



Verification and certification report form for GS project activities

(Version 01.0)

VERIFICATION AND CERTIFICATION REPORT

Title of the project activity	Vaayu India Wind Power Project in Andhra Pradesh
Reference number of the project activity	GS 4603 (CDM 4677)
Version number of the verification and certification report	03
Completion date of the verification and certification report	06/09/2017
Monitoring period number and duration of this monitoring period	25/09/2014 to 02/09/2016 (Both days inclusive)
Version number of monitoring report to which this report applies	1.3
Crediting period of the project activity corresponding to this monitoring period	25/09/2014 to 24/04/2021
Project participant(s)	Vaayu (India) Power Corporation Private Limited
Host Party	India
Sectoral scope(s), selected methodology(ies), and where applicable, selected standardized baseline(s)	Sectoral Scope 1 - Energy industries (renewable/ non-renewable sources) ACM0002, Version 11
Estimated GHG emission reductions or net anthropogenic GHG removals for this monitoring period in the registered PDD	180,593 tCO ₂ e
Certified GHG emission reductions or net anthropogenic GHG removals for this monitoring period	157,704 tCO ₂ e
Name of DOE	Earthood Services Private Limited
Name, position and signature of the approver of the verification and certification report	 Dr. Kaviraj Singh Managing Director

SECTION A. Executive summary

The project activity involves electricity generation by wind electric convertors and supplying the generated electricity to the Southern grid. The project being a renewable energy generation activity, leads to reduction in fossil fuel dominated electricity generation. The project activity results in reductions of greenhouse gas (GHG) emissions that are real, measurable, and verifiable and also plays beneficial role in the mitigation of climate change.

The project activity consists of 63 WTGs (0.8 MW capacity each), making the total installed capacity to be 50.4 MW in the district of Kurnool and Anaparthi in Andhra Pradesh, India. The WTGs are of Wind World (E-53) make. The WTGs have been commissioned between 02/08/2010 and 04/05/2011. The same was verified against the commissioning certificates provided during CDM verification/18/.

All 63 WTGs are fully functional and the assessment team verified this during the site visit. The assessment team confirms that the total emission reductions achieved under this monitoring period from 25/09/2014 to 02/09/2016(including both days) are 157,704 tCO₂e.

This verification is an independent and objective review for the additional Gold Standard (GS) requirement, for the monitoring period (25/09/2014- 02/09/2016) for the project activity "Vaayu India Wind Power Project in Andhra Pradesh" (GS-4603 & UN 4677), This verification report doesn't include the verification of the GHG parameters but only review the additional requirements for GS labelling the already issued CER.

The verification report addresses the implementation and operation of the GS PA and tests the data and assertions set out in the monitoring report based on the following:

- (i) The registered GS/CDM PDD and Passport
- (ii) The approved methodology mention in the PDD and passport
- (iii) UNFCCC criteria referred to in the Kyoto Protocol criteria and the CDM modalities and procedures as agreed in the Bonn Agreement and the Marrakech Accords
- (iv) The latest Gold Standard (GS) tool kit
- (v) CDM Validation and Verification Standard (VVS)
- (vi) CDM Project Standard (PS) and Project Cycle Procedure (PCP)
- (vii) Relevant decisions, guidance and clarifications of the CMP and CDM Executive Board and any other information and references relevant to the project activity's reported emission reductions

The verification has considered both quantitative and qualitative aspects on stated/reported emission reductions. The monitoring report (all versions) and corresponding supporting documentation was assessed in accordance with the rules defined by UNFCCC, as appropriate to the PA. The verification is not meant to provide any consulting or recommendations to the PP/others. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the monitoring activities.

The verification process is conducted as per internal CDM Quality Manual, which includes the following steps;

- a) Contract with PP and appointment of verification team and technical review team (refer Section B.1 and B.2 of this report)
- b) Completeness check of Monitoring Report
- c) Desk review (refer Section C.1 of this report) of Monitoring Report and corresponding ER sheet by verification team and planning of onsite audit (including sampling approach (refer Section C.4 of this report) to be applied)
- d) On site audit (refer Section C.2 of this report) (physical implementation and interview with relevant stakeholders) by verification team
- e) Follow up activities e.g., interviews
- f) Reporting and closure of findings (CARs/CLs/FARs) and preparation of draft verification report (refer Section C.5 of this report)
- g) Independent technical review (refer Section D of this report) of the draft verification report and final/revised documentation (e.g., Monitoring Report, corresponding ER sheet and evidences)
- h) Reporting and closure of TR comments/findings (refer Section C.5 of this report) (CARs/CLs/FARs) and final approval for the decision made (refer Section E and F of this report).
- i) Issuance of final verification report to contracted PP (or authorized representatives) and submission of request for issuance, as appropriate.

CDM-VCR-FORM

Based on the outcome of the verification process of the registered PA “Vaayu India Wind Power Project in Andhra Pradesh” for the monitoring period 25/09/2014 to 02/09/2016, we confirm that the implementation of referenced registered PA is complying with applicable GS and CDM rules and regulations as stated in the Monitoring Report (final) Version 1.3 dated 05/09/2017. Earthood Services Private Limited is able to certify that the emission reductions from the registered GS PA (4603) “Vaayu India Wind Power Project in Andhra Pradesh” in ‘India’ during the period 25/09/2014 to 02/09/2016 (including both days) amount to 157, 704 tCO₂e. Therefore, this is being submitted for request for issuance, as per GS and UNFCCC procedures as applicable.

