is as attached in Appendix 3 of this report.

D.2. On-site inspection

Duration of on-site inspection: 02/06/2021				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
1.	The verification team conducted visit to the project site to confirm the information and to resolve issues identified in the document review. An on-site assessment was conducted as a part of verification activity and involved: 1) an assessment of the implementation and operation of the CDM project activity as per the registered PDD 2) a review of information flows for generating, aggregating and reporting of the monitoring parameters 3) interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the Monitoring Plan 4) a cross-check between information provided in the MR and data from other sources 5) a check of the monitoring equipment including calibration performance, and observations of monitoring practices against the requirements of the PDD and the applied methodology 6) a review of calculations and assumptions made in determining the GHG data and ERs, and 7) an identification of QA/QC procedures in place to prevent, or identify and correct, any errors or omissions in the reported monitoring parameters	Kutch District, Gujarat, India	02/06/2021	Sukanta Das[5]

D.3. Interviews

No.	**Interviewee**			**Date**	**Subject**	**Team member**
	Last name	**First name**	**Affiliation**			
1.	Rajan	Mr. Srinivasan Sundar	Director	02/06/2021	As mentioned above in section D.2 of this report	Sukanta Das[6]
2.	Bambhava	Lakhan	Site In charge	02/06/2021	As mentioned above in section D.2 of this report	
3..	Sharma	Barun	Consultant, EKI Energy Service Ltd.	02/06/2021	As mentioned above in section D.2 of this report	
2.	Ghose	Bibhushita	Consultant, EKI Energy Service Ltd.	02/06/2021	As mentioned above in section D.2 of this report	

D.4. Sampling approach

[5] OSV was done by Mr. Sukanta Das prior to change of LA/TE. New LA/TE was not part of on-site inspection
[6] OSV was done by Mr. Sukanta Das prior to change of LA/TE. New LA/TE was not part of on-site inspection

No sampling is used as the verification team has visited site along with the substations. The verification team has reviewed all the documents like commissioning certificates, JMR (monthly reports) sheets, invoices etc

D.5. Clarification requests (CLs), corrective action requests (CARs) and forward action requests (FARs) raised

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Compliance of the monitoring report with the monitoring report form	00	01	00
Compliance of the project implementation and operation with the registered PDD	00	02	00
Post-registration changes	00	00	00
Compliance of the registered monitoring plan with the methodologies including applicable tools and standardized baselines	00	00	00
Compliance of monitoring activities with the registered monitoring plan	00	01	00
Compliance with the calibration frequency requirements for measuring instruments	00	01	00
Assessment of data and calculation of emission reductions or net removals	00	01	00
Assessment of reported sustainable development co-benefits	00	00	00
Global stakeholder consultation	00	00	00
Others (please specify)	00	00	00
Total	**00**	**06**	**00**

SECTION E. Verification findings

E.1. Compliance of the monitoring report with the monitoring report form

Means of verification	The verification team has determined whether the monitoring report was completed using the valid version of the applicable monitoring report form. The verification team has checked whether all the sections of the monitoring report follow the guidelines provided in the template
Findings	CAR 01 was raised during the verification process and closed successfully. Please refer Appendix 4 for the complete closure of the CAR.
Conclusion	The MR was web hosted in version 08.0 of the MR form which is currently active version available in the UN platform. The monitoring report has been prepared as per the instructions provided in the template. DOE has made the version 01 of the monitoring report covering the monitoring period 01/06/2018 to 31/12/2020;(both the days included) publicly available through its dedicated interface on the UNFCCC CDM website on 22/04/2021[7]i.e. before undertaking the site visit for the verification. The verification team has concluded that the monitoring report was completed using the valid version of the applicable monitoring report form and is followed the guidelines contained in the template.

E.2. Remaining forward action requests from validation and/or previous verifications

This is 4th periodic verification of the project activity. No FAR was raised during the validation and previous verification which is in the progress.

E.3. Compliance of the project implementation and operation with the registered project design document

Means of verification	The verification team determined the conformity of the actual implemented project activity and its operation with the registered project design document. DOE has, by means of a desk review and an on-site visit, assessed whether all physical features of the proposed CDM project activity proposed in the registered PDD are in place, and that the project participants have operated the CDM project activity as per the

[7] https://cdm.unfccc.int/Issuance/MonitoringReports/mr_for_date.html?date=2021/04/22

	registered PDD.
Findings	CAR 02 and CAR 03 were raised during the verification process and closed successfully. Please refer Appendix 4 for the complete closure of the CAR.
Conclusion	The verification team has reviewed the commissioning certificates to conclude that the capacity of the project is same as mentioned in the registered PDD. The capacity does not change after the registration of the project activity as confirmed by the assessment team during verification site visit. All the wind turbines installed are in continuous operation. The situation of continuous operation is confirmed during site visit and evident from Breakdown log sheets. No major breakdown was found. Scheduled & preventive maintenance were carried out as per manufacturer specification for the power plant. No unforeseen activity observed during the present verification that can alter the applicability or additionality of the applied methodology. The details are checked by the assessment team from the plant log records and found correct. Assessment team also checked the implementation status of the project activity and confirm that detail as presented in the MR is correct. The project is located in Jangi town, Kutch District, Gujarat, India. The project site is about 20 km South East from Samakhiyali town. The project activity is located between Latitudes 23°15′02.0″ and 23°11′22.0″ North and between Longitudes 70°30′12.0″ and 70°38′26.0″ East. Geo coordinate of all WTGs are provided In Section A.2 of the revised monitoring report. Assessment team has checked the latitude and longitude of site location and WTGs location via GPS meter during onsite visit. The same is than crosschecked with Google earth software to confirm the latitude and longitude of the power plant. Commissioning dates, feeder wise connection of WTGs is verified with the commissioning certificate and found correct. The same is given below:

Sl. No.	WTG Location No.	WTG ID	Date of Commissioning
1	VW08	VWT/1800/11-12/2233	31/08/2011
2	VW44	VWT/1800/11-12/2234	31/08/2011
3	VW57	VWT/1800/11-12/2235	01/10/2011
4	JW03	VWT/1800/11-12/2236	31/08/2011
5	JW06	VWT/1800/11-12/2237	31/08/2011
6	JW07	VWT/1800/11-12/2238	31/08/2011
7	JW16	VWT/1800/11-12/2239	18/11/2011
8	JW17	VWT/1800/11-12/2240	19/11/2011
9	JW18	VWT/1800/11-12/2241	19/11/2011
10	JW19	VWT/1800/11-12/2242	19/11/2011
11	JW20	VWT/1800/11-12/2243	19/11/2011
12	JW22	VWT/1800/11-12/2244	18/11/2011
13	JW26	VWT/1800/11-12/2245	31/08/2011
14	JW28	VWT/1800/11-12/2246	31/08/2011
15	JW32	VWT/1800/11-12/2247	23/12/2011
16	VW59	VWT/1800/11-12/2248	23/12/2011
17	VW61	VWT/1800/11-12/2249	31/08/2011
18	VW70	VWT/1800/11-12/2250	23/12/2011
19	JW24	VWT/1800/11-12/2251	30/09/2011
20	JW31	VWT/1800/11-12/2252	31/08/2011
21	JW33	VWT/1800/11-12/2253	03/09/2011
22	JW34	VWT/1800/11-12/2254	03/09/2011
23	JW35	VWT/1800/11-12/2255	01/10/2011
24	JW36	VWT/1800/11-12/2256	29/09/2011
25	JW37	VWT/1800/11-12/2257	23/11/2011
26	JW39	VWT/1800/11-12/2258	20/10/2011
27	JW40	VWT/1800/11-12/2259	29/09/2011
28	JW41	VWT/1800/11-12/2260	20/10/2011

