Wind Power Project by Rajasthan Gum Private Limited (EKIESL-CDM.September-12-02)

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Summary:

Verification purpose: The main purpose of this project activity is to generate clean form of electricity through renewable energy sources. The proposed VCS project activity is the installation of 7 WTGs having total installed capacity of 14.7 MW. The project will generate energy through renewable source i.e. wind which is a clean energy generating technology, replaces anthropogenic emissions of greenhouse gases (GHG's), which is estimated to be approximately 24,923 tCO2e per year, thereon displaces 26,008 MWh amount of electricity from the generation-mix of power plants connected to the NEWNE regional grid, which is mainly dominated by thermal/fossil fuel based power plant. The technology/ machines have been supplied by Suzlon Energy Limited, India. The total VERs for the monitoring period is: 45,533 VERs. The present monitoring period for the project activity is : 28/09/2012 to 04/01/2015 (Both days included)

The project with its total capacity of 14.7 MW was commissioned on various dates (mentioned in Annexure- I of the monitoring report) and the first WTG was commissioned on 28th Sep, 2012.

A risk based approach has been followed to perform this verification activity. In the course of versification, 03 Corrective Action request (CAR) and 00 Clarification Requests (CLs) were raised and successfully closed. 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 APPLUS with sufficient evidence to verify the fulfilment of the stated criteria of VCS.

Validation purpose: The main purpose of this project activity is to generate clean form of electricity through renewable energy sources. The project is registered under CDM mechanism (reference number: 10026). The present validation (gap validation) is under VCS mechanism and assessment of clause 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4 and 1.13 of the VCS Project Description Template. The same is in line with Para 3.11.10 of VCS standard version 3.5.

A risk based approach has been followed to perform this verification activity. In the course of gap validation, 01 Corrective Action request (CAR) and 00 Clarification Requests (CLs) were raised and

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1 INTRODUCTION

1.1 Objective

LGAI Technological Center S.A. has been appointed by "EKI Energy Services Limited" to perform the gap validation and verification of the "Wind Power Project by Rajasthan Gum Private Limited (EKIESL-CDM.September-12-02)" under VCS standard and guideline. The objective of this gap validation and verification activity is to have an independent third party for the assessment of the VCS project design clause (1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4 and 1.13) and Monitoring 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 "AMS.I.D, Version 17, EB 61"
- the project's monitoring plan is assessed against "AMS.I.D, Version 17"
- 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 and standard version 3.5
- CDM Validation and Verification Standard version 09
- CDM Project Standard version 09
- CDM Project Cycle Procedure version 09
- VCS standard v3.5
- VCS guideline v3.5
- VCS VVM version 3.1

Gap Validation and verification is a requirement for all VCS retroactive projects (registered under different GHG mechanism) and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of verified emission reductions (VERs).

1.2 Scope and Criteria

The scope of the gap validation and verification is the independent and objective review of the Project Document (PD- clause: 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4 and 1.13) and Monitoring report (MR). The PD and MR are reviewed against the relevant criteria (see 1.1) and decisions by the CDM Executive Board and VCS executive board, including the approved baseline and monitoring methodology. The validation and verification was based on the guidance given in the CDM Validation and Verification Standard version 09, CDM Project Standard version 09, CDM Project Cycle Procedure version 09, VCS guideline and standard version 3.5 and VCS VVM version 3.1.

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 PD and MR. The main focus of the assessment team is to identify the significant risks for the project implementation and the generation of VERs. The validation and 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 project design and monitoring report combined.

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

1.3 Level of Assurance

The verification and gap validation has been planned and organized to achieve a Reasonable Level of assurance as per the requirement of VCS.

1.4 Summary Description of the Project

The purpose of the project activity is to generate power using renewable energy source (wind). The project activity generates electricity using wind potential and converts it into kinetic energy using Wind turbines, which drives the alternators to generate energy.

Verification purpose: The main purpose of this project activity is to generate clean form of electricity through renewable energy sources. The proposed VCS project activity is the installation of 7 WTGs having total installed capacity of 14.7 MW. The project will generate energy through renewable source i.e. wind which is a clean energy generating technology, replaces anthropogenic emissions of greenhouse gases (GHG's), which is estimated to be approximately 24,923 tCO_{2e} per year, thereon displaces 26,008 MWh amount of electricity from the generation-mix of power plants connected to the NEWNE regional grid, which is mainly dominated by thermal/fossil fuel based power plant. The technology/ machines have been supplied by Suzlon Energy Limited, India. The total VERs for the monitoring period is: 45,533 VERs. The present monitoring period for the project activity is: 28/09/2012 to 04/01/2015 (Both days included)

The project with its total capacity of 14.7 MW was commissioned on various dates (mentioned in Annexure- I of the monitoring report) and the first WTG was commissioned on 28th Sep, 2012.

