

VALIDATION REPORT 100 MW GRID CONNECTED WIND POWER PROJECT IN JAMNAGAR GUJARAT, INDIA



Document Prepared By Earthood Services Private Limited

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Summary:

Earthhood Services Private Limited (hereafter referred to as ESPL) has been contracted Infinite Solutions to conduct the validation of the project - "100 MW grid connected Wind Power project in Jamnagar Gujarat, India" (VCS pipeline ID- PL2019)", with regard to the relevant requirements of VCS programme guidelines and standard (VCS standard version 3.7, VCS and VCS program guide version 3.7). Relevant requirements of the UNFCCC for CDM project activities, as well as criteria for consistent project operations, monitoring and reporting has been applied for validation.

The validation includes confirming the implementation of the monitoring plan of the validated VCS PD (Pipeline ID- 2019) and the application of the monitoring methodology as per "ACM0002- Grid-connected electricity generation from renewable sources' version 19."

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

The project proponent has applied the baseline and monitoring methodology ACM0002, Version 19.0: "Grid-connected electricity generation from renewable sources".

The project activity consists of 50 WTGs (2.1 MW capacity each), making the total installed capacity to be 105 MW at Keshiya and Tarana project site in Jamnagar district of Gujarat state, India. The WTGs of capacity 2.1 MW are of Vestas make (model V120 HH120). The first WTG under the project activity was commissioned on 21/06/2019. It is verified that out of 50 WTGs, total 46 are already commissioned and remaining WTGs expected to be commissioned by December 2019 end. The same was verified against the commissioning certificates/07/.

The proposed project activity is a Green field project which results in an estimated GHG emission reduction of 363,796 tCO₂ annually and a total of 3,637,960 tCO₂e over 10 years of the crediting period. The power generated by the project will be replacing the equivalent amount of electricity from the Grid system of India, which is dominated by fossil fuel based grid connected power plants.

A risk based approach has been followed to perform this validation. In the course of validation, 02 Corrective Action request (CARs) and 01 Clarification request (CLs) were raised and successfully closed.

The review of the project design documentation, monitoring report and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and stakeholders have provided ESPL with sufficient evidence to validate the fulfillment of the stated criteria.

In detail the conclusions can be summarized as follows:

- The project is in line with all relevant host country criteria (India) and all relevant VCS and UNFCCC requirements for CDM
- The project additionality is sufficiently justified in the VCS PD.
- The monitoring plan is transparent and adequate.

- The calculation of the emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 3,637,960 tCO₂e are most likely to be achieved within the 10 years crediting period.

Validation Conclusion:

The conclusions of this report show, that the project, as it was described in the project documentation is in line with all criteria applicable for the validation. This validation is based on the information made available to ESPL and the engagement conditions are detailed in this report. No restrictions or uncertainties were identified related to the validation and verification.

ESPL confirms that the project is implemented in accordance with the validated VCS PD. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the projects GHG emissions and the resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring and its associated documents.

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1 INTRODUCTION

1.1 Objective

ESPL has been contracted by Infinite Solutions ((Representative of Project proponent, to undertake the validation of the renewable energy project titled “100 MW grid connected Wind Power project in Jamnagar Gujarat, India”.

The purpose of this validation is to have an independent third party assessment of whether the project activity conforms to the qualification criteria set out in the VCS Version 3.7 standard to attain real, measurable, additional and permanent emission reductions. The validation statement/opinion is a written assurance that:

- The project complies with all the applicable VCS requirements and has the ability to generate the emission reductions stated over the project's crediting period.
- The validation followed the requirements of the current version of the VCS Standard Version 3.7 and VCS program guide 3.7 to ensure the quality and consistency of the validation work and the report.
- The project has resulted in emission reductions as declared by the organisation or GHG project's GHG assertion;
- The data reported is accurate, complete, consistent, transparent and free of material error or omission.

