RENEWABLE WIND POWER PROJECT BY ADANI

Document Prepared By

LGAI Technological Center, S.A. (Applus+ Certification)

Project Title	Renewable Wind Power Project by Adani
Version	02
Report ID	Internal project ID: A+SH_SYST_TQC_VCS_VER_48122

Report Title	Renewable Wind Power Project by Adani
Client	Adani Green Energy Limited
Pages	28
Date of Issue	19-December-2022
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Summary:

Verification purpose: LGAI Technological Center S.A. (Applus+ Certification) (Hereafter referred as Applus+ Certification) has been appointed/2/ by "Adani Green Energy Limited" to perform the 2nd verification of the "Renewable Wind Power Project by Adani" (VCS ID 2042)/4/. The main purpose of this verification activity is to have an independent third party for the assessment of the project design, monitoring report to ensure a thorough assessment of the proposed project activity against the applicable CDM and VCS requirements.

The purpose of the project activities to generate energy electricity by the utilization of wind energy and further selling the generated energy to the Indian grid. In this process there is no consumption of any fossil fuel and hence it does not lead to any greenhouse gas emissions. Thus, electricity would be generated through sustainable means without causing any negative impact on the environment.

Start date of the project activity is the 29-June-2019 (As per earliest date of commissioning of first SPV's WTG of 50 MW was commissioned under the Project activity)/01/. The monitoring period for this VCS verification is 01-September-2021 to 30-September-2022 (including both days) and the project activity achieved 364,385 tCO_2e emission reductions during this monitoring period thereon displaced 388,971.62 MWh amount of electricity from the generation-mix of power plants connected to the Indian Grid, which is mainly dominated by thermal/fossil fuel-based power plant.

The scope of the verification is the independent and objective review of the Monitoring Report (MR)/6/. The MR is reviewed against the relevant criteria (see above) and decisions by the CDM Executive Board and VCS executive board, including the approved baseline and monitoring methodology. The verification was based on the guidance given in the CDM validation and verification standard for project activities, version 03.0/16/, review against registered PD/4/ and Final Validation report, VCS program guideline Version 4.2/10/ and VCS Standard Version 4.3/10/

A risk-based approach has been followed to perform this verification activity. In the course of verification, 03 Corrective Action request (CAR) and 01 Clarification Requests (CLs) were raised and successfully closed. No FAR was raised during this verification. The review of the Monitoring report and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and PP have provided LGAI Technological Center S.A. (Applus+ Certification) with sufficient evidence to verify the fulfilment of the stated criteria of VCS.

The assessment team has employed a risk-based approach to assess the completeness and accuracy of the claims and conservativeness of the assumptions in the MR. The main focus of the assessment team is to identify the significant risks for the project implementation and the generation of VERs. The verification is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the monitoring report combined.

The only purpose of the verification is its usage during the issuance process as part of the VCS project cycle. Therefore, LGAI Technological Center S.A. (Applus+ Certification) can't be held liable by any party for decisions made or not made based on the verification opinion, which will go beyond that purpose.

The verification has been planned and organized to achieve a Reasonable Level of assurance as per the requirement of VCS. No sampling procedure applied for document verifications. The entire documents checked/verification conducted to arrive at positive verification conclusions.

CONTENTS

1 INTRODUCTION

1.1 Objective

LGAI Technological Center S.A. (Applus+ Certification) (Hereafter referred as Applus+ Certification) has been appointed by "Adani Green Energy Limited" to perform the 2nd verification of the "Renewable Wind Power Project By Adani" under guideline Version 4.2 and VCS standard Version 4.3. The objective of this verification activity is to have an independent third party for the assessment of the project design, Monitoring Report and Final Verification report and to ensure a thorough assessment of the proposed project activity against the applicable CDM and VCS requirements. In particular;

- The project's baseline is assessed against ACM0002 of version 19.0/20/
- The project's monitoring plan is assessed against "ACM0002 of version 19.0/20/
- the projects compliance with the requirements of Article 12 of the Kyoto Protocol, the CDM Modalities and Procedures as agreed in the Marrakech Accords under decision 3/CMP.1, the annexes to this decision, subsequent decisions and guidance made by COP/MOP & CDM Executive Board and other relevant rules, including the Host Country legislation and sustainability criteria along with VCS guideline Version 4.2/10/ and standard Version 4.3/10/
- CDM validation and verification standard for project activities, Version 03.0/16/
- VCS program guideline v. 4.2/10/
- VCS standard v. 4.3/10/

Verification is a requirement for all VCS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of verified emission reductions (VCUs).

1.2 Scope and Criteria

The scope is defined as an independent and objective review of the Monitoring report (MR)/6/ prepared as per the registered PD/4/ and registered approved methodology ACM0002 version 19.0/20/. The MR is reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board and VCS standard Version 4.3/10/ and guideline Version 4.2/10/, including the approved baseline and monitoring methodology ACM0002 version 19.0/20/. The verification was based on the requirements in the CDM validation and verification standard for project activities, Version 03.0/16/ and VCS program guideline Version 4.2/10/ and VCS Standard Version 4.3/10/

The verification is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the Monitoring report. 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. It follows the paper trail back to the raw data such as meter reading records and invoices. There are no material errors, overestimation of ER, omission or misstatement. The verification team has reviewed all the documents like commissioning certificates/1/, technical specification/3/, O&M practices, JMR/11/, invoices/11/, grievance register/15/ etc.