29	JW42	VWT/1800-11-12/2261	20/12/2011
30	JW43	VWT/1800/11-12/2262	30/09/2011
31	JW44	VWT/1800/11-12/2263	30/11/2011
32	JW45	VWT/1800/11-12/2264	23/11/2011
33	JW46	VWT/1800/11-12/2265	24/10/2011
34	JW47	VWT/1800/11-12/2266	24/10/2011
35	JW48	VWT/1800/11-12/2267	30/11/2011
36	JW49	VWT/1800/11-12/2268	24/10/2011
37	JW50	VWT/1800/11-12/2269	13/12/2011
38	JW51	VWT/1800/11-12/2270	13/12/2011
39	JW52	VWT/1800/11-12/2271	23/12/2011
40	JW53	VWT/1800/11-12/2272	21/12/2011
41	JW54	VWT/1800/11-12/2273	13/12/2011
42	JW55	VWT/1800/11-12/2274	20/12/2011
43	JW56	VWT/1800/11-12/2275	17/12/2011
44	JW57	VWT/1800/11-12/2276	20/12/2011
45	JW58	VWT/1800/11-12/2277	20/12/2011
46	JW59	VWT/1800/11-12/2278	17/12/2011
47	JW60	VWT/1800/11-12/2279	20/12/2011
48	JW61	VWT/1800/11-12/2280	20/12/2011
49	JW62	VWT/1800/11-12/2281	20/12/2011
50	JW63	VWT/1800/11-12/2282	12/11/2011
51	JW64	VWT/1800/11-12/2283	23/11/2011

The assessment team checked the above details during the verification site visit & review of commissioning certificates and found correct.

The total installed capacity of the project activity is 91.8 MW consisting of 51 WTG 1.8 MW each of V100 class 3 turbines manufactured by Vestas Denmark. Assessment team checked the technical specification of the power plant with the manufactures catalogue during the onsite visit and found consistent. The technical details of WTGs have been checked from the catalogue provided by manufacturer and during the physical visit. The detail as mentioned in the revised monitoring report is correct. Technical specification of installed WTGs are as follows:

Type	V100
Manufacturer	Vestas
Capacity	1.8 MW
Rotor	
Diameter	100 m
Swept Area	7850 m^2
Rotational Speed Static, Rotor	14.9 rpm
Speed, Dynamic Operation Range	9.3 – 16.6 rpm
Rotational Direction	Clockwise(front view)
Orientation	Upwind
Tilt	6^0
Hub Coning	2^0
Number of Blades	3
Aerodynamic Brakes	Full feathering
PP Blades	
Type Description	Airfoil shells bonded to supporting beam
Blade Length	49 m
Material	Fibre glass reinforced epoxy and carbon fibres
Blade Connection	Steel roots inserted
Air Foils	RISØ P + FFA – W3
Chord	3.9 m
Blade Root Outer Diameter	1.88 m
PCD of Steel Root Inserts	1.80 m
R49	0.54 m

	Twist(Blade root/blade tip)	245^0/-0.5^0
	Approximate Weight	7500 kg
	Blade Bearing	
	Type	2 row 4-point contact ball bearing
	Lubrication	Grease lubrication, automatic lubrication pump
	Pitch System	
	Type	Hydraulic
	Cylinder	Ø125/80 – 760
	Number	1 pcs./blade
	Range	-5^0 to 90^0
	Hydraulic System	
	Pump Capacity	50 l/min
	Working Pressure	200-230 bar
	Oil Quantity	260 l
	Motor	20 kW
	Gearbox	
	Type	1 planetary stage + 2 helical stages
	Ratio	1:113 nominal
	Cooling	Oil pump with oil cooler
	Oil heater	2 kW
	Max Gear Oil Temp	80^0 C
	Oil Cleanliness	-/15/12 ISO 4406
	Tower Structure	
	Type Description	Conical tubular
	Hub Heights(HH)	80m/95m
	The WTGs undergone scheduled maintenance as per the manufacturer's specifications and no unforeseen incident observed by the assessment team during the monitoring period. The details are checked by the assessment team from the plant log records and found correct. Based on the documentary evidence of commissioning certificates and physical verification DOE concludes that the project was implemented as per the registered PDD.	

E.4. Post-registration changes

E.4.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents[8]

Not applicable for present Monitoring period

E.4.2. Corrections

Not applicable for present Monitoring period.

E.4.3. Changes to the start date of the crediting period

The start date of crediting period was changed from 01/06/2013 (01/06/2013 – 31/05/2023) to 01/11/2012 (01/11/2012- 31/10/2022). The same was verified from the UNFCCC web site[9].

E.4.4. Inclusion of a monitoring plan

Not applicable for present Monitoring period.

E.4.5. Permanent changes from registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents

Not applicable for present Monitoring period.

[8] Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

[9] https://cdm.unfccc.int/Projects/DB/RWTUV1342443620.03/view

E.4.6. Changes to the project design

Not applicable for present Monitoring period

E.4.7. Changes specific to afforestation and reforestation project activities

Not applicable for present project activity.

E.5. Compliance of the registered monitoring plan with applied methodologies, applied standardized baselines, and other applied methodological regulatory documents

Means of verification	The verification team determined whether the registered monitoring plan is in accordance with the applied methodology ACM0002-Consolidated baseline and monitoring methodology for grid connected electricity generation from renewable sources (Version 12.3.0) including applicable tools.
Findings	There is no CAR/CL raised in this section.
Conclusion	The verification team is able to confirm that the monitoring plan contained in the registered PDD is in accordance with the approved methodology applied by the project activity, i.e. ACM0002-Consolidated baseline and monitoring methodology for grid connected electricity generation from renewable sources (Version 12.3.0) and its applicable tools. The same is followed onsite and thus assessment team confirms that project activity comply with the requirement of Approved methodology and registered PDD.

E.6. Compliance of monitoring activities with the registered monitoring plan

E.6.1. Data and parameters fixed ex ante or at renewal of crediting period

Means of verification	The assessment team checked the registered PDD to confirm the ex-ante fixed parameter mentioned in the current monitoring report. Assessment team also interviewed personal onsite whether monitoring has been to check further regarding the ex-ante values used for emission reduction calculation.
Findings	There is no CAR/CL raised in this section.
Conclusion	**$EF_{grid,CM}$** was ex-ante fixed parameter. Assessment team checked the values, source of data, choice of data, purpose of the data mentioned in the MR from the registered PDD and confirms that the similar approach was considered for the current monitoring period also. **The values of $EF_{grid,CM}$** was from the CEA CO_2 baseline database (Version 06) published by Central Electricity Authority (CEA). The default value as mentioned in the registered PDD and MR are same. The value of combined margin in India is being given by CEA and thus assessment team conclude that the value is correct and appropriate. The **$EF_{grid,CM,y}$** is calculated the weights for OM and BM are 0.75 and 0.25 respectively: 0.75*0.9947+0.25*0.8123. i.e. 0.9491 tCO_2/MWh The default value in turn is used for baseline calculation as per the formula given in the registered PDD for the current monitoring period. OM = 0.9947 tCO_2e/MWh (Confirmed and checked as per the registered CDM PDD) BM = 0.8123 tCO_2e/MWh (Confirmed and checked as per the registered CDM PDD) $EF_{grid,CM}$= 0.9491 tCO_2e/MWh (Confirmed and checked as per the registered CDM PDD).