1.2 Scope and Criteria

The validation scope is given as an independent and objective review of the project design, the project's baseline study and monitoring plan which is included in the VCS PD and other relevant supporting documents.

The scope of work covered in the validation is described below:

- To validate whether the project activity meets the requirements of VCS Standard Version 3.7, VCS Validation and VCS program guide 3.7 including additionality, proof of title and compliance with local laws.
- To evaluate whether the baseline and monitoring plan are in conformance with the applied methodology from the VCS approved GHG program
- To confirm that the information presented are completed, consistent, transparent and free of omission or material error
- Background investigation and follow up interviews
- Issuance of draft validation report with CARs, CRs & FARs, if any
- Final validation opinion

The information in the VCS PD is reviewed against the criteria of VCS Standard 3.7, the VCS program guide 3.7 and the applied baseline and monitoring CDM methodology ACM0002, version 19.

ESPL has performed validation based on a risk based approach focusing mainly on the significant risks to meet the qualification criteria and the ability to generate Verified Carbon Units (VCUs).

The information in the VCS PD is reviewed against the criteria of VCS Standard 3.7, the VCS program guide 3.7 and the approved baseline and monitoring CDM methodology ACM0002, version 19.0.

ESPL has performed validation based on a risk based approach focusing mainly on the significant risks to meet the qualification criteria and the ability to generate Verified Carbon Units (VCUs).

The validation is not meant to provide any consulting towards the client. However, stated request for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3 Level of Assurance

The validation has been planned and organized to achieve a

☒ Reasonable level of assurance

☐ Limited level of assurance.

1.4 Summary Description of the Project

The proposed project activity is a renewable wind electricity generation project and supplying power to the Indian Grid. The power generated by the project will be replacing the equivalent amount of electricity from the Grid system of India, which is dominated by fossil fuel based grid connected power plants. The project activity is located in the district of Jamnagar in the state of Gujarat, India.

The project activity consists of 50 WTGs of 2.1 MW capacity each, making the total installed capacity to be 105 MW. There are 46 WTGs have been commissioned till date and remaining 4 WTGs are expected to be commissioned by end of December 2019. Operational status of WTGs is verified during the site visit and through the commissioning certificates/07/.

2 VALIDATION AND VERIFICATION PROCESS

2.1 Method and Criteria

The validation process is undertaken by validation team that involves the following:

- The desk review of documents and evidences submitted by the project proponent in context of the reference VCS rules and guidelines,
- Undertaking site visit, interview or interactions with the representative of the project proponent,
- Reporting audit findings with respect to clarifications and non-conformities and the closure of the findings, as appropriate and
- Preparing a draft validation report
- Resolution of outstanding issues and the issuance of final verification report and opinion

In order to ensure transparency, a validation protocol was prepared for the project according to the VVS for PAs version 02.0 verification requirements and VCS Standard version 3.7. The Clarification Requests (CR) were issued where additional information was needed to clarify issues, and Forward Action Requests (FAR) for issues relating to project implementation that required review during the first verification of the project activity.

2.2 Document Review

The validation team has conducted the validation using the VCS Standard and the ACM0002 version 19.0 methodology as the reference criteria. The validation team had done the completeness check of VCS PD submitted by the PP as per the VCS standard Version 3.7 requirements was reviewed. Furthermore a desk review was also carried out to assess the following:

- Information of project details in compliance with VCS PD template
- Appropriateness of methodology ACM0002 version 19.0 applied to the project activity
- Compliance with relevant laws and regulations

- Correctness of application of baseline and monitoring methodology
- Demonstration of additionality
- Monitoring plan described in the VCS PD
- Stakeholder consultation
- Proof of listing of project under pipeline
- Calculation of grid emission factor, etc. where applicable.

The VCS PD version 01 dated 07/11/2019 was initially reviewed and the PP requested to submit the revised documents along with the supporting information and documents. The revised documents and additional supporting documents were further assessed by the validation team. During the validation process, the revised VCS PD /01/ and the supporting documents were assessed to confirm the actions taken by the PP to the CARs and CLs issued.