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 review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader and Local Expert	ER	Soni	Ravi Kant	Central office	Y	Y	Y	Y
2.	Verifier	ER	Soni	Ravi Kant	Central office	Y	Y	Y	Y
3	Meth Expert and Technical Expert	ER	Soni	Ravi Kant	Central office	Y	Y	Y	Y
4	Trainee	-	Not applicable	-	-	-	-	-	-

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 and expert to TR	IR	Garg	Shreya	Central office
2.	Approver	IR	Singh	Kaviraj	Central office

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.	Not applicable because no GHG parameters are required to be verified	NA	NA	NA

C.2. Consideration of materiality in conducting the verification

>> not applicable

SECTION D. Means of verification**D.1. Desk review**

The verification is performed primarily as a desk review of the documents submitted at various stages of assessments. The review is performed by assessment team using dedicated protocols (checklists). The assessment team cross checks the information provided in the documents (MR) and information from sources other than those used, if available, and also conducts independent background investigations. Earthood conducted a desk review as under;

- a) A review of the data and information presented to verify their completeness
- b) A review of the monitoring plan (as described in PDD and passport), the monitoring methodology including applicable tool(s) and, where applicable, the applied standardized baseline, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures
- c) A review of calculations and assumptions made in determining the GHG data and emission reductions;
- d) An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions

The list of documents reviewed during the verification is provided under appendix 3 of this report.

D.2. On-site inspection

Duration of on-site inspection: 07/02/2017				
No.	Activity performed on-site	Site location	Date	Team member
1.	An assessment of the implementation of sustainability monitoring plan and operation of the registered project activity as per the registered passport; A review of information flows for generating, aggregating and reporting the monitoring parameters; Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the Passport; A cross check between information provided in the monitoring report and data from other sources such as plant logbooks, inventories, purchase records or similar data sources; An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters. Interview and feedback of the relevant stakeholders about the PA.	Kurnool and Anantapur	07/02/2017	Ravi Kant Soni
2	An assessment of the implementation of sustainability monitoring plan and operation of the registered project activity as per the registered passport; A review of information flows for generating, aggregating and reporting the monitoring parameters; Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the Passport; A cross check between information provided in the monitoring report and data from other sources such as plant logbooks, inventories, purchase records or similar data sources; An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters. Interview and feedback of the relevant stakeholders about the PA.			

D.3. Interviews with project participants

No.	Interviewee			Date	Subject
	Last name	First name	Affiliation		
1.	Kumar	Navneet	Vaayu (India) Power Corporation Private Limited (VIPCPL)	07/02/2017	Monitoring of sustainable development parameters
2.	Ahmed	Ersath	VIPCPL	07/02/2017	Monitoring of sustainable development parameters
3.	Rao	Eswara	WWIL	07/02/2017	Monitoring of sustainable development parameters

D.4. Interviews with local stakeholders

Earthood as a part of validation procedure conducted a comprehensive interaction with stakeholders. It was done during the site visit on 07/02/2017. It included interaction with the local villagers and representatives of PP. Earthood team have interviewed the local stakeholders and they were questioned for various topics as summarized below;

- Effect of project on their livelihood and income
- Any problem related to wind turbine installation in nearby areas
- Does the noise generated by wind turbines disturbs any of their activity or comfort
- Are they happy with the benefits and development as CSR activity of the PP
- General feedback about wind farms
- Do they know about the grievance and feedback back register/mechanism?
- Any concerns or feedback; Positive (P) and Negative (N)

No.	Name of Stakeholder	Address	Feedback (Positive/Negative/Concerns)
1.	P.Sivaram	Local villager	Positive
2.	G.N Prakash	Local villager	Positive
3.	S.Balamuni	Local villager	Positive
4.	G. Pawan Kumar	Local villager	Positive
5.	Saddam Basha	Local villager	Positive
6.	M.Sunkanna	Local villager	Positive
7.	C.Sreenivasulu	Local villager	Positive

D.5. Sampling approach

>>Not applicable as complete set of data is verified.

D.6. Clarification requests, corrective action requests and forward action requests raised

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Compliance of the monitoring report with the monitoring report form	-	-	-
Compliance of the project implementation with the registered PDD	-	-	-
Post-registration changes	-	-	-
Compliance of the monitoring plan with the monitoring methodology including applicable tool and standardized baseline	-	-	-
Compliance of monitoring activities with the registered monitoring plan	-	-	-
Compliance of the sustainable monitoring plan		CAR #4,CAR #5 and CAR	

		#6	
Compliance with the calibration frequency requirements for measuring instruments	-	CAR #2	-
Assessment of data and calculation of emission reductions or net removals		CAR #3	-
Others (please specify)	CL #1, (Inconsistent monitoring period dates)	-	-
Total	1	5	-

SECTION E. Verification findings

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

Means of verification	There is no specific template available for GS monitoring report. Hence CDM-MR-FORM version 05.1 is used which was the appropriate form and the latest version available at the time of verification. All the sections of the form were filled as per the guidelines and gave all the relevant details.
Findings	No finding was raised
Conclusion	The monitoring report is found to be complying with the monitoring report form