E.6.2. Data and parameters monitored

Means of verification	The assessment team checked the registered PDD to confirm the ex-post parameter mentioned in the current monitoring report. Assessment team also interviewed the personal onsite to check further regarding the ex-post parameter monitoring and confirms that the same is in line with the registered PDD. ACM0002-Consolidated baseline and monitoring methodology for grid connected electricity generation from renewable sources (Version 12.3.0) which was the applied methodology during the registration of the project is also checked to ensure that monitoring parameters as mentioned in the registered PDD and current MR are in compliance with the methodology.

Findings	CAR 04 was raised during the verification process and closed successfully. Please refer Appendix 4 for the complete closure of the CAR.
Conclusion	As per the registered PDD version 03, only $EG_{facility,y}$ (Net electricity supplied by the project activity to the grid in year y (MWh). This parameter is monitored bidirectional tri-vector main meter and check meter installed at 33kV/220kV Wandhiya substation and 51 turbine meters installed at individual WTG (turbine). The export and Import values is recorded by representative of Gujarat Energy Transmission Corporation (GETCO) and PP. GETCO officials calculates the net electricity supplied to grid using export and import values and provides in form of share certificate to individual project owner. PP has no role in in calculation of net electricity supplied to grid and preparation share certificate. This is in line with the monitoring plan in registered PDD.. The accuracy class of meters as per registered PDD is 0.5s or better accuracy. The meters located at substation are of 0.2s and WTG meters of 0.5s accuracy class. The details of meter including make, accuracy, calibration date, validity of calibration provided in in **Appendix 5** of this report. PP has sourced the electricity exported to grid directly from Certificate for Share of electricity generated by wind farm (JMRs).. The total net electricity exported by the project activity to grid is 553,616.145 MWh during this monitoring period. The Assessment team checked the monthly share certificate/JMRs issued by the GETCO . Assessment team also cross-verified the net electricity exported to grid values with invoices raised by PP and found correct. Meters at both locations were identified calibration delay. Substation main meters were not covered under calibration from the months July 2018 to October 2018 and WTG meters were not covered udder calibration in the month December 2020. The results of delayed calibration are within permissible limit of accuracy class. Since share certificate contains only net electricity export to grid after deducting import, PP has applied now 0.4% error factor (double) instead of 0.2% in net electricity exported to grid from July 2018 to October 2018 as only substation meter was delayed calibrated during this period. Similarly, PP has now applied 1.0% (double) instead of 0.5% in net electricity supplied to grid for the period December 2012 to maintain conservativeness. Since, observed error in substation meter and 51 WTG meters were found less than the maximum permissible error i.e. 0.2 % and 0.5% respectively, thus applying 0.4% and 1.0% 1.0% error factor (considering double error as only net export available with PP) is conservative and acceptable to DOE.. This is in line with the requirement of paragraph 366(a) of VVS 02.0. Thus, acceptable to assessment team. During the verification all relevant monitoring parameters (as listed in section B.7.1 of 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. The Verification team identified that the correct emission factor is reported under the section D.1 of the monitoring report to apply the appropriately report the emission factor. Based on above assessment the verification team confirms that requisite parameters are monitored in line with registered monitoring plan.

E.6.3. Implementation of sampling plan

Means of verification	The verification assessed whether the compliance of the sampling efforts and surveys with the registered sampling plan in accordance with the "Standard for sampling and surveys for CDM project activities and programme of activities" if PP had applied a sampling approach to determine data and parameters monitored.
Findings	There is no CAR/CL raised in this section.
Conclusion	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 (Monthly meter Readings) report, invoice etc. and hence sampling plan was not required. The verification team hereby confirms that all the documents have been checked and thus DOE has not applied any sampling to the project activity for verification purposes.

E.7. Compliance with the calibration frequency requirements for measuring instruments

Means of verification	The verification team determined whether the calibration of the measuring equipment that has an impact on the claimed emission reductions is conducted by the PP at a frequency specified in the registered monitoring plan.
Findings	CAR 05 was raised during the verification process and closed successfully. Please refer Appendix 4 of this report for the detail closure of the CAR.
Conclusion	Metering arrangement is bi-directional tri-vector L & T make main meter and check meter of accuracy 02.s at substation of state electricity board and 51 Turbine meter secure make installed at each individual WTG with accuracy of 0.5s. The billing/invoice of net electricity exported to grid has been done by the data recorded from meter located at substation and 51 WTGs meter. The meter details and their calibration are provided in **Appendix 5 o**f this report. Assessment team checked calibration certificates of electricity meter and found that meters located at both places i.e. substation and WTG were identified as calibration delay. The calibration frequency of meters are once in three year. Substation main meters were not covered under calibration from the months July 2018 to October 2018 and WTG meters were not covered udder calibration in the month December 2020. The results of delayed calibration are within permissible limit of accuracy class. Since share certificate contains only net electricity export to grid after deducting import, PP has applied now 0.4% error factor (double) instead of 0.2% in net electricity exported to grid from July 2018 to October 2018 as only substation meter was delayed calibrated during this period. Similarly, PP has now applied 1.0% (double) instead of 0.5% in net electricity supplied to grid for the period December 2012 to maintain conservativeness. Since, observed error in substation meter and 51 WTG meters were found less than the maximum permissible error, thus applying 0.4% and 1.0% error factor (considering double error as only net export available with PP) is conservative and acceptable to DOE. This is in line with the requirement of paragraph 366(a) of VVS 02.0. Thus, acceptable to assessment team. There are delay in calibration of meters observed in meters located at substation and WTG meter . Meters are of accuracy class of 0.5s or of better accuracy as per registered monitoring plan. On-site visit and interview with O&M personnel Assessment team checked the calibration details of the installed meters and found correct.