The validation team has reviewed the final version of the VCS PD Version 03 dated 21/12/2019 to confirm that all changes agreed have been incorporated.

Further, prior to the onsite visit, it was verified by the validation team that the project was listed in the VCS pipeline in line with the requirements (Section 3, Registration and Issuance process, version 3.8) Ref: https://www.vcsprojectdatabase.org/#/pipeline_details/PL2019

2.3 Interviews

The assessment team has carried out interviews in order to verify the information included in the project documentation and to gain additional information regarding the compliance of the project with the VCS requirements. Before and during the on-site visit, the assessment team has interviewed the representatives of the PP to confirm selected information and to clarify issues identified during the document review. Representatives of the PP and Vestas Wind Technology India Pvt Limited (O&M contractor) were also interviewed. The names and designations of the personnel interviewed are mentioned in section 2.4 below.

The main topics covered during the interview are as follows:

- General Aspects of the project
- Project Implementation
- Equipment and operation
- Staff Training procedures
- Calibration procedures
- Monitoring & Measuring System

- Data collection, recording and archiving procedure
- QA/QC procedures
- VCS documentation
- Emission reduction calculations

2.4 Site Inspections

As part of the validation, an on-site inspection has been performed by the assessment team. The site visit was carried out on 12/12/2019. During the site visit representatives of the PP and O&M contractor were interviewed; i.e. personnel responsible for monitoring of the project activity, data collection and management, and QA/QC procedure. The details of the people interviewed and the topics discussed are mentioned in the table below:

Location: District – Jamnagar State – Punjab	Date: 12/12/2019
Coverage	Source of Information / Persons Interviewed
Project implementation, start date as per the VCS requirements. Electricity Generation Records (monthly energy statements, Invoices) Reliability & accuracy of readings considered for emission reduction calculations, Calibration procedure	Mr. Vipul Jambucha(Construction Head) Mr. Jimmy Sah (Infinite Solutions)
Monitoring and measuring system • Collection of measurements • Observations of established practices • Data Verification of monitoring parameters	Mr. Natrajun.k (Site Incharge)
QA/QC procedures, data management, internal audits to maintain data quality & reliability, maintenance Practices Consideration of monitoring period, monitoring methodology, project documentation and emission reduction calculations	Mr. Kanu Hadiya (Service O&M) Mr Kishore Landage(Electrical Head)

2.5 Resolution of Findings

As an outcome of the validation process, the team can raise different types of findings:

A Clarification Request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met

Where a non-conformance arises the team leader shall raise a Corrective Action Request (CAR). A CAR is issued, where:

- The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
- The VCS requirements have not been met;
- There is a risk that emission reductions cannot be monitored or calculated.
- The validation process may be halted until this information has been made available to the team leader's satisfaction. Failure to address a CL may result in a CAR. Information or clarifications provided as a result of a CL may also lead to a CAR. No CL has been raised during the validation of the project activity.

During the validation and verification process, total 02 CARs and 01 CL were raised and resolved satisfactorily. The list of CARs/CLs/FARs raised and the response provided, the mean of validation, reasons for their closure and references to correction in the relevant documents are provided in Appendix 2 of this report

2.5.1 Forward Action Requests

A Forward Action Request (FAR) is raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity. FARs shall not relate to the VCS requirements for registration.

No FAR has been raised during the validation of the project activity.

3 VALIDATION FINDINGS

3.1 Project Details

Project type, technologies and measures implemented, and eligibility of the project:

As per the project type defined by the UNFCCC and VCS standard version 3.7 Guidelines, the project activity is falls under type-I (Renewable energy projects) and the list of Sectoral the sectoral scope 1 - Energy Industries (renewable/ non-renewable sources).