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

>>This is first verification. No FAR request from validation

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

Means of verification	The project activity replaces the energy which is being generated mainly by fossil fuel based power generation plants connected to grid and therefore contributes to sustainable development. The project activity consists of 63 WTGs of E-53 Wind World make with individual capacity of 800 kW and aggregates to 50.4 MW in total. All turbines of project activity got commissioned between 02/08/2010 and 04/05/2011 /18/. The WEGs have been in operation during the current monitoring period in compliance with the description provided in the GS Passport. The project implementation, with reference to GS passport, was checked on site to confirm the following: • The monitoring system including the measurement of parameters, data collection and archiving was also implemented and operated inline to the GS passport/1/,/3/. • The emission reduction was achieved in compliance with applied methodology, GS passport. • The project contributes to the sustainable development which includes, but not limited to, enhancement of local economy, creating employment and many other benefits to the rural population.
Findings	No issues identified and hence finding was not raised for this section
Conclusion	• In view of the information's verified during the site visit, the verification team is able to confirm that all physical features (technology, project equipment, and monitoring and metering equipment) of the registered GS project activity are in place and that the project participants have operated the project activity as per the GS Passport. • No information with regard to data and variables was identified that may surpass the estimated quantity of ERs in the GS Passport. • The emission reductions achieved during the current monitoring period are 157,704 tCO₂e within the estimated quantity (180,593 tCO₂e) in the GS Passport for the comparable period.

E.4. Post-registration changes**E.4.1. Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline**

>>There are no temporary deviations from registered monitoring plan or applied methodology. It was verified and confirmed from the GS Passport; the applied methodology and the on-site verification.

E.4.2. Corrections

>> Not applicable

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

>>Not applicable

E.4.4. Inclusion of a monitoring plan to a registered project activity

>>Not applicable

E.4.5. Permanent changes from registered monitoring plan, monitoring methodology or standardized baseline

>> Not applicable

E.4.6. Changes to the project design of a registered project activity

>>No changes to the project design identified during the verification

E.4.7. Types of changes specific to afforestation and reforestation project activities

>> Not applicable

E.5. Compliance of monitoring activities with the registered monitoring plan

Means of verification	Compliance of the monitoring activities related to parameters used in the emission reduction calculations were already verified during the site visit. The monitoring plan outlined in the revised approved PDD is in accordance with the applied methodology and correctly applied by the registered CDM project activity. During the site visit the verification team has verified the sustainability monitoring plan and found to be in compliance with the registered passport.
Findings	No issues identified in section hence finding was not raised.
Conclusion	The monitoring plan outlined in the GS Passport is in accordance with the applied methodology /08/ and correctly applied by the project activity.

E.5.1. Data and parameters fixed ex ante or at renewal of crediting period

Means of verification	Data and parameters fixed ex-ante are already verified during the CDM verification /18/, hence no further verification is required.
Findings	No finding was raised.
Conclusion	The scope of work in the current verification is limited to the labelling of already verified and issued CERs. Hence no further assessment is required.

E.5.2. Data and parameters monitored (Carbon Verification)

The verification of monitoring parameters are in accordance with the monitoring plan described in the registered PDD; the emission reductions (ER) achieved during the monitoring period from 25/09/2014 to 02/09/2016 are already issued by UNFCCC /18/.

E.5.3. Data and parameters monitored (Sustainability Verification)**E.5.3.1: Quality of Employment**

Means of verification	Criteria/Requirements	Assessment
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	Measuring /Reading /Recording frequency	It is sustainable development parameter. Quality of employment generated by the project activity is monitored. Project participant conducts various activities on regular basis for improving the skills and thereby quality of employment of its employees. Various indicators of quality of employment viz. quality job creation, working conditions, health care facilities, skill build-up through workshops and trainings, putting safeguard in place and living standard of the plant staff are monitored as and when such activities are organised/12,15,16/.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	The measuring and recording frequency is in line with the monitoring plan of registered passport. The project passport requires the quality of employment to be monitored on annual basis. The assessment team confirms that the monitoring of quality of employment with reference to various parameters viz. training, occupational health, safety of employees and working environment is being done on annual basis /15,16,17/.
	How were the values in the monitoring report verified?	The following training programmes in order to enhance the safety awareness, operational skills and occupational health management have been organised during the current monitoring period; Trainings and workshops” organized at Ankireddypalli site office (Kurnool district) /12/ to : i. Safety, Health & Environment Training programme Period: 04/03/2015 to 10/03/2015 ii. Safety, Health & Environment Training programme Period: 04/03/2016 to 10/03/2016
	If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data has been cross checked with the quantitative information about the quality of employment which includes the records of HR, training, health care facilities etc. are maintained /9,12/.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Counting of the number of trainings and respective attendees is done by a training attendance sheet which states the programme name, venue, faculty, date and timing, attendee details (employee code, name, designation and department). Each training attendance sheet has a unique form number. Records of any activity related to the quality of employment is maintained by HR.
	Findings	CAR #4 was raised and resolved
Conclusion	The parameter has been monitored appropriately, in accordance with the sustainability monitoring plan (as per measurement methods and procedures to be applied). The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.	