E.8. Assessment of data and calculation of emission reductions or net removals

E.8.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	The verification team assessed whether the data and calculations of GHG emission reductions achieved resulting from the registered CDM project activity. The verification team has checked whether calculations of baseline GHG emissions have been carried out in accordance with the formulae and methods described in the registered monitoring plan.
Findings	CAR 06 was raised during the verification process and closed successfully. Please refer Appendix 4 of this report for the detail closure of the CAR.
Conclusion	As per the approved methodology ACM0002 – Consolidated baseline methodology for grid-connected electricity generation from renewable sources", Version 12.3.0 baseline emissions for the project activity are the product of electrical energy baseline $EG_{facility,y}$ expressed in MWh of electricity produced by the renewable energy generating unit multiplied by the grid emission factor. $BE_y = EG_{facility,y} \times EF_{grid,CM})$ Where; BEy = Baseline Emissions in tCO_2e $EG_{facility,y}$ = 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 = Net electricity supplied by the project plant to the grid in year y (MWh) $EF_{grid,CM}$ = Combined margin CO_2 emission factor for grid connected power

	generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (tCO_2/MWh) Therefore, BE_y = 553,616.145 MWh x 0.9491 tCO_2/MWh = 525,437 tCO_2(Round down)

E.8.2. Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks

Means of verification	The verification team assessed whether the data and calculations of GHG emission reductions achieved resulting from the registered CDM project activity. The verification team has checked whether calculations of project GHG emissions have been carried out in accordance with the formulae and methods described in the registered monitoring plan.
Findings	There is no CAR/CL raised in this section.
Conclusion	The project emissions are regarded as zero according to the applied methodology and registered PDD

E.8.3. Calculation of leakage GHG emissions

Means of verification	The verification team assessed whether the data and calculations of GHG emission reductions achieved resulting from the registered CDM project activity. The verification team has checked whether calculations of baseline GHG emissions, project GHG emissions and leakage GHG emissions have been carried out in accordance with the formulae and methods described in the registered monitoring plan.
Findings	There is no CAR/CL raised in this section.
Conclusion	The leakage emissions are regarded as zero according to the applied methodology and registered PDD.

E.8.4. Summary calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

Means of verification	The verification team assessed whether the data and calculations of GHG emission reductions achieved resulting from the registered CDM project activity. The verification team has checked whether calculations of baseline GHG emissions, project GHG emissions and leakage GHG emissions have been carried out in accordance with the formulae and methods described in the registered monitoring plan.
Findings	There is no CAR/CL raised in this section.
Conclusion	**Emission Reductions:** AS per applied methodology, Project emissions and Leakage are zero. Thus the total emission reduction achieved during this monitoring period is 525,437 tCO_2 Calculations of baseline GHG emissions, project GHG emissions and leakage GHG emissions have been carried out in accordance with the formulae and methods described in the registered monitoring plan.

E.8.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Means of verification	The verification team has determined the emission reductions achieved during this monitoring period with the estimated value and reason for increase if any.
Findings	There is no CAR/CL raised in this section.
Conclusion	The actual emission reduction achieved by the activity in this monitoring period is 525,437 tCO_2e. The estimated emission reductions in the in the registered PDD for 365 days is 254,527 tCO_2e. The current monitoring period contains 945 days. This, the value is calculated based on pro-rata basis from the estimated value in the registered PDD. The estimated value for the present monitoring period is 658,981 tCO_2e. The emission reduction value in the monitoring period is 20.27% lower as compared to the estimated values for the monitoring period. The calculation is checked by the assessment team in the actual emission reduction sheet and found correct.

E.8.6. Remarks on difference from estimated value in registered PDD

Means of verification	The verification team has determined the emission reductions achieved during this monitoring period with the estimated value and reason for increase if any.
Findings	There is no CAR/CL raised in this section.
Conclusion	The actual Emission Reduction (ER) value achieved in the monitoring period is 20.27% lower than the estimated emission reductions during the current monitoring period. Such variation has been due to lower electricity generation based on low wind availability. Hence accepted by verification team.

E.8.7. Actual GHG emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards

Means of verification	The verification team has determined the CER achieved during first commitment period and second commitment period
Findings	There is no CAR/CL raised in this section.
Conclusion	1.GHG emission reductions or net GHG removals by sinks reported up to 31 December 2012: 0 tCO_2e 2.GHG emission reductions or net GHG removals by sinks reported from 1 January 2013 onwards: 525437 tCO_2e 3.GHG emission reductions or net GHG removals by sinks reported 1 January 2021: 0 tCO_2e

E.9. Assessment of reported sustainable development co-benefits

Means of verification	Not applicable for the present monitoring period
Findings	Not applicable for the present monitoring period
Conclusion	Not applicable for the present monitoring period

E.10. Global stakeholder consultation

Means of verification	Not applicable for the present monitoring period
Findings	Not applicable for the present monitoring period
Conclusion	Not applicable for the present monitoring period

SECTION F. Internal quality control

As a final step for Verification, the final documentation, including the verification report, has to undergo an internal quality control by the Technical Reviewer(s) to be approved.
Details of the Technical Reviewer(s) are provided within the Verification Report in Section B.2. and Appendix 2 for further references of knowledge and capability to conduct the quality checking.
After the Technical Review process, the final documentation may undergo a final quality checking process called Administrative Review, done by the Applus+ Certification's Project Activity Manager and/or Technical Support.
For final approval, the final set of documents are prepared by the DOE's Technical Manager or its deputy and signed by the authorized signatory of the DOE.
In case any of the persons performing this final internal quality control approval process has acted as a part of the Assessment Team or Technical Review team, the approval can only be given by DOE's personnel who are not part of those teams.
If the final set of documents has been satisfactorily approved, the Request for issuance is submitted to the UNFCCC CDM EB along with the relevant documents.

SECTION G. Verification opinion

Applus+ Certification has been engaged by GP Wind (Jangi) Private Limited to perform the 4th periodical verification of the "Jangi 91.8 MW wind farm in Gujarat" (UNFCCC Ref. No. 6702).

The management of "GP Wind (Jangi) 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 revised PDD version 03 dated 11/10/2012 and the applied methodology ACM0002 – Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (Version 12.3.0).

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. 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 approved by the EB;
- the monitoring plan is as per the applied methodology;
- the monitoring in Monitoring Report is as per the PDD and the monitoring plan approved by the EB;
- 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, however, delay in calibration observed which is addressed in line with para 366 (a) of CDM validation and verification standard for project activities, version 02.0;
- 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 "Jangi 91.8 MW wind farm in Gujarat" for the monitoring period 01/06/2018 to 31/12/2020; 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: From 01/06/2018 to 31/12/2020;

Verified emissions in the above reporting period:

Leakage emissions	0 tCO_2 equivalents
Project emissions	0 tCO_2 equivalents

Baseline emissions	525,437 tCO_2 equivalents
Emission reductions	525,437 tCO_2 equivalents

SECTION H. Certification statement

Same as above

Appendix 1. Abbreviations

Abbreviations	Full texts
BM	Build Margin
CAR	Corrective Action Request
CER	Certified Emission Reduction(s)
CEA	Central Electricity Authority
CL	Clarification request
CM	Combined Margin
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EF	Emission Factor
ER	Emission Reductions sheet
FAR	Forward Action Request
JMR	Joint Meter reading
GHG	Greenhouse gas(es)
GWP	Global Warming potential
PP	Project Participant
PPA	Power purchase agreement

Appendix 2. Competence of team members and technical reviewers

1. **Jitendra Mohan Singh** has done Advanced MSc in Sustainable Energy Systems and Management from International Institute of Management, University of Flensburg, Germany and B.Tech. in Agricultural Engineering from Allahabad University, India. He has more than (18) years of working experience in different organizations like IARI, IIT Delhi, ICAR, IRADe, CAPART, SMEC and Perenia Carbon and M B Power (Madhya Pradesh) Ltd. in the area of Agriculture, Energy & Environment and Climate Change. He also worked on contract basis (adhoc) as a RIT expert in UNFCCC from 2010 to 2013. Currently. he is empanelled with Applus+ Certification since 2020 and has been involved Verifications of PAs as Lead Auditor and Technical Expert for Renewable and non-Renewable as well as Energy Demand.