1.3 Level of Assurance

Applus+ Certification has planned and performed the verification by obtaining evidence and other information and explanations that assessment team considers necessary to give reasonable assurance that reported estimated GHG emission reductions are fairly stated. All documentary evidences were checked, Onsite visit was conducted to arrive at a verification conclusion by the assessment team.

In our opinion, the estimated GHG emissions reductions were calculated correctly on the basis of the approved baseline and monitoring methodology "ACM0002 of version 19.0"/20/ and the VCS Standard Version 4.3/10/

1.4 Summary Description of the Project

The project activity is a wind-based power generation project involves installation of 75 No's wind turbine generators (WTGs) with individual capacity of 2 MW, which makes total capacity of project activity is 150 MW owned by three different SPVs, 50 MW each SPV located in Kutch district, Gujrat state OF India. All three SPVs are the wholly owned subsidiary companies of Adani Green Energy Limited and same entity is project proponent of this project. The commissioning details of the project and their location with WTGs are mentioned in the table below:

Name of the SPVs	Capacity (MW)	Commissioning Date	Latitude	Longitude
Wind Three Renergy Private Limited	50	29-June-2019	23°12'32 .41 08" N	70°38'7.6 236" E
Wind One Renergy Private Limited	50	02-July-2019	23°12'29 .95 2" N	70°37'50. 9772" E
Adani Green Energy (MP) Limited	50	20-October-2019	23°12'30 .42" N	70°38'26. 0484" E

Start date of the project activity is the 29-June-2019 (As per earliest date of commissioning of 1st Wind turbine generator of Project activity). The monitoring period this VCS verification covered from 01-September-2021 to 30-September-2022(inclusive of both dates) and the project activity achieved 364,385 tCO_2e emission reductions during this monitoring period.

Assessment team checked the Commissioning status of the project activity with the commissioning certificates and found correct. The project is implemented as per the description in the registered PD. No event observed during the current monitoring period which can alter or deviate from the methodology requirement.

Below are the entities involved under project activity: -

PP name	Adani Green Energy Limited
Contact person	Mr. Sandeep Saha
Title	Manager
Address	4th Floor - South Wing Adani House, Shantigram, SG Highway, Ahmedabad.
Telephone	+91 7925557699
Email	Sandip.Saha@adani.com

Other entity name	EKI Energy Services Limited
Role in the Project	Carbon Consultant
Contact person	Mr. Manish Dabkara
Title	Project Consultant
Address	EnKing Embassy, Office No 201, Plot 48, Scheme 78, Part 2, Vijay Nagar, Indore- 452010, Madhya Pradesh, India.
Telephone	+91-731-4289086
Email	manish@enkingint.org , registry@enkingint.org

2 VERIFICATION PROCESS

2.1 Method and Criteria

Verification Process: The project assessment is based on the "CDM validation and verification standard for project activities, Version 03.0/16/ and "VCS standard Version 4.3/10/, program guideline Version 4.2/10/" and is conducted using standard auditing techniques to assess the correctness of the information provided by the project participants. Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), and relevant host country experience for evaluating the VCS project activity are appointed.

Once the project is received by the assessment team, the members of the assessment team carried out: -

1. A desk review of the Monitoring report/16/ against the registered PD/04/ and final validation report/17/;
2. Onsite audit and site visit;
3. The resolution of outstanding issues and the issuance of the final verification report and opinion.

The prepared verification report and other supporting documents then undergo an internal quality control at the HQ (Accredited office) before being submitted to the VCS executive board.

In order to ensure transparency, assumptions must be clear and stated explicitly and background material must also be referenced. Applus+ Certification has developed a specific checklist customized for the project. The checklist demonstrates, in a transparent manner, the project criteria (requirements), discussion on each criterion by the assessment team, and the results from validating the identified criteria.

Appointment of the assessment team

According to the sectoral scope / technical area and experience in the sectoral or national bus iness environment, Applus+ Certification
as composed a project assessment team in accordance with the appointment rules in the inter nal Quality Management System of Applus+
certification. The composition of audit team shall be approved by the 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 c overed by the assessment team.

Name	Role	SS Coverage	TA Coverage	Financial aspect	Host country experience
Dr. Atul Takarkhede	LA/TE	YES	YES	NA	YES
Mr. Deepak Pundlik	A/TE	YES	YES	NA	YES
Mr. Denny Xue	TR	YES	YES	NA	NA

The detail regarding the assessment team is provided below in this report as Appendix 3

Document review

The Monitoring report version 01/06/ submitted by the PP was reviewed against the approved methodology/20/, registered PD & MR/04/, final validation report and other relevant criteria to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources has been done. A complete list of all documents and evidence material reviewed is included in this report below in Appendix 1.

Site Visit

A Site visit is conducted by Applus+ Certification. Audit team performed onsite audit with project stakeholders to confirm selected information mentioned in monitoring report and to resolve issues identified in the document review. The detail is provided in this report.

Resolution of Clarification and Corrective Action Request

The objective of this phase of the Verification was to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified for Applus+ Certification positive conclusion on the Monitoring report. The Corrective Action Requests and Clarification Requests raised by Applus+ Certification were resolved during communications between the Client and Applus+ Certification to guarantee the transparency of the verification process, the concerns raised and responses given are summarized below in the Appendix 2.