E.5.3.2: Human and institutional capacity

Means of verification	Criteria/Requirements	Assessment
	Measuring /Reading /Recording frequency	It's a sustainable development parameter which monitors the number of villagers directly or indirectly benefited by the CSR activity initiatives, referring to the project, undertaken by the project proponent. This parameter is monitored on annual basis.

	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	The number of local villagers, directly and indirectly benefited through the initiatives taken under CSR programmes by the project participant, is monitored annually which is found in line to the frequency set in passport /1/.
	How were the values in the monitoring report verified?	Project proponent has initiated the number of CSR programmes pertaining to capacity building, health, education etc. The main CSR activities verified are as below; - Organized tree plantation programs in schools at Ankireddypalli village in Kurnool District /11/ - Donation of books and stationery in the schools at Venkatampalli and Itikyala villages of Kurnool district nearby village schools at both the sites/11/ - As part of its endeavour to introduce healthcare awareness and contemporary health care services, fully equipped mobile medical van is launched in collaboration with CSR consulting partner SoulAce in association with ground level NGO partner Crescent Rural Development Society (CRDS). Mobile healthcare medical van is operational across nearby 09 villages of Anantapur and Kurnool districts. In addition, Dengue awareness programme in school was conducted by spreading awareness and distributing the required medicines in the respective villages./11/ During the site visit the assessment team has verified that Medical van was operational and qualified medical team comprised of one MBBS doctor, Nurse, pharmacist. Medical staff and representatives of NGO were interviewed and it is confirmed that NGO having access to deserving villages which are cut off from regular health services. Mobile healthcare unit covers the vicinity of 20-50 kms from its centre and will visit 2-3 villages a day on a regular basis. Services being provided to villagers are of high quality, free of cost and at their doorstep. The verification team is in opinion that estimation of the exact number of local villagers who have been benefited by these initiatives is very difficult. However, taking note of the type of CSR activities initiated/17/ and observation of the stakeholders interviews and time duration of monitoring period, it can be concluded that the villagers of the nearby project sites have been benefitted convincingly. It is also important to note that the social initiatives take care of long term and broad impacts.
	If applicable, has the reported data been cross-checked with other available data?	The parameter was verified using documented evidence like, MIS forms & photographs, feedback forms from schools, periodic status/progress report etc., photographs relevant to particular activity, stakeholder interview and on-site observation and found okay /07,10,11/.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes during the site visit it is assured that the project proponent has appropriately maintained the records for the CSR activities, hence it can be confirmed that the QA/QC process is in place.
Findings	CAR #5 was raised and resolved	
Conclusion	The parameter has been monitored appropriately, in accordance with the sustainability monitoring plan (as per measurement methods and procedures to be applied). The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.	

E.5.3.3: Quantitative employment opportunities and income generation

Means of verification	Criteria/Requirements	Assessment
	Measuring /Reading /Recording frequency	This is a sustainable development parameter to monitor the total number of employment opportunities created. Total number of job created for the local population is monitored on annual basis or at least once in monitoring period.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The monitoring frequency is in line with the passport /3/.
	How were the values in the monitoring report verified?	Total number of job created by the project is 38 which includes technical WWIL staff (25), security guards(5) and non-technical staff(8). This is verified from the HR records that all local guards belong to the local site offices/9/. Also, most of the staff of WWIL is from the local areas however it does have some senior personal from outside. The local contracts were also found from the local nearby areas. The assessment team has interviewed the guards and observed that almost all of the personnel were unemployed before taking up the job of security guards with the project developer. Therefore, the assessment team is in opinion that the project activity contributes to the livelihood of the poor. In addition to the direct jobs created, quite a few indirect jobs were created by the project activity like frequent visits to the project site by various stakeholders of the project (project developers, technicians, auditors, vendors and suppliers) gives rise to a demand for various support services in the local area. This results in increased livelihood options and income generation for the local population and estimation of such number is a bit difficult task.
	If applicable, has the reported data been cross-checked with other available data?	The reported data has been cross checked with the HR records maintained by the project proponent and interviewing the local stakeholders during the site visit.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The HR department monitors and maintains the up to date records of total number of job created, necessary QA/QC processes in place.
	Findings CAR #4 was raised and resolved	
Conclusion	The parameter has been monitored appropriately, in accordance with the sustainability monitoring plan (as per measurement methods and procedures to be applied). The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.	

E.5.3.4: Bird mortality caused due to this project activity

Means of verification	Criteria/Requirements	Assessment
	Measuring /Reading /Recording frequency	This is a sustainable development parameter to monitor the total number of casualties to birds due to operation of project activity during the monitoring period under concern.

	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The monitoring frequency is in line with the passport /1/.
	How were the values in the monitoring report verified?	During the site visit local villagers were interviewed and confirmed that no incident of bird mortality was reported during operation of the project activity in the current monitoring period. In order to avoid any bird mortality preventive measures are taken, proper isolation is provided on transmission lines connected to poles
	If applicable, has the reported data been cross-checked with other available data?	During the site visit it is confirmed that there is no existing legally donated ecological sensitive zone (like national park, sanctuaries, habitats etc.) around the vicinity of the project site and local villagers were also interviewed in this regard and no concern identified
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The O&M monitors and maintains the up to date records of such incidents, necessary QA/QC processes in place.
Findings	No finding was raised	
Conclusion	The parameter has been monitored appropriately, in accordance with the sustainability monitoring plan (as per measurement methods and procedures to be applied). The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.	