A risk based approach has been followed to perform this verification activity. In the course of versification, 03 Corrective Action request (CAR) and 00 Clarification Requests (CLs) were raised and successfully closed. 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 APPLUS with sufficient evidence to verify the fulfilment of the stated criteria of VCS.

Validation purpose: The main purpose of this project activity is to generate clean form of electricity through renewable energy sources. The project is registered under CDM mechanism (reference number: 10026). The present validation (gap validation) is under VCS mechanism and assessment of clause 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4 and 1.13 of the VCS Project Description Template. The same is in line with Para 3.11.10 of VCS standard version 3.5.

A risk based approach has been followed to perform this verification activity. In the course of gap validation, 01 Corrective Action request (CAR) and 00 Clarification Requests (CLs) were raised and successfully closed. The review of the project description and additional documents related to baseline

and monitoring methodology; the subsequent background investigation, follow-up interviews and PP have provided APPLUS with sufficient evidence to verify the fulfilment of the stated criteria of VCS.

2 VERIFICATION PROCESS

2.1 Method and Criteria

Validation and Verification Scope: The scope is defined as an independent and objective review of the project design document (PD: relevant clause: 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4 and 1.13) and Monitoring report (MR). The PD and 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 and guideline version 3.5, including the approved baseline and monitoring methodology AMS.I.D version 17. The validation and verification was based on the requirements in the Validation and Verification Standard (VVS version 09), project standard version 09, project cycle procedure version 09 and VCS guideline and standard version 3.5

The validation and 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 project document and the Monitoring period.

Validation and Verification Process: The project assessment is based on the "Clean Development Mechanism Validation and Verification Standard version 09.0 and VCS standard and guideline version 3.5 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:

I A desk review of the project design documentation (clause: 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4 and 1.13) and monitoring report;

II Follow-up interviews with project stakeholders;

III The resolution of outstanding issues and the issuance of the final verification/gap validation report and opinion.

The prepared gap validation and 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 for registration and issuance of retroactive credits as per Para 3.11.10 of VCS standard version 3.5.

In order to ensure transparency, assumptions must be clear and stated explicitly and background material must also be referenced. Applus+ LGAI 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.

The gap validation and verification checklist consists of three tables. The different columns in these tables are described in the tables below

Gap Validation/Verification Checklist Table 1: Mandatory Requirements			
Requirement	Reference	Conclusion	Cross reference
The requirements which the project must meet.	Gives reference to the legislation or agreement where the requirement is found.	This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) of risk or non-compliance with stated requirements. The corrective action requests are numbered and presented to the client in the gap validation report.	Used to refer to the relevant checklist questions in Table 2 to show how the specific requirement is validated. This is to ensure a transparent validation process.

Gap Validation/Verification Checklist Table 2: Requirement checklist				
Checklist Question	Reference	Comment	Draft Conclusion	Final Conclusion
The various requirements in Table 2 are linked to checklist questions the project should meet. The checklist is organized in several different sections. Each section is then further sub-divided. The lowest level constitutes a checklist	Gives reference to documents where the answer to the checklist question or item is found.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	Conclusions are presented based on the assessment of the first PD and MR version. This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification is used when the validation team has identified a need for further clarification. Forward action request to highlight issues related to project implementation that requires review during the	Conclusions are presented in the same manner based on the assessment of the final PD and MR version and further documents including assumptions presented in the documentation.

question.			first verification.	

Gap Validation/Verification Checklist Table 3: Resolution of Corrective Action and Clarification Requests			
Draft report clarifications and corrective action requests	Ref. to checklist question in table 1&2	Summary of project owner response	Validation/Verification conclusion
If the conclusions from the draft Validation are either a Corrective Action Request or a Clarification Request, these should be listed in this section.	Reference to the checklist question number in Table 1&2 where the Corrective Action Request or Clarification Request is explained.	The responses given by the Client or other project participants during the communications with the validation team should be summarized in this section.	This section should summarize the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".

The detail of corrective action/clarification request/ forward action request is presented as Appendix 2 of this report.

Appointment of the assessment team

According to the sectoral scopes / technical area and experiences in the sectoral or national business environment, Applus+ LGAI has composed a project assessment team in accordance with the appointment rules in Applus+ LGAI. The composition of assessment team has to be approved by the Applus+ LGAI ensuring that the required skills are covered by the team. The four qualification levels for team members that are assigned by formal appointment rules as below:

- Leader Auditor (LA)
- Auditor (A)
- Auditor Trainee (T)
- Technical Experts (E)
- Internal Technical Review (ITR)

It is required that the sectoral scope / technical area related to the methodology has to be covered by the assessment team.