The final MR Version 02/06/ submitted by PP serves as the basis for the final assessment presented. Additional changes to the project during the verification process are not considered to be significant with respect to the main CDM/VCS objectives. The two CDM/VCS main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

Internal quality control

As final step of a verification of the final documentation including the verification report and the checklist have to undergo an internal quality control by the technical review committee, i.e., each report has to be finally approved either by the head of the technical review committee or the deputy. In case one of these two persons is part of the assessment team approval can only be given by the other one to avoid any conflict of Interest.

After confirmation of the PP the positive verification opinion and relevant documents are submitted to the VCS board through the VCS web-platform.

2.2 Document Review

The details of the document observed during the verification process are listed below in Appendix 1 of this report

2.3 Interviews

Interview date: - 23-November-2022						
No.	Interviewee				Subject	Team member
	Last name	First name	Affiliation			
1.	Saha	Mr. Sandip	Adani Green Energy Limited		Project Implementation,	

Interview date: - 23-November-2022						
No.	Interviewee				Subject	Team member
	Last name	First name	Affiliation			
2.	Singh	Mr. Arjun	Site-in-Charge	23-November-2022	JMR & invoicing procedure, calibration, grievance mechanism, Management practices, data storage, QA/QC	Dr. Atul Takarkhede & Mr. Deepak Pundlik
3.	Pathak	Mr. Deepak	Adani Green Energy Limited			
4.	Nimonkar	Mr. R. K	EKI Energy Services Limited		GHG calculations, MR and ER preparation, Data collection, data storage, QA/QC	
5.	Kurmi	Mr. Sandeep Kurmi	EKI Energy Services Limited			

2.4 Site Inspections

Duration of on-site inspection: 23-November-2022				
No.	Activity performed on-site	Site location	Date	Team member
1.	Assessment team checked the implementation of the project, Baseline emission, Emission reduction calculation, technical description of the project and Monitoring. Assessment team also checked that whether the monitoring plan as described in the VCS PD is actually practised onsite. Also, assessment team checked any change in host country criteria which may affect the baseline of the project activity.	Meghpar, Lakhpat, Ratadiyaat,Kutch District of Gujrat State of India	23-November-2022	Dr. Atul Takarkhede (Team Leader) & Mr. Deepak Pundlik (Auditor)

2.5 Resolution of Findings

The objective of this phase of the Verification was to resolve the requests for corrective actions and clarification and any other outstanding issues from verification which need to be clarified for Applus+ Certification's positive conclusion on the Monitoring report. The Corrective Action Requests and Clarification Requests raised by Applus+ Certification were resolved during communications between the Client and Applus+ Certification to guarantee the transparency of

the verification process, the concerns raised and responses given are summarized below in the Appendix 2.

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Areas of validation and verification findings	No. of CL	No. of CAR	No. of FAR
Project design document and Monitoring report	01	01	00
Description of project activity	00	00	00
Application of selected baseline and monitoring methodology and selected standardized baseline			
Applicability of methodology and standardized baseline	00	00	00
Deviation from methodology	00	00	00
Clarification on applicability of methodology, tool and/or standardized baseline	00	00	00
Project boundary	00	00	00
Establishment and description of baseline scenario	00	00	00
Demonstration of additionality	00	00	00
Emission reductions	00	01	00
Calibration details	00	01	00
Monitoring plan	00	00	00
No Net harm assessment	00	00	00
Local stakeholder consultation	00	00	00
Others (please specify	00	00	00
Total	**01**	**03**	**00**

The list of findings and the resolution is presented in Appendix 2 of this report.

2.5.1 Forward Action Requests

This is 2nd verification of the project activity and no FAR was raised from validation and previous verification. Same has been verified from validation report and previous verification report.

2.6 Eligibility for Validation Activities

This section is not applicable for present verification, as Applus+ Certification holds the accreditation for Validation of projects under this Sectoral Scope.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The project activity has not availed GHG emission reduction from any other GHG program and there will not be any double counting for the same. Moreover, PP has also submitted an officially attested declaration letter/12/ to assessment team regarding no participation in other GHG program for the concerned monitoring period. Found acceptable.

3.2 Methodology Deviations

This section is not applicable for present verification as no methodology deviation sought during this verification

3.3 Project Description Deviations

During registration of the project activity under VCS mechanism, the source of generation data for all the SPVs, Joint Meterting Reports issued by respective State Utility were considered as the source. However, After Validation of the project activity, Monitoring practices was reformed by the state utility and REA (Regional Energy Account) statements issued by Western Regional Power Committee (WRPC), CEA are being issued for all the three SPVs. The REA statements being issued to PP as source of data for the generation is as per the requirement of State electricity authority and PP has no role to play in it. Hence, the generation data during the current monitoring period has been taken from the REA statements.

Above mentioned deviation was approved by VVB during previous verification of Monitoring period 29-June-2019 to 31-August -2021.

3.4 Grouped Project

This is not a grouped project. Thus, this section is not applicable.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

During the Site visit, it was concluded that the project is implemented as per the requirement of the registered VCS PD and approved monitoring plan, during the current monitoring period; it was observed that no unforeseen incident/event evolved which can impact the operation of the

project activity which was verified from breakdown records. However, during review of the project activity, VVB team found that during last month of monitoring period, All WTGs owned by two SPVs (i.e., Wind Three Renergy Private Limited and Wind One Renergy Private Limited) were gone through overhauling process (scheduled maintenance), hence no generation were made during that period which is acceptable to the assessment team and evident from JMRs.