E.5.4. Implementation of sampling plan

Means of verification	Not applicable
Findings	Not applicable
Conclusion	Not applicable

E.6. Compliance with the calibration frequency requirements for measuring instruments

Means of verification	The requirements have already been verified and CERs for the current monitoring period issued by CDM EB /18/.
Findings	Not applicable
Conclusion	No further verification is required in this regard.

E.7. Assessment of data and calculation of emission reductions or net removals

E.7.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	The assessment team has verified the verification reports for the period 25/09/2014 to 02/09/2016, the amount of CERs issued by CDM EB as 157,704 tCO ₂ /18/. Note: During the current monitoring period, it is noted that end date of each month overlaps with the start date of consecutive month, however despite of overlapping there is no double counting of data because meter reading is taken at a particular time of the day (e.g. 11:30 AM). Hence the period for e.g 25/09/2014 to 24/10/2014 would denote reading till that time of 24/10/2014, next period 24/10/2014 to 24/11/2014 denotes reading after that particular time of 24/10/2014. These dates are also reflected in the monthly JMRs issued by state utility based on which ER calculation is done.
Findings	CAR #3 was raised and resolved
Conclusion	The verification team confirms that a) The complete data was available and is duly reported; b) Appropriate methods and formulae for calculating baseline GHG emissions or baseline net GHG removals were followed;

	c) Appropriate emission factors and other reference values were correctly applied. d) There is no pro-rate approach (para 403(e) of CDM VVS Version 09) was applied in the current monitoring period as entire monitoring period falls into period that is after the end of first commitment period of Kyoto Protocol.
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E.7.2. Calculation of project GHG emissions or actual net GHG removals by sinks

Means of verification	The requirements have already been verified and CERs for the current monitoring period issued by CDM EB /18/.
Findings	Not applicable
Conclusion	No further verification is required in this regard.

E.7.3. Calculation of leakage GHG emissions

Means of verification	The requirements have already been verified and CERs for the current monitoring period issued by CDM EB /18/.
Findings	Not applicable
Conclusion	No further verification is required in this regard.

E.7.4. Summary of calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

Means of verification	The assessment team has verified the verification report/18/ covering the current monitoring period and confirmed that issuance of CERs by CDM EB is done/18/.
Findings	Not applicable
Conclusion	No further verification is required

E.7.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Means of verification	Not applicable
Findings	Not applicable
Conclusion	Not applicable

E.7.6. Remarks on difference from estimated value in registered PDD

Means of verification	Not applicable
Findings	Not applicable
Conclusion	Not applicable

E.7.7. 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	As verified from the verification reports available at UNFCCC project webpage, that CERs for the period from 25/09/2014 to 02/09/2016 are already issued. The assessment team has checked the ER calculation sheet/6/ and emission reductions for the current monitoring period (25/09/2014 to 02/09/2016) is verified as 157,704 tCO ₂ .
Findings	CAR #3 was raised and resolved
Conclusion	Earthood confirms that the monitoring system with reference to GS sustainable development parameters is in place for verified emission reductions from the CDM project activity (UN 4677) "Vaayu India Wind Power Project in Andhra Pradesh" in India for the monitoring period 25/09/2014 – 02/09/2016 which amount to 157,704 tonnes of CO ₂ .

SECTION F. Internal quality control

A draft verification report prepared by assessment team is reviewed by an independent Technical Review team (one or more members) to confirm if the internal procedures established and implemented by Earthood were duly complied with and such opinion/conclusion is reached in an objective manner that complies with the applicable Gold Standard and CDM requirements. The technical review team is collectively required to possess the technical expertise of all the technical area/sectoral scope the project activity relates to. All team members of technical review team are independent of the validation team. The report approved by Quality Manager is endorsed by Managing Director, who is overall responsible to ensure quality, before final release. The further details of applicable procedures and responsibilities about Earthood Quality Management System (QMS) are available on its website (www.earthood.in)

SECTION G. Verification opinion

Earthood Services Private Limited (Earthood), contracted by Vaayu (India) Power Corporation Private Limited, has performed the independent verification of the emission reductions for the GS Project “Vaayu India Wind Power Project in Andhra Pradesh” in “India” for the monitoring period 25/09/2014 to 02/09/2016 as reported in the Monitoring Report, Version 1.3 dated 05/09/2017. The ‘Vaayu (India) Power Corporation Private Limited’ is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity. Earthood commenced the verification against the baseline and monitoring methodology “Consolidated baseline methodology for grid connected electricity generation from renewable sources”, Version 11 the monitoring plan contained in the PDD Version 05 dated 22/05/2012, GS Passport Version 1.3 dated 12/07/2016 and Monitoring Report Version 1.3 dated 05/09/2017.

ESPL confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements. This verification report has been prepared using the latest available template specified by UNFCCC and complies with the instructions to follow as per para 406 and 407 of CDM VVS Version 9. The verification activities were conducted in accordance with ESPL’s CDM Quality Manual System as per the steps indicated under Section A of this report.