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

Document review

The Project Document and Monitoring report submitted by the Client was reviewed against the approved methodology 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

Follow-up interviews

A site visit is conducted by Applus+ LGAI performed interviews, telephone conferences, and physical site inspection with project stakeholders to confirm selected information and to resolve issues identified in the document review. The detail is provided in this report in the below section

Resolution of Clarification and Corrective Action Request

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

The final PD version 01 and MR Version 02 submitted by PP on 05/07/2016 and 22/07/2016 respectively serves as the basis for the final assessment presented. Additional changes to the project during the gap validation and 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 gap validation and verification of the final documentation including the final verification report (includes gap validation) 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 validation/verification opinion and relevant documents are submitted to the VCS secretariat through the VCS web-platform

2.2 Document Review

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

2.3 Interviews

The site visit for the project activity is carried out from 18/07/2016 to 19/07/2016 which covered both the sites (includes all the locations)in the state of Maharashtra and Rajhsthan. No sampling procedures were adopted and all the WTGs were covered in both the locations for the present project activity. No sampling procedures were adopted either in document verification and all the document were cross checked to ensure conservative estimation of emission reduction. Kindly find below name of the person interviewed (during onsite and telephonic interview later) for both the sites.

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Sharma	Mr. Satish	Site In-charge: Rajhsthan Site	18/07/2016	Implementation of the project, monitoring and emission reduction calculations Baseline emission calculation, achieved emission reduction, monitoring process and discussion on host country criteria.	Mr. Sukanta Das
2	Gore	Mr. Atul	Site In-charge: Maharashtra Site	19/07/2016	Implementation of the project, monitoring and emission reduction calculations Baseline emission calculation, achieved emission reduction, monitoring process and discussion on host country criteria.	Mr. Sukanta Das
3	Dutta	Mr. Bhaskar	Manager: EKI energy services limited	-	Telephonic interview : Monitoring practices, Emission reduction calculation and Implementation status of the project activity.	Mr. Sukanta Das

2.4 Site Inspections

Duration of on-site inspection: 18/07/2016 to 19/07/2016				
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.	Rajhsthan and Maharashtra	18 to 19/07/2016	Mr. Sukanta Das

2.5 Resolution of Findings

The objective of this phase of the gap validation and Verification was to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified for Applus+ LGAI's positive conclusion on the project design and Monitoring report. The Corrective Action Requests and Clarification Requests raised by Applus+ LGAI were resolved during communications between the Client and Applus+ LGAI to guarantee the transparency of the validation 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	00	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
- Demonstration of additionality	00	00	00
- Emission reductions	00	01	00
- Monitoring plan	00	00	00
Others (please specify)-Matter related to break down details	00	01	00
Others (please specify)- Matter related to project documentation		01	
Total	00	Verification: 03 Gap Validation: 01	00

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

2.5.1 Forward Action Requests

No FAR was raised during this gap validation and verification process.

2.6 Eligibility for Validation Activities

The Validation and verification body holds accreditation to carry out both Gap validation and verification activities. The accreditation scope can be checked from the below link:

http://cdm.unfccc.int/DOE/list/DOE.html?entityCode=E-0032

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The present project activity is registered under CDM mechanism (UN reference number: 10026). The project can be traced via link (http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1408957529.49/view)

The gap validation is performed for the project activity as per Para 3.11.10 of VCS standard version 3.5. As per the requirement of this template following are the observation of the assessment team:

1. The project is registered under CDM mechanism and UN reference number of the project is 10026. The project title is Wind Power Project by Rajasthan Gum Private Limited (EKIESL-CDM.September-12-02)
2. The project is eligible under Para 3.11.10 of VCS standard version 3.5.
3. Assessment team adopted a step wise procedure to assess the respective clause required for gap validation under VCS vide Para 3.11.10 of VCS standard version 3.5:
    - Clause 1.2: According to the categorisation system of the Clean Development Mechanism, which is part of Green House Gas (GHG) program that has been approved by the VCS board, the project is categorised as:
      Type I: Renewable energy projects
      Category: Grid connected renewable electricity generation – AMS I.D., version 17

Assessment team checked the type and category of the project activity and found that the project is eligible under Type I and renewable category of project. Hence the project is eligible under Clause 1.2 of VCS PD.

- Clause 1.3: As per CDM registered PDD “EKI Energy Services Limited “is the project proponent. However, as per the requirement of VCS “the project owner should be considered as project proponent and hence DOE considered “Rajhsthan Gum private Limited as the project proponent. The name of the person, address and phone number is assessed correct for VCS (combined validation and verification) purpose. Hence, Clause 1.3 as depicted in the VCS PD for gap validation is acceptable to the assessment team.