2. **Sukanta Das**, has done M. SC in Electronics and Photonics and M. Tech in Energy technology from Tezpur Central University and Indian Institute of Technology in Bombay respectively. He is a Certified Lead Auditor for ISO 14001 EMS and ISO 9001 QMS (2008 and 2015) from International Registry for Certified Auditors (IRCA) and Certified Lean Management practitioner from Quality Council of India (QCI). He has more than 12 years of working experience at TUV Nord/Re-consult/CRA and Applus+ Certification under various categories of projects and programmes starting from Renewable to waste and supercritical GHG mitigation projects. He also worked in various Carbon foot-printing projects as well. He is empanelled with Applus+ Certification since 2015 and has been involved in more than 300 Validations and Verifications of PAs and PoAs as Lead Auditor, Technical Expert and Technical Reviewer for Renewable and non-Renewable as well as Energy Demand and Waste Management projects and programmes, and has participated in several waste management projects as Team Leader. Moreover, he also has audit experience of Warehouse Physical and Safety audits, Vendor audits among otherst.

3. **Denny Xue** has a Bachelor's Degree on Thermal Energy Engineering and Master´s Degree on Environmental Engineering. He has more than 10 years of experience on CDM project development. Before he joined Applus+ LGAI, he has been worked for Shanghai Chuanji Investment and Management which is a CDM consultancy company as a project manager for CDM project development. He is working with Applus+ since 2011 carrying out Validation and verification for CDM/GS/VCS project under scope 1 and 13 as auditor, lead auditor, technical expert and technical reviewer.

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	NA	Commissioning certificates	Commissioning Certificates of the Wind Power Plant.	Project participant
2.	NA	Contract of the project participant with the DOE	Contract document signed between PP and DOE	Project participant
3.	NA	CDM PS and VVS-version 02.0	CDM validation and verification standard for project activities, Version 02.0 CDM project standard for project activities, Version 02.0	UNFCCC
4.	NA	Certificate for share of electricity generated by wind farm(JMRs)	Joint Meter Reading (JMR) for the complete monitoring period issued by State Utility	Project participant
5.	NA	Invoices	Invoices for the complete monitoring period raised by PP towards State Utility	Project participant
6.	NA	MR version 01 MR version 02 MR Version 03	MR version 01 dated 20/04/2021(Initial) MR version 02 dated:23/07/2021(Final) MR version 03 dated 24/09/2021 9 Revised as per incompleteness response))	Project participant
7.	NA	ER sheet version 01 ER sheet version 02 ER Sheet version 03	ER version 01 dated 20/04/2021 ER version 02 dated: 29/09/2021(Revised as per incompleteness response))	Project participant
8.	NA	Actual geo-coordinates	Actual coordinates for the project activity via GPS meters	Project participant
9.	NA	Plant logbook/Break Down details of plant	Log book records onsite	Project participant
10.	NA	Application of materiality	Guidelines for Application of materiality in verifications version 2.0	UNFCCC
11.	NA	Registered documents of the project activity	Registered CDM PDD version 03 dated 11/10/2012	UNFCCC website
12.	NA	Approved methodology	ACM0002 – Consolidated baseline methodology for grid-connected electricity generation from renewable sources, Version 12.3.0	UNFCCC
13.	NA	Calibration certificates	Calibration certificates of all meter associated with current monitoring period	PP
14.	NA	Meter Changed Report	Meter changes report	PP

Appendix 4. Clarification requests, corrective action requests and forward action requests

Table 1. Remaining FAR from validation and/or previous verifications

FAR ID	xx	**Section no.**	-	**Date:** DD/MM/YYYY
Description of FAR				
NA				
Project participant response				**Date:** DD/MM/YYYY
Documentation provided by project participant				
DOE assessment				**Date:** DD/MM/YYYY

Table 2. CL from this verification

CL ID	xx	**Section no.**		**Date:** DD/MM/YYYY
Description of CL				
NA				
Project participant response				**Date:** DD/MM/YYYY
Documentation provided by project participant				
DOE assessment				**Date:** DD/MM/YYYY

Table 3. CAR from this verification

CAR ID	01	**Section no.**	E 1	**Date:** 21/06/2021
Description of CAR				
Monitoring report number for this monitoring period is mentioned as 1. However, only one MR was web hosted within monitoring period. Corrective action is sought.				
Project participant response				**Date:** 23/07/2021
Correction has been made on Monitoring Report number				
Documentation provided by project participant				
Updated Monitoring Report				
DOE assessment				**Date: 26/07/2021**
PP has made correction in revised MR. **CAR is closed**.				

CAR ID	02	**Section no.**	E 3	**Date:** 21/06/2021
Description of CAR				
During desk review, assessment team found that PP has not submitted the supporting evidence of following documents: *1. Power Purchase Agreement* *2. Commissioning Certificates of WTGs* *3. O&M Agreement* *PP requested to submit the above supporting documents to DOE for verification.*				
Project participant response				**Date:** 23/07/2021
Power Purchase Agreement, Commissioning Certificate of WTGs and O&M Agreement has been provided to DOE.				
Documentation provided by project participant				
Power Purchase Agreement, Commissioning Certificate and O&M Agreement.				

DOE assessment	Date: 26/07/2021

1. PP has now submitted Power Purchase Agreement signed with the Gujarat Urja Vikas Nigam Limited (GUVNL) on 26/08/2011.
2. PP has also submitted the commissioning certificate of the PA. Assessment Team checked the same and confirms that the 1st WTG was put into operation on 31/08/2011 and the project has been fully operational from 23/12/2011.
3. O & M agreement is now submitted to assessment team**.** O & M agreement is signed with Vetsas Wind Technology India Private Limited and Vesta is responsible for entire operation including metering of the project activity on behalf of PP.

CAR is closed

CAR ID	03	Section no.	E 3	Date: 21/06/2021
Description of CAR				
Breakdowns details are not mentioned in MR. Further, PP is requested to submit the breakdown/Plant log book to assessment team for verification.				
Project participant response				**Date:** 23/07/2021
Breakdown details has been provided in updated MR. Also the breakdown details has been submitted to assessment team.				
Documentation provided by project participant				
Updated Monitoring Report, Breakdown Details				
DOE assessment				**Date:** 26/07/2021
Break Down/Plant log book is now submitted by PP to assessment team and also included break down in in Annexure II of revised monitoring report. Verification team confirms that No major breakdown was found. Scheduled & preventive maintenance were carried out as per manufacturer specification for the power plant. No unforeseen activity observed during the present verification that can alter the applicability or additionality of the applied methodology. **CAR closed.**				

CAR ID	04	Section no.	E 6.2	Date: 21/06/2021
Description of CAR				
During onsite visit PP has not provided the monthly JMRs in support of electricity export, Import and invoices for cross check pertaining to current monitoring period. PP requested to submit the copies of JMRs and invoices to DOE for verification.				
Project participant response				**Date:** 23/07/2021
Monthly JMR and invoices have been submitted to assessment team.				
Documentation provided by project participant				
Monthly JMR and invoices.				
DOE assessment				**Date:** 21/07/2021
PP has submitted the Certificate for Share of Electricity generated by wind farm (JMRs) which contains only net electricity supplied to grid and Invoice for complete months to the assessment team. Assessment team checked electricity net export data in provided in ER sheet with the JMRs and found correct. The same is also cross checked with Invoices and found consistent. Meters were identified calibration delay and thus PP has applied maximum permissible in electricity exported to grid and imported from grid. (Please Refer ER sheet). **CAR is thus closed**.				