As a result, it is confirmed that the emission reductions from the GS PA (4603) “Vaayu India Wind Power Project in Andhra Pradesh” are correctly reported in the Monitoring Report (final) Version 1.3 dated 05/09/2017 and corresponding ER sheet for the monitoring period 25/09/2014 to 02/09/2016(including both days) amounted as 157,704 tCO₂e. Therefore, this will be submitted as part of request for issuance as per CDM PCP Version 9&GS tool kit 2.2.

SECTION H. Certification statement

ESPL’s verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. ESPL planned and performed the verification by obtaining evidence and other information and explanations that ESPL considered necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

In our opinion the GHG emissions reductions reported for the project activity are fairly stated in the Monitoring Report (final) Version 1.3 dated 05/09/2017. ESPL, based on outcome of verification activities, certifies in writing that, during the monitoring period 25/09/2014–02/09/2016(including both days), the registered GS PA “Vaayu India Wind Power Project in Andhra Pradesh” in the registered GS PA achieved the verified amount of 157,704 tCO₂e reductions in anthropogenic emissions by sources of greenhouse gases that would not have occurred in the absence of the PA.

The verified amount of emission reductions is stated below as per each CPAs and as per commitment period;

Year	Emission Reductions (Amount) in this monitoring period	
	Duration	Emission reduction
2014	25/09/2014 to 31/12/2014	10,184 tCO ₂ e
2015	01/01/2015 to 31/12/2015	91,033 tCO ₂ e
2016	01/01/2016 to 02/09/2016	56,487 tCO ₂ e

Total	Nil	157,704 tCO ₂ e
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Appendix 1. Abbreviations

Abbreviations	Full texts
ABT	Availability Based Tariff
APCPDCL	Andhra Pradesh Central Power Distribution Company Limited
APTRANSCO	Andhra Pradesh Transmission Corporation
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM PCP	Clean Development Mechanism Project Cycle Procedure
CDM PS	Clean Development Mechanism Project Standard
CDM VVS	Clean Development Mechanism Validation and Verification Standard
EB	Executive Board
EF	Emission Factor
EPC	Engineering ,Procurement and Construction
ER	Emission Reductions
CEA	Central Electricity Authority
CER	Certified Emission Reduction
CL	Clarification Request
DOE	Designated Operational Entity
DNA	Designated National Authority
EIL	Enercon(India) Limited
ESCOM	Electricity Supply Company
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GOI	Government of India
IRR	Internal Rate of Return
IPCC	Intergovernmental Panel on Climate Change
JMR	Joint Meter Reading
MP	Monitoring Plan
MR	Monitoring Report
MWh	Megawatt hour
PDD	Project Design Document
PPA	Power Purchase Agreement
PP	Project Participant
PRC	Post Registration Changes
PS	Project Standard
RMP	Revised Monitoring Plan
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
UID	Unique Identification number
UNFCCC	United Nations Framework Convention on Climate Change
WTG	Wind Turbine Generator
WEC	Wind Energy Convertor
WWIL	Wind World India Limited

Appendix 2. Competence of team members and technical reviewers

Competence Statement			
Name	Ravi Kant Soni		
Country	India		
Education	B. Tech. (Mechanical Engineering) M. Tech. (Energy Management)		
Experience	7 Years		
Field	Energy and Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	AMS-I.D., AMS-I.C., ACM0002		
Local Expert	YES(India)		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert (1.2)	YES		
Reviewed by	Abhishek Mahawar	Date	09/09/2016
Approved by	Kaviraj Singh	Date	09/09/2016

Competence Statement			
Name	Shreya Garg		
Country	India		
Education	M.Sc. (Climate Science & Policy), TERI University		
Experience	5 Years +		
Field	Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	AMS.I.A., AMS.I.C., AMS.I.D., AMS.I.F., AMS.II.D., AMS.II.G., AMS.II.J., AMS.III.AV., ACM0002, ACM0012		
Local expert	YES (India)		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert	YES (TA 1.2, TA 3.1)		
Reviewed by	Abhishek Mahawar	Date	20/07/2017

Approved by	Ashok Gautam	Date	20/07/2017
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Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	PP	GS Passport	Version 1.3, dated 12/07/2016	Other
2	ESPL	GS Validation Report	Version 2.1, dated 17/03/2016	Other
3	PP	ER spread sheet (initial)	Version 01, dated 02/01/2017	PP
4	PP	Monitoring Report	Version 1 dated 02/01/2017	PP
4.1	PP	Monitoring Report	Version 1.2 dated 27/07/2017	PP
5	PP	Monitoring Report (final)	Version 1.3 dated 05/09/2017	PP
6	PP	ER spreadsheet (final)	Version 1.3	PP
7	ESPL	On site verification activities including physical inspection and interviews of the personnel	-	Other
8	UNFCCC	Methodology ACM0002	Version 11	Other
9	PP	HR records for various parameters viz. total number of employees, type of employment, quality of employment etc.	-	PP
10	ESPL	Photographs of working staff at site and security guards	-	Other
11	PP	i. Quarterly CSR report (Aug 2016 to Oct 2016) ii. Quarterly CSR report (Nov 2016 to Jan 2017) iii. MIS forms & photographs for healthcare van iv. Feedback forms from schools where books and stationary distributed v. Periodic status/progress report regarding the facilities provided to local villagers vi. Photographs relevant to particular activity,	-	PP
12	PP	Training records (Attendance and photographs) “Trainings and workshops” organized at Ankireddypalli site office (Kurnool district) iii. Safety, Health & Environment Training programme Period: 04/03/2015 to 10/03/2015 iv. Safety, Health & Environment Training programme Period: 04/03/2016 to 10/03/2016	-	PP
13	UNFCCC	UNFCCC project web page: http://cdm.unfccc.int/Projects/DB/DNV-CUK1302613748.83/view	-	Other
14	GS	GS project webpage https://mer.markit.com/br-reg/public/project.jsp?project_id=103000000010316	-	Other
15	PP	Records of Safety system and procedures	-	PP