- Clause 1.5: The start date of the project is considered as the commissioning date of the first WTGs (as per the Commissioning certificate of the WTGs) and the same is correct as per the definition of start date of VCS. The emission reduction is claimed from the commissioning date to the CDM registration date which is correct as per the requirement

of Para 3.11.10 of VCS standard version 05. Hence, Clause 1.5 as depicted in the VCS PD for gap validation is acceptable to the assessment team.

- Clause 1.6: The Project activity is commissioned on 28/09/2012 (Commissioning certificate is checked) hence starts date of PRE-CDM VCS crediting period is 28/09/2012. The project crediting period shall be a maximum of ten years which will be renewed at most twice.
- 28/09/2012 is the start date and 27/09/2022 will be the end date of the crediting period.
- Hence VCS crediting period is from 28/09/2012 to 27/09/2022 . Thus clause 1.6 as depicted in the VCS PD for gap validation is acceptable to the assessment team

- Clause 1.7: The emission reduction of the project activity is less than 300,000 tCO_2 e per annum and thus project falls under project category as per the requirement of VCS. Assessment team checked the annual emission reduction calculation to confirm that emission reduction of the project activity is less than 300,000 tCO_2 e per annum. The process involves in checking the baseline emission reduction calculation, project emission calculation and leakage emission calculation. For the present project activity baseline emission is calculated as per the requirement of the methodology which is depicted below:

  Formula Used:-

  $BE_y = EB \times EF_{NEWNE}$

  Where
  BE_y= Baseline emission for year 'y'
  EB = Energy Baseline; and
  EF_{NEWNE} = Emission factor for Northern Grid

Project emission and leakage emission is zero as per the requirement of the methodology. Hence Baseline emission= Emission reduction. The calculation of emission reduction is checked from the emission sheet and found correct. The emission reduction for the project is 24,923tCO2e and thus project activity qualifies as "project" scale.

- Thus clause 1.7 as depicted in the VCS PD for gap validation is acceptable to the assessment team.

- Clause 1.9: The project location (along with Latitude and longitude) of the project activity is as below:

Project Promoter's Name	**WTG No.**	**Village**	**Tehsil**	**District**	**State**	**Latitude**	**Longitude**
Rajasthan Gum	JTH-67	Yeldhari	Jath	Sangli	Maharashtra	N16 59' 28.4"	E75 12' 03.8"

Private Limited	JTH-152	Mendhgiri				N16 58' 26.7"	E75 14' 17.8"
	JTH-158					N16 58' 50.7"	E75 13' 35.5"
	JTH-183	Jath				N17 03' 09.4"	E75 15' 15.0"
	KD- 89	Kanod	Mohan garh-1	Jaiselmer	Rajasthan	N27 09' 38.2"	E71 07' 31.7"
	KD- 86					N27 09' 17.4"	E71 07' 00.1"
	KD- 84					N27 08' 29.2"	E71 05' 54.3"

Project Boundary:

As per Para 9 of AMS I.D., Version 17, the spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to.

Hence, all the WTG equipments, metering arrangements, connected sub-station & NEWNE grid, along with all the power plants connected to it, constitute the project boundary.

Assessment team checked the project location during the onsite visit and confirms that the above description is correct and accurate. The project boundary as presented in the PD is as per the site locations and also as per the CDM registered PDD. Thus clause 1.9 as depicted in the VCS PD for gap validation is acceptable to the assessment team.

- Clause 1.10: This is a Greenfield project. The project activity replaces the carbon intensive grid electricity. The proposed project activity effectively utilises renewable wind energy to generate electricity which will be feed into the coal intensive NEWNE Grid. Thereby the project activity reduces the dependence on fossil fuel based generation units and as there are no associated emissions with this project it contributes to the reduction of greenhouse gases (GHG) emissions. Assessment team checked the same during the onsite visit and also cross checked with CDM PDD and validation report. Thus clause 1.10 as depicted in the VCS PD for gap validation is acceptable to the assessment team.

- Clause 1.12.1: The ownership details of Rajhsthan Gum private Limited (project owner/ project participant) were checked using: Power agreement between owner and State Utility, Commissioning certificate and Purchase order of the WTGs. Thus clause 1.12.1 as depicted in the VCS PD for gap validation is acceptable to the assessment team.

- Clause 1.12.2: The project is registered under CDM and UNFCCC[1] (Registration ID - 10026). The project is also approved by the DNA and a copy of the approval is available on the UNFCCC page. Project Proponent has submitted undertaking that they will not claim same GHG emission reductions of the project from CDM and VCS. PP would not use net GHG emission reductions by the projects for compliance with emission trading program to meet binding limits on GHG emissions. Thus clause 1.12.2 as depicted in the VCS PD for gap validation is acceptable to the assessment team.