The project activity consists of 50 WTGs of 2.1 MW capacity each, making the total installed capacity to be 105 MW. The WTGs are of V120-2.1MW HH 120m type, supplied by Vestas Wind Technology India Pvt.Ltd.

The proposed project activity is a Green field project which results in an estimated GHG emission reduction of 363,796 tCO₂ annually and a total of 3,637,960 tCO₂e over 10 years of the crediting period.

The technology employed by project activity involves, generation of electrical energy using wind power. The technology used in the project does not generate any GHG emissions, hence considered as an environment friendly. The project activity is a Greenfield project and there was no electricity generation at the project site prior to the implementation of project activity. The WTGs under the project activity is having an average lifetime of 25 years. The equipment's are based on manufacturer's specifications and as per industry standards.

Technical specifications of WTGs will be as follows:

Parameter	Specifications
Model Number:	V120-2.1MW HH 120m
Rotor	
Installed electrical output	2100 kW
Diameter	120 m
Cut-in wind speed	3 m/s
Rated wind speed	14 m/s
Cut-out wind speed	20 m/s
Rotor swept area	11310 m ²
Regulation	Pitch regulated with variable speed
Generator	
Type	Asynchronous, 4 Poles, doubly fed generator, slip rings
Rated output	2100 kW
Frequency	50 Hz
Gear Box	
Type	One planetary stage and two helical stages
Yaw system	
Drive	Active electrical yaw motors
Bearing	Polyamide slide bearing

Safety system	
Aerodynamic brake	3 independent systems with blade pitching
Mechanical brake	Hydraulic disc brake
Technical Life	25 Years

The purpose of the project activity is to generate the electricity and supplying to grid by the utilization of wind power. The project activity will generate greenhouse gas (GHG) emission reductions by avoiding GHG emissions which otherwise would have been generated by the operation of grid connected power plants and by the addition of new sources. Hence the project accomplishes VCS conditions.

Project proponent and other entities involved in the project-

The project activity is developed by Verdant Renewables Pvt Ltd.

Verdant Renewables Pvt Ltd is the project proponent and Infinite Solutions is other entity involved in the project activity.

Project start date-

The project start date is 21/06/2019/07/. This is because the first WTG was commissioned as on the said date.

Project crediting period-

The crediting period of the project activity is for 10 years (renewable) .The first crediting period is from 21/06/2019 to 20/06/2029.

Project scale and estimated GHG emission reductions or removals-

The estimated annual emission reductions for the project activity are 363,796 tCO₂e which is more than 300,000 tCO₂e. Hence the category is applicable under “Large Project”.

Project location-

The wind power project is located at Keshiya and Tarana project site in Jamnagar district of Gujarat state, India.Geo-coordinates of the commissioned WTGs are verified through Google Maps (<https://www.gps-coordinates.net/>) and found consistent with the same mentioned in the VCS PDD.

Conditions prior to project initiation-

The project activity is set up to produce clean power from the wind energy converters (WEC's) which can be also named as Wind Turbine Generator (WTG). The project activity involves supply, erection, commissioning and operation of 50 machines of rated capacity 2.1 MW. The project is Greenfield project. There was no project installed prior to commissioning of this project.

Project compliance with applicable laws, statutes and other regulatory frameworks:

The project is a voluntary initiative by the project proponent and has not been implemented to meet any local / national laws or regulatory compliances. There is following act/regulations /30/ prevailing in the state:

1. Electricity Act 2003
2. GERC RE regulations
3. Gujarat ACT NO. 24 OF 2003
4. National Electricity Policy 2005
5. Tariff Policy 2006

The project activity is in compliance with current laws and regulations and there are no legal and/or regulatory requirements that prevent the project implementation. Also the validation team has confirmed that there is no such compliance requirement with an emission trading program or any binding limits on GHG emissions for the project activity in India (host country) as it is a non-annex 1 country. The project has obtained valid consents/17/, for the installation and operation from the state nodal agencies and is in compliance with local laws and regulations.