		implemented on site		
16	PP	Records of health care and first aid facilities for employees available on/off site	-	PP
17	PP	Policy, procedure and records for occupational safety	-	PP
18	ESPL	CDM verification report: For the period : 25/09/2014 to 02/09/2016	Version 03,dated 24/05/2017	Other

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

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

FAR ID	Xx	Section no.	-	Date:DD/MM/YYYY
Description of FAR				
No FAR remaining from validation				
Project participant response				Date:DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				Date:DD/MM/YYYY
NA				

Table 2. CL from this verification

CL ID	01	Section no.	E.1	Date : 25/03/2017
Description of CL				
Start date and end date of each month in current monitoring period does not match with the billing cycle dates as mentioned in JMRs. Please clarify the inconsistency observed.				
Project participant response				Date : 08/06/2017
PP has revised start date and end date of each month in monitoring report as per billing cycle dates as mentioned in respective JMRs. These monthly meter readings (JMRs) are taken jointly by officials of state electricity utility in presence of O&M contractor. Therefore, PP has revised start date of current monitoring period as 25/09/2014 and end date of current monitoring period as 02/09/2016. We would like to clarify that billing cycle is under control of state utility and could be changed anytime. The change made in monitoring dates is in line with guidelines published in 41st meeting of EB under paragraph 78.				
Documentation provided by project participant				
MR version 1.1 ER sheet version 1.1				
DOE assessment				Date: 30/06/2017
Current monitoring period is updated as from 25/09/2014 to 02/09/2016 in the revised MR in line with the billing cycle dates mentioned in the JMRs issued for the month October 2014 and September 2016 respectively. It is to be noted that the monthly JMRs is the main cross reference of verification for the power exported by the project activity to the grid system and the monthly power invoices are also generated based on this monthly JMR statement and cannot be altered once issued. Since monthly data recording (billing date) and issuance of JMRs is solely under control of state electricity authority AP TRANSCO, hence PPs argument is accepted. The assessment team confirms that the change in monitoring dates is in line with guidelines published in 41st meeting of EB under paragraph 78. Thus CL #1 is closed successfully				

Table 3. CAR from this verification

CAR ID	02	Section no.	E.5	Date : 25/03/2017
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Description of CAR	
1. Section C of MR: Meter serial numbers reported (at 33 Kv side of substation) in this section are not consistent with the same verified during the site visit. 2. Section D.2 of MR: Meter serial numbers reported (at 132 Kv side of substation) are found to be inconsistent with the same mentioned in the JMRs. Please clarify the inconsistency. 3. Please clarify the reason if there were some meter replacements occurred during the current monitoring period and also submit the meter replacement certificates issued by responsible authority.	
Project participant response	Date : 08/06/2017
1. Section C of MR: The calibration and maintenance of energy meters is beyond the control of project participant and is sole responsibility of state utility. As per Lt No. DE/M&P/KNL/AE/Tech/F.No. WIND WORLD/D.No. 374/13 DT 12.11.2013, the meter and protection division of state utility (Central Power Distribution company of AP Limited) directed O&M contractor to replace existing 0.2s class non-ABT meters with 0.2s class ABT energy meters both at 33kV and 132 kV pooling station as per APCPDCL standards. Therefore, PP has replaced energy meters installed at 33 kV side of substation as per the directions of state utility. The replacement work of energy meters by state utility initiated in the month of February 2015. The complete details of replacement of energy meters have been provided in section C of MR. 2. Section D.2 of MR: As explained above, the calibration and maintenance of energy meters is beyond the control of project participant and is sole responsibility of state utility. As per Lt No. DE/M&P/KNL/AE/Tech/F.No. WIND WORLD/D.No. 374/13 DT 12.11.2013, the meter and protection division of state utility (Central Power Distribution company of AP Limited) directed O&M contractor to replace existing 0.2s class non-ABT meters with 0.2s class ABT energy meters both at 33kV and 132 kV pooling station as per APCPDCL standards. Therefore, PP has replaced energy meters installed at 132 kV pooling substation as per the directions of state utility. The replacement work of energy meters by state utility initiated in the month of February 2015. The complete details of replacement of energy meters have been provided in section D.2 of MR. 3. As explained above, the calibration and maintenance of energy meters is beyond the control of project participant and is sole responsibility of state utility. As per Lt No. DE/M&P/KNL/AE/Tech/F.No. WIND WORLD/D.No. 374/13 DT 12.11.2013, the meter and protection division of state utility (Central Power Distribution company of AP Limited) directed O&M contractor to replace existing 0.2s class non-ABT meters with 0.2s class ABT energy meters both at 33kV and 132 kV pooling station as per APCPDCL standards. Therefore, PP has replaced energy meters as per the directions of state utility. PP has also submitted the meter replacement certificates issued by state utility to DOE.	
Documentation provided by project participant	
MR version 1.1	
DOE assessment	Date: 30/06/2017
New meter serial numbers reported in the revised MR are found consistent with the calibration reports, meter replacement certificates issued by state utility and as verified during the site visit. Old meters were non ABT type TOD meters and replaced with new ABT meters as per the notification of state utility (APCPDCL) which is sole authority responsible for calibration and maintenance of energy meters. Calibration dates of new meters reported in the revised MR are found consistent with the calibration certificates, hence accepted. CAR #2 is closed.	