- Clause 1.12.3: Project has been registered with UNFCCC under Clean Development Mechanism program. Registration reference number is 10026. Project Proponent has submitted undertaking for not availing other forms of environmental credit for the same crediting period under consideration. Thus clause 1.12.3 as depicted in the VCS PD for gap validation is acceptable to the assessment team

- Clause 1.12.4: Project has been registered with UNFCCC under Clean Development Mechanism program, Registration reference number is 10026. PP also submitted undertaking for Project neither has any intends to generate any form of GHG related environmental credit for neither GHG emission reductions nor removals claimed under the VCS program. Thus clause 1.12.4 as depicted in the VCS PD for gap validation is acceptable to the assessment team

- Clause 1.13: As per VCS standard version 3.5: Grouped projects are projects structured to allow the expansion of a project activity subsequent to project validation. For the present project at this stage of validation there is no any plan for structural expansion of the project activity. Assessment team confirms that the project do not fall under a group project activity as the project is single project activity generating electricity from Wind technology and the same structure will be used for future verification as well. . No leakage involved as per the direction of AMS.I. D and CDM registered PDD. There is no commercially sensitive information which is being excluded for the project activity. All the information related to identify the scale of the project, applicability of the methodology, additionality, and baseline determination and emission reduction calculation is provided in the VCS PD and the same is assessed correct by the DOE. . Thus clause 1.13 as depicted in the VCS PD for gap validation is acceptable to the assessment team

The respective undertaking for Clause 1.12.2, 1.12.3 and 1.12.4 were not submitted to the assessment team. CAR was raised regarding the same and after submission of satisfactory documents the Non Conformity (=NC) is closed. The detail regarding the Non Conformity could be found in Appendix 2 of this report.

[1] http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1408957529.49/view

3.2 Methodology Deviations

The project activity used AMS.I.D version 17 which is as per the registered CDM PDD and thus no deviation is sought regarding the methodology. The project complies with all the requirement of the methodology and thus deviation to the methodology is not a requirement for the present project activity.

3.3 Project Description Deviations

The project is implemented as per the description in the CDM PDD and thus no technical or any other deviation is sought. The same is confirmed during the site visit and interview. Hence, the applicability of the methodology, baseline and additionality as mentioned in the CDM PDD will not undergo any change and thus deemed appropriate for the project activity.

3.4 Grouped Project

The project do not involve any addition of new project activity and thus the project do not falls under grouped project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

During the verification site visit it was concluded that the project is implemented as per the instruction of the registered PD and Final Validation report. During the current monitoring period it was observed that no unforeseen situation evolved which can impact the operation of the project activity. Scheduled maintenance was carried out as per the instruction of the manufacturer and the same is acceptable to the assessment team.

It was observed that the monitoring plan was implemented as per the requirement of the registered PD, FVR and approved methodology AMS.I.D version 17. The organisational role and responsibility as mentioned in the registered PD is followed onsite. The calibration for one of the site was delayed for the monitoring period and thus appropriate error factor was applied to find the conservative estimate of emission reduction. All the emergency preparedness as mentioned in the registered PD is followed onsite and no discrepancies were found regarding the same.

The project is not involved in any other form of GHG emission program and VERs generated from this verification will not be used for other trading program to avoid any kind of double counting. The same is confirmed by the PP during the verification site visit. Assessment team also conducted independent review regarding the same and found that the statement of the PP is accurate and project is not involved in any other kind of GHG trading for the present verifications/monitoring period.

It was also observed during the verification process is that project is not rejected by any other GHG program around the world. The project is registered under CDM mechanism and the same is checked by the assessment team from UN web page (http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1408957529.49/view)

The assessment team observed that the project is in line with the registered PD, FVR and approved methodology and thus no clarification/deviation is sought

However, during verification CAR 1 related to feeder wise detail of WTGs was raised and closed successfully during the course of verification. The detail of the CAR can be obtained in Appendix 2 of this report.

4.2 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 CDM PDD. 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 CDM PDD
Findings	CAR 3 was raised during the verification process. The detail closure of the CAR could be obtained in Appendix 2 of this report.
Conclusion	The baseline Emissions for a given year is calculated by multiplying the energy baseline (EB) with the regional grid emission factor. The regional grid in this case would be the 'Northern Grid' **Formula Used:-** $BE_y = EB \times EF_{NEWNE}$ Where BE_y= Baseline emission for year 'y' EB = Energy Baseline; and EF_{NEWNE} = Emission factor for Northern Grid The verification team has checked the entire monthly JMR report and invoices applicable for the monitoring period and found all the parameters are monitored and recorded as per the revised monitoring plan in the registered PDD. The verification team has crosschecked the emission reduction sheet and monitoring report data with the JMR sheet and invoice bills and found all the values are matching.