CAR ID	05	Section no.	E.7	Date: 21/06/2021
Description of CAR				
Information of monitoring equipments such as serial number, make, accuracy class, calibration date and validity of calibration are not mentioned in monitoring report. Further, calibration certificate of meters is not submitted to DOE for verification. Corrective action is sought.				
Project participant response				**Date:** 23/07/2021
Meter details and meter calibration details have been provided in MR. Also the calibration certificates have been submitted to DOE.				
Documentation provided by project participant				
Calibration Certificates, Updated MR.				
DOE assessment				**Date:** 26/07/2021

PP has now included the details of monitoring equipment's (Meters) in Annexure 1 of revised monitoring report. Meters are installed with each WTG and at substation. Meters located at both places i.e. substation and WTG were identified as calibration delay. Substation main meters were not covered under calibration from the months July 2018 to October 2018 and WTG meters were not covered udder calibration in the month December 2020. The results of delayed calibration are within permissible limit of accuracy class. Hence, PP has applied maximum permissible error factor 0.4% instead of 0.2% for the complete month of July 2018 to October 2018 and 1.0% instead of 0.5% in December 2020 in electricity exported r (considering double error as only net export available with PP) is conservative and acceptable to DOE . This is in line with the requirement of paragraph 366(a) of VVS 02.0. Thus, acceptable to assessment team.
CAR closed.

CAR ID	06	**Section no.**	E.8	**Date :** 21/06/2021
Description of CAR				
• PP requested to submit the spreadsheets containing emission reductions calculation for verification of *emission reductions claimed during the current monitoring period in monitoring report.* • *ER sheet is not submitted to the DOE and hence the Emission Reductions value is thus reserved. Moreover, cross check mechanism cannot be confirmed as the Emission reduction sheet is not submitted.* • *Estimated emission reduction calculation for the current monitoring period cannot be confirmed as the ER sheet is not provided.*				
Project participant response				**Date :** 23/07/2021
ER Sheet has been provided to DOE for verification of emission reductions claimed during the current monitoring period. Also estimated emission reduction calculation has been provided in ER Sheet.				
Documentation provided by project participant				
ER Sheet.				
DOE assessment				**Date:** 26/07/2021
• ER sheet has been submitted to the assessment team. Calculation of achieved Emission reduction found in line with the registered PDD and also conservative. • Assessment team has cross checked the monthly electricity generation records mentioned in the ER sheet with the invoices. Team found no discrepancies. • Estimated Emission reduction for the current monitoring period has been correctly calculated in ER sheet and same has been mentioned in Revised MR**.** **CAR is closed.**				

Table 4. FAR from this verification

FAR ID	xx	**Section no.**		**Date:** DD/MM/YYYY
Description of FAR				
NA				
Project participant response				**Date:** DD/MM/YYYY
Documentation provided by project participant				
DOE assessment				**Date:** DD/MM/YYYY

Appendix 5. Calibration details of Meters

Substation Meter details:

Meter No.	Make	Accuracy Class	Date of Calibration	Validity of Calibration	Remark
GJ-2311-A (Main Meter)	L&T	0.2	14/07/2015	13/07/2018	July 2018 to October 2018
			15/10/2018	14/10/2021	
GJ-2363-A (Main Meter)	L&T	0.2	13/07/2015	12/07/2018	
			15/10/2018	14/10/2021	
GJB01664 (Check Meter)	Secure	0.2	02/02/2019	01/02/2022	-
GJB01665 (Check Meter)	Secure	0.2	02/02/2019	01/02/2022	-

WTG main meter details:

WTG ID	Meter No.	Make	Accuracy	Calibration Date	Validity of Calibration	Calibration Date	Validity of Calibration	Delay in Calibration[10]
JW03	GJU61840	Secure	0.5	08/12/2017	07/12/2020	17/02/2021	16/02/2024	07/12/2020 to 17/02/2021
JW06	GJU61843	Secure	0.5	08/12/2017	07/12/2020	17/02/2021	16/02/2024	07/12/2020 to 17/02/2021
JW07	GJU61842	Secure	0.5	08/12/2017	07/12/2020	17/02/2021	16/02/2024	07/12/2020 to 17/02/2021
JW17	GJU63766	Secure	0.5	18/12/2017	17/12/2020	16/02/2021	15/02/2024	17/12/2020 to 16/02/2021
JW18	GJU64195	Secure	0.5	18/12/2017	17/12/2020	16/02/2021	15/02/2024	17/12/2020 to 16/02/2021
JW19	GJU63770	Secure	0.5	18/12/2017	17/12/2020	16/02/2021	15/02/2024	17/12/2020 to 16/02/2021
JW20	GJU63769	Secure	0.5	18/12/2017	17/12/2020	16/02/2021	15/02/2024	17/12/2020 to 16/02/2021
JW21	GJU63767	Secure	0.5	18/12/2017	17/12/2020	16/02/2021	15/02/2024	17/12/2020 to 16/02/2021
JW22	GJU63768	Secure	0.5	18/12/2017	17/12/2020	16/02/2021	15/02/2024	17/12/2020 to 16/02/2021
JW24	GJU62539	Secure	0.5	07/12/2017	06/12/2020	15/02/2021	14/02/2024	06/12/2020 to 15/02/2021
JW26	GJU61849	Secure	0.5	20/12/2017	19/12/2020	10/02/2021	09/02/2024	19/12/2020 to 10/02/2021
JW28	GJU61839	Secure	0.5	08/12/2017	07/12/2020	10/02/2021	09/02/2024	07/12/2020 to 10/02/2021
JW31	GJU61850	Secure	0.5	17/12/2017	16/12/2020	15/02/2021	14/02/2024	16/12/2020 to 15/02/2021
JW32	GJU64199	Secure	0.5	18/12/2017	17/12/2020	16/02/2021	15/02/2024	17/12/2020 to 16/02/2021
JW33	GJU62545	Secure	0.5	07/12/2017	06/12/2020	17/02/2021	16/02/2024	06/12/2020 to 17/02/2021
JW34	GJU62537	Secure	0.5	07/12/2017	06/12/2020	15/02/2021	14/02/2024	06/12/2020 to 15/02/2021
JW35	GJU61828	Secure	0.5	07/12/2017	06/12/2020	17/02/2021	16/02/2024	06/12/2020 to

[10] There is delay in WTG main meter calibration in December 2020. Error factor 0.5% has been applied while calculating baseline emission for December 2020.