The project activity is a 150 MW wind power project and locations of the same are confirmed by the verification team during the Site visit. The Project activity consists of total 3 SPVs having 50 MW each capacity which contain total capacity 150 MW. implemented by Adani Green Energy Limited, in Kutch district of Gujrat state in India.

The Details of project location:

Name of the SPVs	Capacity (MW)	Village	Taluka	District	State
Wind Three Renergy Private Limited	50	Meghpar, Lakhpat	Nakhatrana	Kutch	Gujarat
Wind One Renergy Private Limited	50				
Adani Green Energy (MP) Limited	50	Ratadiyaat			

Verification team confirmed from the registered PD/4/ and from previous verification reports/17/ that the location of the project activity including the coordinates is same as mentioned in the registered VCS PD/4/.

Assessment team checked the commissioning certificates/1/ and confirmed that the dates of Commission for the Wind plants are correct. Assessment team also conform during site visit with the PPs representatives that there is no change in project design and the project is implemented as per the description provided in the VCS PD & MR. The project boundary includes the electricity generation equipment at the project site, substation and the regional grid (now Indian grid). Connected substations mentioned above are verified during site visit.

Name of the SPVs	Capacity (MW)	Commissioning Date	Latitude	Longitude
Wind Three Renergy Private Limited	50	29-June-2019	23°12'32 41. 08" N	70°38'7. 6236" E
Wind One Renergy Private Limited	50	02-July-2019	23°12'29 95. 2" N	70°37'50 .9772" E
Adani Green Energy (MP) Limited	50	20-October-2019	23°12'30 .42" N	70°38'26 . 0484" E

Assessment team also checked the technical details of the Wind plants installed onsite from documents submitted by PP and previous verification reports. The assessment team confirmed that there is no proposed or actual change to the project design during this monitoring period. The project design as mentioned in the registered PD is implemented and thus the same is acceptable to the assessment team. All required monitoring equipment's and procedures as mentioned in the registered PD are available and implemented in an appropriate manner.

The organisational role and responsibility as mentioned in the registered PD/4/ is followed onsite confirmed during site visit. All the emergency preparedness as mentioned in the registered PD/4/ is followed onsite and no discrepancies were found regarding the same. Meters are calibrated as per calibration frequency in registered VCS PD/4/. All the emergency preparedness as mentioned in the registered VCS PD is followed onsite and no discrepancies were found regarding the same. Thus, completeness of the monitoring plan confirmed and there are no any material discrepancies between the actual monitoring system and the plan provided in the registered PD.

CL 01 is raised for the inconsistency with respect to MR template guidelines and CAR 01 is raised for supporting evidences for No-Double counting & date format which was closed successfully after proper response of PP.

Assessment team confirms following during the verification Site visit:

1. Start date of the project activity is 29-June-2019 as mentioned in the registered VCS PD/4/.
2. An undertaking letter dated 10-November-2022 has been submitted by PP for no double counting with any other GHG program. PP also has given a written declaration that project has not claimed other form of GHG credit.
3. Assessment team confirms that this is the 2nd monitoring under VCS and covers the activity from 01-September-2021 to 30-September-2022 (inclusive of both dates). The project activity adopts renewable crediting period of 10 years period and can be renewed for maximum 2 times. 29-June-2019 is the start date and 29-June-2029 will be end date of the crediting period/6/.

   The GHG credits from 01-September-2021 to 30-September-2022 will be claimed under VCS only. At any point of time during the crediting period, the project proponent will abide by the "No Double Counting"/12/.
4. Assessment team checked and found that the Project proponent of the project activity mentioned in Section 1.3 of monitoring report is correct/6/:
5. Assessment team also checked the details of other entity mentioned in Section 1.3 of monitoring report and found correct/6/.
6. The quantified emission reduction calculation for the monitoring period is correct and conservative. Assessment team also compared actual VCUs with the estimated VCUs and found that the actual VCUs is 364,385 tCO_2e which is 11.65% higher than the estimated emission reductions 326,372 tCO_2e (301,584 tCO_2e/365 days x 395 days) during this monitoring period.

WTGs Owners	PLF at the time of Registration	PLF of current monitoring period	Equity IRR with respect to current MP	Benchmark	Result
Wind Three Renergy Private Limited	24.50%	19.88%	3.92%	14.07%	Not breaching
Wind One Renergy Private Limited	24.50%	22.65%	6.20%	14.07%	Not breaching

Adani Green Energy (MP) Limited	24.50%	39.53%	13.33%	14.07%	Not breaching

From the above data in table, it was observed that the PLF achieved by WTGs owned by Adani Green Energy (MP) Limited, during this monitoring period is 39.53% which is higher than estimated PLF i.e., 24.50%. As per the VCS approved PD, project becomes non additional if it achieves a PLF of 71.29%. further PP have also submitted revised IRR sheet with actual PLF achieved during this monitoring period. Thus, it is concluded that the project activity is still additional though 11.65% higher emission reductions achieved.

Further, in line with para 3.16.1 of VCS Standard, "The project proponent must demonstrate that a project contributes to at least three SDGs by the end of the first monitoring period, and in each subsequent monitoring period." As per the provision of implementation deadline, "Projects registered before 20 January 2023 shall demonstrate contributions to at least three SDGs by 20 January 2025". However, PP does not provide achieved SDG contribution data in respective table:1 of MR and same has been accepted as not being mandatory till 20 January 2025.