4.3 Quality of Evidence to Determine GHG Emission Reductions and Removals

Means of verification	The verification team checked the break down log for the monitoring period. During the verification site visit the feeder wise location of the WTGs is also checked. The Calibration details are also checked.
Findings	CAR 2 was raised during the verification process. The description of the CAR and its closure is described below in Appendix 2 of this report
Conclusion	The metering arrangement is tri-vector bi-directional energy meters (main and check) at the State Electricity Board (SEB) substation. These meters record several parameters including electricity exported & imported. These electricity meters are being used by state electricity board for JMR (Joint Meter Reading) electricity generation statements. All the meters are of same accuracy class i.e. 0.2S as per the requirement of the registered PDD. On-site visit and interview with O&M personnel also conforms the same. The break down log is checked and found that the WTG undergone scheduled maintenance and break down. No unforced error observed and feeder wise WTGS location is also checked and found correct.

4.4 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	
1.	No risk	Nil	Not applicable	Complete verification of all the values indicated in the emission reduction spreadsheet in documents such as JMR/Invoices. No sampling approach adopted and complete site and verification is performed by the assessment team.

5 VERIFICATION CONCLUSION

Applus+ LGAI has been engaged by EKI energy Services Limited to perform the 1st periodical verification of the "Wind Power Project by Rajasthan Gum Private Limited (EKIESL-CDM.September-12-02)"

The management of the project participant/owner is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project's Monitoring Plan in the registered CDM PDD and the applied methodology AMS.I.D version 17.

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

- the project is operated as planned and described in the project document;
- the monitoring plan is as per the applied methodology;
- the monitoring process in Monitoring Report is as per the PDD
- 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.

Verification period: 28/09/2012 to 04/01/2015 (Both days included)

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

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
28/09/2012 to 31/12/2012	751	0	0	751
01/01/2013 to 31/12/2013	21,599	0	0	21,599
01/01/2014 to 31/12/2014	23,054	0	0	23,054
01/01/2015 to 04/01/2015	129	0	0	129
Total	45,533	0	0	45,533

APPENDIX 1: DOCUMENTS REVIWED DURING VALIDATION AND VERIFICATION

No.	Author	Title	References to the document	Provider
1	NA	Commissioning certificates of the WTGs implemented in the project site.	NA	Project participant
2	NA	Contract of the project participant with the DOE	Contract document signed between PP and DOE	Project participant
3	NA	Technical specifications of wind turbine generators from manufacturers	Manufacturer technical specifications	Project participant
4	NA	Power Purchase agreement for the project activity	NA	Project participant

5	NA	Registered PDD version 04	03 July 2014	Project participant
6	NA	Registered Final Validation report version 03	01 August 2014	Project participant
7	NA	Emission Calculation sheet	22 July 2016	Project participant
8	NA	The operational lifetime of the project activity from the manufacturer=(Technical specefications)	Manufacturer technical specifications	Project participant
9	NA	MERC orders: http://www.mercindia.org.in/ RERC orders: http://rerc.rajasthan.gov.in/ RBI: Reserve Bank of India www.rbi.org.in Ministry of Environment and forest: www.envfor.nic.in UNFCCC www.cdm.unfccc.int CEA: Central electricity authority www.cea.nic.in Income tax act 1961 http://law.incometaxindia.gov.in/DIT/ VCS: Verified Carbon Standard www.v-c-s.org	Reference link is provided.	Independent Search
10	NA	Tools/ guidelines used in the project activity • Tool to determine the remaining	UNFCCC CDM web site	UNFCCC

		lifetime of the project activity in line with Annex 15 EB 50 • Tool to calculate the emission factor for an electricity system version 03 • Glossary of CDM terms version 07 • VCS verification report template version 03		
11	NA	JMR records for the complete monitoring period	JMR records	PP
12	NA	MR version 01 MR version 02	05/07/2016 22/07/2016	PP
13	NA	Invoices for the complete monitoring period	Invoice	PP
14	NA	Break down details of the complete monitoring period	Log sheet	PP

APPENDIX 2:

CLARIFICATION REQUESTS, CORRECTIVE ACTION REQUESTS (CAR/CL/FAR)

GAP VALIDATION FINDINGS:

CAR ID	01	**Section no.**		**Date:**20-07-2016
Description of CAR				
During the desk review it was observed that following undertaking is missing: 1. Project Proponent will not claim other forms of environmental credit for the same crediting period under consideration. 2. Project neither has not intends to generate any form of GHG related environmental credit for GHG emission reductions or removals claimed under the VCS program. The supporting documents are absent and thus clause 1.12.2, 1.12.3 and 1.12.4 in the VCS PD is thus reserved till further analysis. Corrective action is sought.				