								17/02/2021
JW36	GJU62536	Secure	0.5	07/12/2017	06/12/2020	15/02/2021	14/02/2024	06/12/2020 to 15/02/2021
JW37	GJU64192	Secure	0.5	20/12/2017	19/12/2020	17/02/2021	16/02/2024	19/12/2020 to 17/02/2021
JW39	GJU64194	Secure	0.5	09/12/2017	08/12/2020	13/02/2021	12/02/2024	08/12/2020 to 13/02/2021
JW40	GJU62538	Secure	0.5	09/12/2017	08/12/2020	13/02/2021	12/02/2024	08/12/2020 to 13/02/2021
JW41	GJU61846	Secure	0.5	09/12/2017	08/12/2020	13/02/2021	12/02/2024	08/12/2020 to 13/02/2021
JW42	GJU64197	Secure	0.5	17/12/2017	16/12/2020	12/02/2021	11/02/2024	16/12/2020 to 12/02/2021
	GJU56316[11]	Secure	0.5	20/12/2017	19/12/2020			
JW43	X1336501	Secure	0.5			15/02/2021	14/02/2024	No Delay
JW44	GJU62544	Secure	0.5	17/12/2017	16/12/2020	15/02/2021	14/02/2024	16/12/2020 to 15/02/2021
JW45	GJU62532	Secure	0.5	17/12/2017	16/12/2020	15/02/2021	14/02/2024	16/12/2020 to 15/02/2021
JW46	GJU62534	Secure	0.5	09/12/2017	08/12/2020	13/02/2021	12/02/2024	08/12/2020 to 13/02/2021
JW47	GJU62521	Secure	0.5	09/12/2017	08/12/2020	13/02/2021	12/02/2024	08/12/2020 to 13/02/2021
JW48	GJU64188	Secure	0.5	17/12/2017	16/12/2020	12/02/2021	11/02/2024	16/12/2020 to 12/02/2021
JW49	GJU62531	Secure	0.5	09/12/2017	08/12/2020	13/02/2021	12/02/2024	08/12/2020 to 13/02/2021
JW50	GJU64204	Secure	0.5	17/12/2017	16/12/2020	12/02/2021	11/02/2024	16/12/2020 to 12/02/2021
JW51	GJU64201	Secure	0.5	20/12/2017	19/12/2020	17/02/2021	16/02/2024	19/12/2020 to 17/02/2021
JW52	GJU64168	Secure	0.5	20/12/2017	19/12/2020	12/02/2021	11/02/2024	19/12/2020 to 12/02/2021
JW53	GJU62541	Secure	0.5	20/12/2017	19/12/2020	12/02/2021	11/02/2024	19/12/2020 to 12/02/2021
JW54	GJU64203	Secure	0.5	20/12/2017	19/12/2020	12/02/2021	11/02/2024	19/12/2020 to 12/02/2021
JW55	GJU65682	Secure	0.5	20/12/2017	19/12/2020	12/02/2021	11/02/2024	19/12/2020 to 12/02/2021
JW56	GJU73307	Secure	0.5	17/12/2017	16/12/2020	11/02/2021	10/02/2024	16/12/2020 to 11/02/2021
JW57	GJU64205	Secure	0.5	11/12/2017	10/12/2020	11/02/2021	10/02/2024	10/12/2020 to 11/02/2021
JW58	GJU64170	Secure	0.5	11/12/2017	10/12/2020	11/02/2021	10/02/2024	10/12/2020 to 11/02/2021
JW59	GJU64171	Secure	0.5	11/12/2017	10/12/2020	11/02/2021	10/02/2024	10/12/2020 to 11/02/2021
JW60	GJU64207	Secure	0.5	11/12/2017	10/12/2020	11/02/2021	10/02/2024	10/12/2020 to 11/02/2021
JW61	GJU64173	Secure	0.5	11/12/2017	10/12/2020	11/02/2021	10/02/2024	10/12/2020 to 11/02/2021
JW62	GJU64151	Secure	0.5	17/12/2017	16/12/2020	11/02/2021	10/02/2024	16/12/2020 to 11/02/2021
JW63	GJU62535	Secure	0.5	09/12/2017	08/12/2020	13/02/2021	12/02/2024	08/12/2020 to 13/02/2021
JW64	**GJU64190**[12]	Secure	0.5	09/12/2017	08/12/2020			-

[11] Meter No. GJU56316 was replaced by Meter No. X1336501 on 17/10/2020
[12] Meter No. GJU64190 was replaced by Meter No. XD448010 on 19/03/2019.

	XD448010[13]	Secure	0.5					-
	X1336502	Secure	0.5					-
VW08	GJU61851	Secure	0.5	21/12/2017	20/12/2020	18/02/2021	17/02/2024	20/12/2020 to 18/02/2021
VW44	GJU61833	Secure	0.5	21/12/2017	20/12/2020	18/02/2021	17/02/2024	20/12/2020 to 18/02/2021
VW57	GJU61841	Secure	0.5	21/12/2017	20/12/2020	18/02/2021	17/02/2024	20/12/2020 to 18/02/2021
	GJU64169[14]	Secure	0.5	21/12/2017	20/12/2020			
VW59	X0272016	Secure	0.5			18/02/2021	17/02/2024	No Delay
VW61	GJU61853	Secure	0.5	08/12/2017	07/12/2020	10/02/2021	09/02/2024	07/12/2020 to 10/02/2021
VW70	GJU64167	Secure	0.5	21/12/2017	20/12/2020	18/02/2021	17/02/2024	20/12/2020 to 18/02/2021

WTG Check meter details:

WTG ID	Meter No.	Accuracy	Make	Calibration Date	Validity of Calibration	Calibration Date	Validity of Calibration	Delay in Calibration
JW03	GJB56485	0.2	Secure	08/12/2017	07/12/2020	17/02/2021	16/02/2024	07/12/2020 to 17/02/2021
JW06	GJB56514	0.2	Secure	08/12/2017	07/12/2020	17/02/2021	16/02/2024	07/12/2020 to 17/02/2021
JW07	GJB56504	0.2	Secure	08/12/2017	07/12/2020	17/02/2021	16/02/2024	07/12/2020 to 17/02/2021
JW17	GJB56521	0.2	Secure	18/12/2017	17/12/2020	16/02/2021	15/02/2024	17/12/2020 to 16/02/2021
JW18	GJU64177	0.2	Secure	18/12/2017	17/12/2020	16/02/2021	15/02/2024	17/12/2020 to 16/02/2021
JW19	GJB56478	0.2	Secure	18/12/2017	17/12/2020	16/02/2021	15/02/2024	17/12/2020 to 16/02/2021
JW20	GJB56491	0.2	Secure	18/12/2017	17/12/2020	16/02/2021	15/02/2024	17/12/2020 to 16/02/2021
JW21	GJB56522	0.2	Secure	18/12/2017	17/12/2020	16/02/2021	15/02/2024	17/12/2020 to 16/02/2021
JW22	GJB56483	0.2	Secure	18/12/2017	17/12/2020	16/02/2021	15/02/2024	17/12/2020 to 16/02/2021
JW24	GJB56486	0.2	Secure	07/12/2017	06/12/2020	15/02/2021	14/02/2024	06/12/2020 to 15/02/2021
JW26	GJB56506	0.2	Secure	20/12/2017	19/12/2020	10/02/2021	09/02/2024	19/12/2020 to 10/02/2021
JW28	GJB56484	0.2	Secure	08/12/2017	07/12/2020	10/02/2021	09/02/2024	07/12/2020 to 10/02/2021
JW31	GJB56507	0.2	Secure	17/12/2017	16/12/2020	15/02/2021	14/02/2024	16/12/2020 to 15/02/2021

[13] Meter No. XD448010 was replaced by Meter No. X1336502 on 17/10/2020.
[14] Meter No. GJU64169 was replaced by Meter No. X0272016 on 15/11/2018.