4.2 Safeguards

4.2.1 No Net Harm

No potential environment or socio-economic matter was found during the documents review of VCS PD and grievance register etc. The project is renewable energy project and thus no negative impact observed due to project activity.

The project activity promotes environmental and socio-economic well-being as it results in zero GHG emissions due to installation and operation of clean, renewable energy technology for electricity generation. The report on "Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects" prepared by MNRE dated September 2013[1]. This report clearly mentioned that wind/Wind power project activity operations do not result in direct air pollution, noise pollution. Moreover, also as per the Central Pollution Control Board of India notification[2] wind/wind project falls under White Category and are practically non-polluting.

4.2.2 Local Stakeholder Consultation

Local stakeholder consultation has been conducted at the time of project registration. For on-going stakeholder's communication, PP have maintained grievance register/15/ at the site office. All the stakeholders are happy with the implementation and operation of the project activity and no negative comments envisaged for the project activity. Complaint/suggestion/feedback register is maintained at site as a part of ongoing communication with stakeholders in line with clause 3.16.17 of VCS Standard, ver. 4.3 /10/ and appropriate actions taken time to time by PP.

[1] https://smartnet.niua.org/sites/default/files/resources/report-on-developmental-impacts-of-RE.pdf

[2] https://cpcb.nic.in/openpdffile.php?id=TGF0ZXN0RmlsZS9MYXRlc3RfMTE4X0ZpbmFsX0RpcmVjdGlvbnMucGRm

Assessment team checked the grievance register[15] provided by PP and found that local stakeholders can anytime lodge their grievances if any in the register over the operational life time of the project. During current monitoring period no grievance was received. Thus, assessment team is of the opinion that the ongoing stakeholder mechanism is adequate and appropriate. Assessment team during the onsite observed that, Grievance register is maintained at project location. Thus, no discrepancies were observed in this section.

4.3 AFOLU-Specific Safeguards

This section is not applicable as this project activity is a non-AFOLU project activity.

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

Means of verification	The verification team assessed whether the data and calculations of GHG emission reductions achieved resulting from the VCS PD. 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 monitoring plan of the VCS PD & MR.
Findings	CAR 02 was raised during the verification process and closed successfully. Please refer Appendix 2 of this report for the detail closure of the CAR.
Conclusion	**Baseline Emissions:** The baseline Emissions for a given year is calculated by multiplying the energy baseline with the grid emission factor. The grid in this case is 'Indian Grid' Formula Used: - $BE_y = EG_{PJ,y} \times EF_{grid,y}$ Where, BE_y = Baseline Emissions in year y, tCO_2 $EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr) $EF_{grid,y}$ = 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" (t CO_2/MWh) **Ex-ante parameters:** The baseline emission factors are taken ex-ante in line with the registered VCS PD as well as cross checked with section validation report and found correct[4]. The baseline emission factors are calculated by the Central Electricity Authority, Govt. of India. The values of OM and BM are soured from the CEA CO_2 Baseline database version 14. The data Combined margin CO_2 emission factor ($EF_{grid,CM,y}$) is equal to 0.9368 tCO_2/MWh. The calculation approach was in line with the VCS PD. Values are as follows: $EF_{grid,OM,y}$ = 0.9610 tCO_2/MWh

	$EF_{grid,BM,y}$ = 0.8644 tCO_2/MWh $EF_{grid,CM,y}$ = 0.9368 tCO_2/MWh **Ex-post parameter:** **$EG_{PJ,y}$** = Quantity of net electricity generation supplied by the project (Wind) plant/unit to the grid in year y = 388,971.62 MWh The verification team has checked the Regional Energy Account Statement issued by WRPC /11/ from respective state electricity board for net electricity generated & supplied to the grid and crosschecked same with the invoices/11/ raised by PP towards State Utilities for the monitoring period. All values are found correct. All the parameters are monitored and recorded as per the monitoring plan in the MR. The calculations/measurement of net electricity supplied to grid is under purview of state electricity board and the PP/Project activity Instance owner has no role on it. PP/Project activity Instance owner gets value of net electricity supplied to grid and hence this parameter is mentioned as a part of monitoring plan The net electricity supplied the grid by the project activity during the monitoring period is 388,971.62 MWh. The generation values have been cross checked with the invoices and were found to be consistent. All relevant monitoring parameters have been verified with regard to the appropriateness of the applied measurement/determination method, the correctness of the values applied for ER calculation/7/, the accuracy, and applied QA/QC measures. Baseline emission factor is calculated as combined margin, consisting of a combination of operating margin (OM) and build margin (BM) factors. **BE_y (baseline emissions),** tCO_2e BE_y = 388,971.62MWh x 0.9368 tCO_2e/MWh = 364,385 tCO_2e (round down values) As per applied methodology ACM0002, version 19.0, the VCS PD, project emission is considered zero as the project activity involved Wind power generation/4/. $\boldsymbol{PE_y}$ = As per ACM0002 - Version 19.0, all renewable energy power generation project activities, emissions due to the use of fossil fuels for the backup generator can be neglected. As the project activity involved wind power project emissions (PEy) are taken as zero. **Leakage:** As per ACM0002 - Version 19.0, Leakage emissions are not considered for the project activity/20/. Hence, **$ER_y = BE_y - PE_y$**