Project participant response	**Date:**22/07/2016
Supporting documents has been submitted to the Validation team in support of above declarations from PP.	
Documentation provided by project participant	
The undertaking were submitted to the DOE	
DOE assessment	**Date:** 23/07/2016
The undertakings dated 04 July 2016 are submitted to the assessment team. The under takings clearly shows that the project will not claim any form of GHG emission for the present crediting period. The Project neither has not intends to generate any form of GHG related environmental credit for GHG emission reductions or removals claimed under the VCS program. Based on the submission of proper documentation and modification in section 1.9 of the MR for clause 1.12.2, 1.12.3 and 1.12.4 are now correct and thus the CAR is closed.	

VERIFICATION FINDINGS:

CAR ID	01	**Section no.**		**Date:** 20-07-2016
Description of CAR				
During the site visit and subsequent document review it was observed that the details of feeder wise WTGs location is missing in the MR. Corrective action is sought in the respective section of the MR				
Project participant response				**Date:**22/07/2016
Feeder wise WTG Location has been mentioned in the Revised MR Version 02.				
Documentation provided by project participant				
MR Version 02.				
DOE assessment				**Date:** 23/07/2016
The Feeder wise WTGs locations are now mentioned clearly in the MR version 02. The same is as per the details checked onsite. Hence the CAR is closed based on the revision of the MR.				

CAR ID	02	**Section no.**		**Date:**21-07-2016
Description of CAR				
The breakdown details of the WTGs are missing in the MR. Moreover, the supporting document regarding the breakdown details are also not provided to the assessment team. Corrective action is sought in the respective section of the MR and supporting documents for further analysis.				
Project participant response				**Date:**22/07/2016
The breakdown details have been mentioned in Appendix 2 of Revised MR Version 02. Supporting document regarding breakdown details has been submitted with MR Version 02.				
Documentation provided by project participant				
Break down log sheet				
DOE assessment				**Date:** 23/07/2016
The break down details log sheet was checked. Scheduled maintenance as per the manufacturer specifications and visual maintenance were carried out during the monitoring period. No forced incident occurred and this calculated emission reduction is conservative. The details are now included in the revised MR. CAR is thus closed.				

CAR ID	03	**Section no.**		**Date:**20-07-2016
Description of CAR				
The apportioning calculation for the month of Jan 2015 (i.e. 4 days) and September 2012 (3 days) is not provided in the MR. The calculation approach is missing. Corrective action is sought in the respective section of the MR.				
Project participant response				**Date:**22-07-2016
In case the monitoring period and the billing cycle date do not match, then a conservative approach will be adopted to monitor/calculate the net electricity supplied to the grid. For this purpose, the net electricity exported for that particular month, is being multiplied with the ratio of export value for the days covered in current monitoring to total export value taken at controller end, and will be subtracted from total electricity import of that particular month for obtaining net electricity export, hence it is conservative approach. It is to be noted here that apportioning has been done only in Month of Jan 2015 following the above mentioned approach. The first WTG got commissioned in Sept 2012, hence the net electricity values for that particular month has been taken from the JMR Values (crosschecked from respective month's				

invoice) which is against the net electricity generation after the actual commissioning.	
Documentation provided by project participant	
MR version 02	
DOE assessment	**Date:** 23/07/2016
The apportioning approach is checked by the assessment team and found that the same is in line with the standard formula and approach for emission reduction calculation. The estimation is conservative and thus the CAR is closed.	

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.	Team Leader/Lead Assessor	OR	DAS	SUKANTA	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)	IR	Sitjes	Miquel	Applus+ LGAI
2	TR in Training	IR	Rodrigo Vega	Ms. Natalia	Applus+ LGAI
2.	Approver	IR	Sendin	Juan	Applus+ LGAI

Short CVs of the Team:

1. Mr. Sukanta DAS, has done M. SC in (Electronics and Photonics) and M. Tech in (Energy technology) from Tezpur Central University/ Indian Institute of technology Bombay in India. He is a certified lead auditor for ISO 14001 EMS LA and ISO 9001 QMS LA from International registry for Certified Auditors (IRCA) and Certified Lean Management practitioner from Quality Council of India (QCI). He has more than Nine(9) years of working experience at TUV NoRD/ Re-consult/CRA/APPLUS certifications under various categories of projects stating from Renewable to waste to supercritical projects. He was JI/ CDM Lead Assessor in TUV NoRD and was involved in more than 100 CDM validation and verifications activities in Gold Standard, VCS, CDM projects as a team leader/technical reviewer / validator / verifier covering the sectoral scope 1, 13 technical areas 1.2/1.1/13.1. Currently he is associated with True Quality Certifications Private Limited and is empanelled with APPLUS certification to carry out GHG audit.