CAR ID	03	Section no.	E.6	Date : 25/03/2017
Description of CAR				
Monthly values of the parameter $EG_{PJ,Y}$ reported in the ER sheet are inconsistent with the JMRs/Invoices.				
Project participant response				Date :08/06/2017
PP has revised monthly values of the parameter $EG_{PJ,Y}$ reported in the ER sheet as per the respective month's JMRs/Invoices.				
Documentation provided by project participant				
MR version 1.1				
ER sheet version 1.1				
DOE assessment				Date: 30/06/2017

Monthly values of the parameter EGPJ,y reported in the revised ER sheet are updated and found consistent with JMRs/Invoices for the respective months.
CAR #3 is closed.

CAR ID	04	Section no.	E.5.3	Date : 25/03/2017
Description of CAR				
MR section D.4: Indicator -Quantitative employment and income generation : Number of persons employed for the project activity is 38 but it is not clear how many persons were employed for particular designation i.e technical staff/security guards/Labour etc. Please clarify and submit the relevant appropriate evidences for the same. MR section D.4: Indicator -Quality of employment: Please submit the relevant appropriate evidences for the training programme organized for the employees.				
Project participant response				Date : 08/06/2017
MR section D.4: Indicator -Quantitative employment and income generation : The total number of jobs created by the project activity is 38. Wind World India has assigned team of technical, non-technical and security guards for the project activity, who are responsible for all aspects of project related wind turbines. The number of jobs created due to the project activity is divided under following categories: i. Technical Staff (25) ii. Non-technical Staff (8) iii. Security Guards (5) MR section D.4: Indicator -Quality of employment: PP has submitted the photographs for the training programme organized for the employees in appendix A and appendix B of revised MR.				
Documentation provided by project participant				
MR version 1.1 Copy of attendance sheet of employees Training attendance and photographs				
DOE assessment				Date: 30/06/2017
The PP has reported the identification of employed personnel appropriately in the revised MR, same is verified through the evidences submitted and found satisfactory. Attendance sheets and photographs for the training programme organized for the employees submitted and found satisfactory. CAR #4 is closed.				

CAR ID	05	Section no.	E.5.3	Date : 25/03/2017
Description of CAR				
Section D.4 _Indicator :Human and Institutional capacity- PP is requested to provide the complete references (dates/location/name of gram panchayat) for the each activity/initiative listed under this parameter and also submit the relevant evidences.				
Project participant response				Date : 08/06/2017
Section D.4 _Indicator :Human and Institutional capacity- PP has provided details of dates, location and name of village in revised MR for each initiative listed under this parameter.				
Documentation provided by project participant				
MR version 1.1				
DOE assessment				Date: 30/06/2017
The PP has provided the complete references (dates/location/name of gram panchayat) for the each activity/initiative listed under the parameter (Human and Institutional capacity), found to be satisfactory. All the initiatives have been undertaken by the PP in the form of mobile health van, books donation for schools to facilitate better access to health and education for the local public reported in the MR are verified during the site visit, found to be satisfactory. CAR #5 is closed.				

CAR ID	06	Section no.	E.5.3	Date : 25/03/2017
Description of CAR				
MR section D.4 (Grievance Mechanism): Please clarify why the name of concern person who had raised comments/suggestions is not mentioned in this section. Also submit the evidences regarding the objections/suggestions recorded as a part of grievance mechanism.				
Project participant response				Date : 08/06/2017

MR section D.4 (Grievance Mechanism): PP has provided names of concern person who had raised comments/suggestions in revised MR. Also PP has submitted copy of grievance register as a documentary evidence regarding the comments and suggestions recorded as a part of grievance mechanism.	
Documentation provided by project participant	
MR version 1.1	
DOE assessment	Date: 30/06/2017
Identification of the person who had raised comments/suggestions is mentioned in section D.4 of the revised MR. Updated information's are verified through the evidences submitted and found to be consistent. CAR #6 is closed	

Table 4. FAR from this verification

FAR ID	Xx	Section No.		Date: DD/MM/YYYY
Description of FAR				
No FAR raised in this verification				
Project participant response				Date: DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				Date: DD/MM/YYYY
NA				

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
01.0	23March 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: project activities, verifying and certifying		