	= 364,385– 0 = 364,385 tCO_2e (round down values) Verification team confirms that the monitoring has been carried out in accordance with the monitoring plan contained in the registered VCS PD/4/. Assessment team confirmed that the GHG emission reductions and removals have been quantified correctly in line with the registered VCS PD/4/.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

Means of verification	The verification team checked the Calibration details of the monitoring meters with the calibration certificates.
Findings	CAR 03 was raised during the verification process and closed successfully. Please refer Appendix 2 of this report for the detail closure of the CAR.
Conclusion	The verification team checked the break down log for the monitoring period/13/. During the onsite verification audit and the feeder wise location of the wind plants is also checked. The metering arrangement is bi-directional energy meters (Main and Check) of accuracy class 0.2s at the State Electricity Board (SEBI) sub-station. These electricity meters are being used by state electricity board for Share certificate statements. This meter also measures electricity exported/supplied by the plant to pooling substation and further to substation. This meter also measures electricity imported by the plant form the grid. These electricity meters are being used by state electricity board for monthly generation reports/11/. The details like make, Serial number, Calibration dates etc./5/. are provided in appendix 05 of this report. Verification team confirms that all the energy meters (main and check meter) installed at the substation are of accuracy class of 0.2s and are calibrated as per the calibration frequency mentioned in monitoring plan in VCS PD i.e. The calibration frequency of meters is once in 5 years/5/. No delayed calibrations were observed in the project activity for this monitoring period. All the meters are of same accuracy class i.e., 0.2s as per the requirement of the registered PD. Interview during Site visit with O&M personnel also confirms the same/5/. The calculation of net electricity supplied to grid is under purview of state electricity board and PP does not have control on it. Calibration details of the monitoring meters checked with calibration certificates submitted by PP and found that calibration frequency of 5 years is compiled/5/. Thus, no delayed calibration is observed and thus the same is found appropriate. The break down log is checked & details of same was provided in the monitoring report. and there is no major breakdown during the monitoring period except two months of overhauling in last two month of monitoring period. No unforced

error observed. No sampling procedure applied for monitoring of the data parameter and entire documents were checked by the assessment team to arrive at positive verification conclusions. The monitoring plan is followed at the project site. The monitoring meters were calibrated in line with the registered monitoring plan and there was no delay in calibration observed. Thus, assessment team concluded that the evidences are sufficient in quantity, and appropriate for the quality, to determine the GHG reductions and removals.

The quantified emission reduction calculation for the monitoring period is correct and conservative. Assessment team also compared actual VCU (364,385 tCO_2e) with the estimated VCU (326,372 tCO_2e) and found that the actual VCU is 11.65% Higher than the estimated emission reduction which is due to variations in wind flow pattern, grid availability and other parameters which are not in the control of PP.

WTGs Owners	PLF at the time of Registration	PLF of current monitoring period	Equity IRR with respect to current MP	Benchmark	Result
Wind Three Renergy Private Limited	24.50%	19.88%	3.92%	14.07%	Not breaching
Wind One Renergy Private Limited	24.50%	22.65%	6.20%	14.07%	Not breaching
Adani Green Energy (MP) Limited	24.50%	39.53%	13.33%	14.07%	Not breaching

From the above data in table, it was observed that the PLF achieved by WTGs owned by Adani Green Energy (MP) Limited, during this monitoring period is 39.53% which is higher than estimated PLF i.e., 24.50%. As per the VCS approved PD, project becomes non additional if it achieves a PLF of 71.29%. further PP have also submitted revised IRR sheet with actual PLF achieved during this monitoring period. Thus, it is concluded that the project activity is still additional though 11.65% higher emission reductions achieved.

4.6 Non-Permanence Risk Analysis

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	
NA	NA	NA	NA	NA

5 VERIFICATION CONCLUSION

Applus+ Certification has been engaged/02/ by Adani Green Energy Limited to perform the 2nd verification of the "Renewable Wind Power Project by Adani".

The project participants are responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project's monitoring plan in the registered VCS PD/4/ and the applied methodology ACM0002 version 19.0/20/

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. Further, the verification has been planned and organized to achieve a Reasonable Level of assurance as per the requirement of VCS. No sampling procedure applied for document verifications. The entire documents checked/Power plant verification conducted to arrive at positive verification conclusions. The verification team can confirm that:

- the project is operated as planned and described in the project document;
- the monitoring plan is as per the applied methodology;
- the monitoring process in Monitoring Report is as per the registered PD/4/;
- the development and maintenance of records and reporting procedures are in accordance with the monitoring plan;
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately;
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements.
- A Reasonable Level of assurance was achieved as planned, during verification process.
- Verification period: 01-September-2021 to 30-September-2022(inclusive of both days).

Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO_2e)[3]	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
1-September-2021 to 31-December-2021	67,207	0	0	67,207
01-January-2022 to 30-September-2022	297,178	0	0	297,178
Total	**364,385**	**0**	**0**	**364,385**[3]

[3]Rounddown values

APPENDIX 1: DOCUMENTS REVIEWED OR REFERENCED (VERIFICATION)

No.	Author	Title	References to the document	Provider
1.	Respective State Utility	Commissioning certificates of the 3 SPVs installed in Kutch district of Gujrat States of India.	-	PP
2.	Applus	Contract of the project participant with the DOE. Ref. No. A+SH_SYST_TQC_VCS_VER_48122	14-October-2022	PP
3.	Manufacturer(s)	The operational lifetime of the project activity from the manufacturer (Technical specifications)	Manufacturer technical specifications	PP
4.	VERRA	Registered PD https://registry.verra.org/app/projectDetail/VCS/2042	29-June-2019	PP
5.	Respective state authority	Calibration Certificates of energy meters	-	PP
6.	NA	MR version 01 MR version 02	18-October-2022 09-December-2022	PP
7.	NA	Emission reduction sheet version 01 Emission reduction sheet version 02	18-October-2022 09-December-2022	PP
8.	PP	O & M Agreements	-	PP
9.	SPVs and state board	Power Purchase Agreements	-	PP
10.	NA	Tools/ guidelines used in the project activity • Glossary of CDM terms version 11 • VCS standard Version 4.3 • VCS Program Guide 4.2VCS verification report template Version 4.1	UNFCCC CDM/VCS web site	UNFCCC
11.	State Utility for JMR, PP for invoice	Monthly statement- JMR & invoices for the complete monitoring period	-	PP
12.	PP	Declaration regarding no participation in other GHG program for the concerned monitoring period	10-November-2022	PP
13.	PP	Breakdown details for the monitoring period	-	PP
14.	PP	Employment records for plant persons	-	PP
15.	PP	Grievance Register maintained at site	-	PP

No.	Author	Title	References to the document	Provider
16.	UNFCCC	CDM validation and verification standard for project activities, Version 03.0	-	UNFCCC
17.	Applus	Previous Verification Report, Report ID: BELL_CDM_2021_IND WPP Adani_VCS_VER	15-November-2021	PP
18.	PP	Breakdown details of the power plant	-	PP
19.	UNFCCC	ACM0002 of version 19.0	version 19.0	UNFCCC

APPENDIX 2: CORRECTIVE ACTION REQUESTS, CLARIFICATION REQUESTS AND FORWARD ACTION REQUESTS (CAR/CL/FAR)

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

FAR ID	XX	Section no.	E.2	Date : DD/MM/YYYY
Description of FAR				
There is no FAR from the validation/previous verification of the project activity				
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.	4.1	Date: 07-December-2022
Description of CL				
Section 1.11 of monitoring report is found inconsistent with monitoring report template V. 4.1. Kindly Clarify.				
Project participant response				**Date:** 09-December-2022
Section 1.1 of monitoring report is now consistent with the monitoring report template V 4.1.				
Documentation provided by project participant				
Monitoring report version 02 dated 09-December-2022				
DOE assessment				**Date:** 11-December-2022
Assessment team verified that; Section 1.11 of monitoring report is now consistent with VCS MR template V. 4.1. **Hence CL is closed.**				

Table 3. CAR from this verification:

Project Implementation Status

CAR ID	01	Section no.	4.1	Date: 07-December-2022
Description of CAR				
During review of monitoring report following inconsistencies observed: 1. During document review it was observed that, submitted copy of no double accounting declaration is not consistent with current monitoring period. Hence, CAR is raised. 2. Date format is inconsistent with monitoring report template V.4.1 throughout monitoring report. Correction sought.				
Project participant response				**Date:** 09-December-2022
1. Revised copy of no double counting declaration is now consistent with current monitoring period and same has now been provided to the assessment team. 2. Date format is now consistent with monitoring report template V.4.1 throughout monitoring report				
Documentation provided by project participant				
1. copy of no double counting declaration 2. monitoring report version 2.0 dated 09-December-2022				
DOE assessment				**Date:** 11-December-2022
1. Assessment team has found that, PP has provided the; No double counting declaration dated: 10-November-2022 for current monitoring period. Hence, CAR is closed. 2. Assessment team has verified that; Date format is found consistent in revised monitoring report. **Thus, CAR is closed.**				

CAR ID	02	Section no.	4.4	Date: 07-December-2022
Description of CAR				
1. During document review it is found that, PP has not provided the JMRs for AGMPL. However, complete JMR for another site were found missing. Thus, Correction sought. 2. PP has not provided the complete invoice. Kindly submit. 3. Assessment team observed that, PP has not provided appendix no. in monitoring report.				
Project participant response				**Date:** 09-December-2022
1. AGMPL is belongs to Kutch region of Gujrat and for that region generation statements are now provided which consists the invoice and generation details of project activity, 2. Complete invoices are now provided to assessment team 3. Appendix number in monitoring reports is now added.				
Documentation provided by project participant				
1. Generation statements for AGMPL 2. Invoices /generation statements 3. monitoring report version 2.0 dated 09-December-2022				
DOE assessment				**Date:** 11-December-2022
1. Assessment team has verified that, complete JMR is now submitted by PP. Hence, CAR is closed. 2. PP has submitted the complete invoices to assessment team. 3. Assessment team verified that; PP has updated the appendix no. in revised monitoring report. **Hence, CAR is closed.**				

CAR ID	03	Section no.	4.5	Date: 07-December-2022
Description of CAR				
1. Formula to calculate the emission reduction is found missing in monitoring report. Correction requested.				
Project participant response				Date: 09-December-2022
Formula to calculate emission reduction is now provided in section 5.4 of the monitoring report.				
Documentation provided by project participant				
monitoring report version 2.0 dated 09-December-2022				
DOE assessment				Date: 11-December-2022
Project proponent is now added the formula to calculate emission reduction in revised monitoring report. **Hence, CAR is closed.**				