2. Mr. Miquel Sitjes Cabanas has a Bachelor Science degree in Chemistry by the Universidad de Barcelona - Spain (1975). He has 15 years of experience in a Spanish chemical group company specialized in the manufacturing of raw chemical products, where he worked as the Manager of Production and Quality and Environmental Control. He also worked in the Spanish pharmaceutical industry for 7 years as Quality, Manufacturing and Environmental Manager. Currently, he works for Applus+ LGAI Technological Center since 1999. Since 2006, he is the Technical Manager of Applus+LGAI, working under quality, and environmental standards such as ISO 9001, ISO 14001, GHG Verification, CDM, VCS and GS.

3. Ms. Natalia Rodrigo Vega has a Bachelor's Degree on Environmental Engineering and Master´s Degree on Environmental and Quality Management System (under ISO 9001 and 14001). She Works in Applus Environmental and Quality Management Systems Department since March 2012, being specially involved on technical support tasks related to CDM-VCS and GS Standards, among others (i.e. GHG verification and Proyecto Clima)

APPENDIX 4: ABBREVIATIONS

Abbreviations	Full texts
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction(s)
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
MERC	Maharashtra Electricity regulatory commission
JMR	Joint Metering reading

RBI	Reserve Bank Of India
RERC	Rajasthan Electricity regulatory commission
PP	Project Participant

Annex 1: Calibration details of the meters

S.N	HTC No	Project Proponent	Main Meter No and Check Meter no Accuracy class	Make	Calibration date	Remarks
1.	WEG-Feeder- 1 (Jath)	Rajasthan Gums Pvt. Ltd	Main Meter no: 13813605 0.2 s Check Meter no: 13813606 0.2 s	Elster A1800 Elster A1800 Elster A1800	01/06/2013 01/06/2013	Replacement of CT due to change in CT Ratio Meter calibration report mentioned that meters were running satisfactorily.
2.	WEG-Feeder- 2 (Jath)	Rajasthan Gums Pvt. Ltd	Main Meter no: 14953584 0.2 s Check Meter no: 14953585 0.2 s	 Elster A1800	01/06/2013 18/11/2013	Replacement of CT due to change in CT Ratio Meter calibration report mentioned that meters were running satisfactorily. Meter was found “Hanged” hence, it was replaced by meter Make- Elster, Sr No. 16268014.
3.	WEG-Feeder- 1 (Jath)	Rajasthan Gums Pvt. Ltd	Main Meter no: 13813605 0.2 s Check Meter no:	Elster A1800 Elster A1800	11/06/2014 11/06/2014	The errors of meter was found to be within permissible limit as per the accuracy class.

4.	WEG-Feeder- 2 (Jath)	Rajasthan Gums Pvt. Ltd	13813606 0.2 s Main Meter no: 14953584 0.2 s Check Meter no: 16268014 0.2 s	Elster A1800 Elster A1800	11/06/2014 11/06/2014	The errors of meter was found to be within permissible limit as per the accuracy class.
5.	132 KV (Kaladungar) 33 KV (Kaladungar)	Rajasthan Gums Pvt. Ltd	Main Meter no: UPP31771 0.2 s Check Meter no: UPP31772 0.2 s Main Meter no: UPP31769 0.2 s	Secure Secure Secure	Calibration Test done by C & I Systems on 13/12/2012 for meters installed during commissioning Calibration Test done by C & I Systems on 13/12/2012	Meter calibration report mentioned that meters were running satisfactorily

			Check Meter no: UPP31770 0.2 s	Secure		
6.	132 KV (Kaladungar) 33 KV (Kaladungar)	Rajasthan Gums Pvt. Ltd	Main Meter no: UPP31771 0.2 s Check Meter no: UPP31772 0.2 s Main Meter no: UPP31769 0.2 s Check Meter no: UPP31770 0.2 s	Secure Secure Secure Secure	Calibration Test done by Yadav Measurements Pvt. Ltd on 17/01/2014 Calibration Test done by Yadav Measurements Pvt. Ltd on 18/01/2014	Meter calibration report mentioned that meters were running satisfactorily

7.	132 KV (Kaladungar) 33 KV (Kaladungar)	Rajasthan Gums Pvt. Ltd	Main Meter no: UPP31771 0.2 s Check Meter no: UPP31772 0.2 s Main Meter no: UPP31769 0.2 s Check Meter no: UPP31770 0.2 s	Secure Secure Secure Secure	Calibration Test done by C & I Systems on 25/12/2014 Calibration Test done by C & I Systems on 26/12/2014	Meter calibration report mentioned that meters were running satisfactorily

Meters at Jath, Maharashtra should have been calibrated on 01/06/2014, but PP has carried out calibration on 11/06/2014 and the meters have been working satisfactorily. Likewise delay in Calibration is observed for Kaladundar, Rajasthan site. Hence maximum permissible error factor has been applied for those particular months, as per the accuracy class of the meters in order to retain conservativeness.