JW32	GJU64182	0.2	Secure	18/12/2017	17/12/2020	16/02/2021	15/02/2024	17/12/2020 to 16/02/2021
JW33	GJB56510	0.2	Secure	07/12/2017	06/12/2020	17/02/2021	16/02/2024	06/12/2020 to 17/02/2021
	GJB56499[15]	0.2	Secure	07/12/2017	06/12/2020			
JW34	GJU76545	0.2	Secure			15/02/2021	14/02/2024	No Delay
JW35	GJB56501	0.2	Secure	07/12/2017	06/12/2020	17/02/2021	16/02/2024	06/12/2020 to 17/02/2021
JW36	GJB56511	0.2	Secure	07/12/2017	06/12/2020	15/02/2021	14/02/2024	06/12/2020 to 15/02/2021
JW37	GJB56476	0.2	Secure	20/12/2017	19/12/2020	17/02/2021	16/02/2024	19/12/2020 to 17/02/2021
JW39	GJB56488	0.2	Secure	09/12/2017	08/12/2020	13/02/2021	12/02/2024	08/12/2020 to 13/02/2021
JW40	GJB56512	0.2	Secure	09/12/2017	08/12/2020	13/02/2021	12/02/2024	08/12/2020 to 13/02/2021
	GJB56489[16]	0.2	Secure	09/12/2017	08/12/2020			
JW41	GJU76544	0.2	Secure			13/02/2021	12/02/2024	No Delay
JW42	GJU73308	0.2	Secure	17/12/2017	16/12/2020	12/02/2021	11/02/2024	16/12/2020 to 12/02/2021
	GJB56503[17]	0.2	Secure	20/12/2017	19/12/2020			
JW43	GJU76543	0.2	Secure			15/02/2021	14/02/2024	No Delay
JW44	GJU64143	0.2	Secure	17/12/2017	16/12/2020	15/02/2021	14/02/2024	16/12/2020 to 15/02/2021
JW45	RJB78165	0.2	Secure	17/12/2017	16/12/2020	15/02/2021	14/02/2024	16/12/2020 to 15/02/2021
JW46	GJB56490	0.2	Secure	09/12/2017	08/12/2020	13/02/2021	12/02/2024	08/12/2020 to 13/02/2021
JW47	GJB56502	0.2	Secure	09/12/2017	08/12/2020	13/02/2021	12/02/2024	08/12/2020 to 13/02/2021
JW48	GJU64144	0.2	Secure	17/12/2017	16/12/2020	12/02/2021	11/02/2024	16/12/2020 to 12/02/2021
JW49	GJB56482	0.2	Secure	09/12/2017	08/12/2020	13/02/2021	12/02/2024	08/12/2020 to 13/02/2021
JW50	GJU64140	0.2	Secure	17/12/2017	16/12/2020	12/02/2021	11/02/2024	16/12/2020 to 12/02/2021
JW51	GJU64181	0.2	Secure	20/12/2017	19/12/2020	17/02/2021	16/02/2024	19/12/2020 to 17/02/2021
JW52	GJU64186	0.2	Secure	20/12/2017	19/12/2020	12/02/2021	11/02/2024	19/12/2020 to 12/02/2021

[15] Meter No. GJB56499 was replaced by Meter No. GJU76545 on 24/03/2020.
[16] Meter No. GJB56489 was replaced by Meter No. GJU76544 on 06/03/2020.
[17] Meter No. GJB56503 was replaced by Meter No. GJU76543 on 06/03/2020

JW53	GJU64178	0.2	Secure	20/12/2017	19/12/2020	12/02/2021	11/02/2024	19/12/2020 to 12/02/2021
JW54	GJU64176	0.2	Secure	20/12/2017	19/12/2020	12/02/2021	11/02/2024	19/12/2020 to 12/02/2021
JW55	GJB56517	0.2	Secure	20/12/2017	19/12/2020	12/02/2021	11/02/2024	19/12/2020 to 12/02/2021
JW56	GJU64175	0.2	Secure	17/12/2017	16/12/2020	11/02/2021	10/02/2024	16/12/2020 to 11/02/2021
JW57	GJU64141	0.2	Secure	11/12/2017	10/12/2020	11/02/2021	10/02/2024	10/12/2020 to 11/02/2021
JW58	GJU64179	0.2	Secure	11/12/2017	10/12/2020	11/02/2021	10/02/2024	10/12/2020 to 11/02/2021
JW59	GJU64184	0.2	Secure	11/12/2017	10/12/2020	11/02/2021	10/02/2024	10/12/2020 to 11/02/2021
JW60	GJU64183	0.2	Secure	11/12/2017	10/12/2020	11/02/2021	10/02/2024	10/12/2020 to 11/02/2021
JW61	GJU64180	0.2	Secure	11/12/2017	10/12/2020	11/02/2021	10/02/2024	10/12/2020 to 11/02/2021
JW62	GJU73309	0.2	Secure	17/12/2017	16/12/2020	11/02/2021	10/02/2024	16/12/2020 to 11/02/2021
JW63	GJB56480	0.2	Secure	09/12/2017	08/12/2020	13/02/2021	12/02/2024	08/12/2020 to 13/02/2021
	GJB56479[18]	0.2	Secure	09/12/2017	08/12/2020			
	GJU76546[19]	0.5	Secure					
JW64	GJU76547	0.5	Secure					No Delay
VW08	GJB56508	0.2	Secure	21/12/2017	20/12/2020	18/02/2021	17/02/2024	20/12/2020 to 18/02/2021
VW44	GJB56516	0.2	Secure	21/12/2017	20/12/2020	18/02/2021	17/02/2024	20/12/2020 to 18/02/2021
	GJB56515[20]	0.2	Secure	21/12/2017	20/12/2020			
VW57	XD448013	0.5	Secure			18/02/2021	17/02/2024	No Delay
	GJU64142[21]	0.2	Secure	21/12/2017	20/12/2020			
VW59	XD448015	0.5	Secure			18/02/2021	17/02/2024	No Delay
VW61	GJB56505	0.2	Secure	08/12/2017	07/12/2020	10/02/2021	09/02/2024	07/12/2020 to 10/02/2021
VW70	GJU64185	0.2	Secure	21/12/2017	20/12/2020	18/02/2021	17/02/2024	20/12/2020 to 18/02/2021

[18] Meter No. GJB56479 was replaced by Meter No. GJU76546 on 11/10/2018.
[19] Meter No. GJU76546 was replaced by Meter No. GJU76547 on 17/10/2020.

[20] Meter No. GJB56515 was replaced by Meter No. XD448013 on 06/03/2020.
[21] Meter No. GJU64142 was replaced by Meter No. XD448015 on 06/03/2020.

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Document information

Version	*Date*	*Description*
04.0	6 April 2021	Revision to: • Reflect the "Clarification: Regulatory requirements under temporary measures for post-2020 cases" (CDM-EB109-A01-CLAR).
03.0	31 May 2019	Revision to: • Ensure consistency with version 02.0 of the "CDM validation and verification standard for project activities" (CDM-EB93-A05-STAN); • Make structural and editorial improvements.
02.1	11 January 2018	Editorial revision to correct the numbering of appendices in the instructions.
02.0	31 October 2017	Revision to align with the requirements of the "CDM validation and verification standard for project activities" (version 01.0).
01.0	23 March 2015	Initial publication.

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