Table 4. FAR from this verification

FAR ID	XX	Section No.		Date : DD-Month-YYYY
Description of FAR				
There is no FAR from this verification				
Project participant response				Date : DD-Month-YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				Date: DD-Month-YYYY
NA				

APPENDIX 3: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS

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.	Lead Auditor/Technical Expert	OR	Takarkhede	Atul	TQC-Outsourced entity	Yes	Yes	Yes	Yes

2.	Auditor/Technical Expert	OR	Pundlik	Deepak	TQC-Outsourced entity	Yes	Yes	Yes	Yes

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 (TR) / Technical Expert (TE)	EI	Xue	Denny	Applus+ Certification
2.	Approver	IR	Calle de Miguel	Agustin	Applus+ Certification

Short CVs of the Team:

1. **Dr. Atul Takarkhede** is Ph.D. (Environmental Sciences) from Institute of Science, RTM Nagpur University, Nagpur, and he has already published different technical papers related to environmental sciences. He counts with more than 11 years of experience in field of Environmental Auditing, consulting and accreditation. He is an expert in ISO 9001-14001, CO2/GHG Reporting, Carbon Foot Print, Energy, Water and Waste Management reporting for organizations' environmental performance. His professional portfolio is mainly related with carrying out EIA, conducting QA/QC of EIA Reports; conducting environmental/water audits; NABET requirements appliance, functional area expert in Water Pollution & Solid & Hazardous Waste management among others. Furthermore, he counts with solid experience on CDM-VCS-GS consultancy and auditing. Currently he is associated with True Quality Certifications Private Limited and empanelled with Applus+ Certification to carry out GHG audits in the aforementioned schemes.

2. **Mr. Deepak Pundlik** have 15 years of experience in climate change, waste management and environmental management. After completing Masters in Environment Sciences from Pune university, He has worked in waste management field. As a GHG consultant , He handled more than 50 projects under renewable energy, waste management sectors during his stint with companies - MITCON and Thermax. Post Thermax, Deepak was involved in organic farming research project with Tata Institute of Social Sciences. As a GHG auditor, He has validated/verified projects under CDM/VCS/GS and GCC mechanisms from renewable energy, energy demand, waste management sectors handling more than 15 projects. Mr. Deepak Pundlik is based in Indore, India. Mr. Deepak Pundlik participate as part of the Audit Team as Auditor and Technical Expert for the assessment.

3. **Mr. Denny Xue** (Master's Degree in Environmental Engineering, Bachelor's Degree in Thermal Engineering) is an Auditor appointed by Applus+ LGAI for the GHG project assessment, auditing and technical review. He has more than 6 years of work experience in CDM/GS4GG/VCS project assessment and technical review with Applus+. Before he joined Applus+ LGAI, he has been working for Shanghai Chuanji Investment and Management which is a CDM consultancy company as a project manager for CDM project development. Mr. Denny Xue is based in Shanghai, China. Mr. Denny Xue participates in the project's technical review team.

APPENDIX 4: ABBREVIATIONS

Abbreviations	Full texts
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEA	Central Electricity Authority
CL	Clarification request
CM	Combined Margin
CMS	Central Monitoring system
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EF	Emission Factor
EIA	Environmental Impact Assessment
ER	Emission Reductions
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GWP	Global Warming potential
JMR	Joint Meter Reading Report
PP	Project Participant
VCS	Verified Carbon Standards
VCU	Verified Carbon Unit(s)

APPENDIX 5: CALIBRATION DETAILS

The details of the energy meters and their calibration details are provided in the table below

Name of the SPVs	Feeder Details	Meter Serial No.	Accuracy Class	Make	Date of Calibration	Due date of calibration[4]	Calibration compliance
Wind Three Renergy Private Limited	Feeder-2	LT-0702-A (Main Meter)	0.2 s	L & T	13/06/2019	12/06/2024	No Delay observed in scheduled calibration
		LT-0716-A (Check Meter)			13/06/2019	12/06/2024	
	Feeder-4	LT-0746-A (Main Meter)			13/06/2019	12/06/2024	
		LT-0750-A (Check Meter)			13/06/2019	12/06/2024	
Wind One Renergy Private Limited	Feeder-5	LT-0754-A (Main meter)	0.2 s	L & T	13/06/2019	12/06/2024	
		LT-0756-A (Check Meter)			13/06/2019	12/06/2024	
	Feeder-9	LT-0782-A (Main Meter)			13/06/2019	12/06/2024	
		LT-0783-A (Check Meter)			13/06/2019	12/06/2024	
Adani Green Energy (MP) Limited	Feeder-304	RE-0026-A (Main Meter)	0.2 s	L & T	07/06/2019	06/06/2024	
		RE-0037-A (Check Meter)			27/05/2019	26/05/2024	
		GJU77231 (Standby Meter)	0.2 s	Secure	11/06/2019	10/06/2024	
	Feeder-305	RE-0043-A (Main Meter)	0.2 s	L & T	27/05/2019	26/05/2024	
		RE-0027-A (Check Meter)			07/06/2019	06/06/2024	
		GJU77230 (Standby Meter)	0.2 s	Secure	11/06/2019	10/06/2024	

[4] At the time of commissioning, newly calibrated meters were installed. The calibration frequency is once in five years, and the calibrations are valid during the current monitoring period. Hence, no delay in error factor is applicable during the current monitoring period.