Ownership and other programs-**Right of use**

The project activity comprises of 50 WTGs with a capacity of 2.1 MW each owned by Verdant Renewables Pvt Ltd. The ownership of the project activity is verified through the following documents:

- Commissioning certificates /07/
- Power purchase agreement signed by the PP with state utility/8/
- Purchase order issued by the PP to technology supplier /16/

Emissions trading programs and other binding limits

The project is not participating in other emission trading programs. The letter of undertaking/29/ has been furnished by project participant confirming that net GHG emission reductions or removals generated by the project will not be used for compliance with an emissions trading program or to meet binding limits on GHG emissions.

Other forms of environmental credit sought or received and eligible to be sought or received:

The project seeking registration under the VCS (Pipeline ID-2019) and not listed under REC mechanism/26/ as verified from <https://recregistryindia.nic.in/index.php/publics/index> .

Participation under other GHG programs:

Project is seeking registration under VCS only (Pipeline ID-2019). The PP has submitted the declaration/29/ which states that the net GHG emission reductions generated by the project activity will not be used for compliance with any other emissions trading program or to meet binding limits on GHG emissions for the same monitoring period.

Rejection by other GHG programs:

The project has not been rejected by other GHG programs.

Additional information relevant to the project, including:

- **Eligibility criteria for grouped projects**

The project activity is not a grouped project, hence not applicable to the project activity.

- **Leakage management for AFOLU projects**

Not applicable to the project activity.

- **Commercially sensitive information**

No commercially sensitive information has been excluded from the public version of the project description.

Conclusion:

In view of the assessment of VCS PD /01/ and supporting documents as listed in Appendix 1 of this report, the validation team is able to confirm that the description contained in the VCS PD of the project activity provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation. Consequently, **ESPL** confirms that the project description of the project contained in the VCS PD/01/ to be complete and accurate. The VCS PD complies with the relevant forms and guidance for completing the VCS PD.

3.2 Participation under Other GHG Programs

The project activity is seeking registration under VCS programme only.

The start date of the proposed project activity is 21/06/2019 which is date of commissioning of first WTG involved in the project activity. Hence it can be confirmed that the project is complying with all the applicable VCS rules, including project start date and project crediting period requirements.

During the verification process, the verification team has reviewed the declaration submitted by the project proponent confirming that GHG emission reduction credits from the Project have not been registered under another GHG program.

It can be concluded that the project is eligible to participate under the VCS Program.

3.3 Application of Methodology

3.3.1 Title and Reference

The project activity has applied CDM approved methodology ACM0002 version 19.0.

Title: Grid-connected electricity generation from renewable sources

Tools referenced in the applied methodology:

- Tool to calculate the emission factor for an electricity system - Version 07.0 (EB 100, Annex 04)
- Methodological Tool- Tool for the demonstration and assessment of additionality - Version 07.0.0 (EB 70, Annex 08)

3.3.2 Applicability

All applicability conditions of the updated version of the methodology (ACM0002 version 19.0) are met. Thus the methodology is deemed fully applicable for the new crediting period and no request for deviation with regards to the applicability of the methodology is required. All applicability conditions are completely and correctly included in the VCS PD.

Criteria-1.

This methodology is applicable to grid-connected renewable energy power generation project activities that: (a) Install a Greenfield power plant; (b) Involve a capacity addition to (an) existing plant(s); (c) Involve a retrofit of (an) existing operating plants/units; (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or (e) Involve a replacement of (an) existing plant(s)/unit(s).

Validation assessment:

- Project activity is Greenfield wind power project, supplying electricity to national grid. This is verified thorough the Power Purchase Agreement /08/ and commissioning certificate/07/.

Thus the criterion is fulfilled by the proposed project activity.

Criteria-2:

The methodology is applicable under the following conditions:

(a) The project activity may include renewable energy power plant/unit of one of the following types: hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit;

(b) In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.

Validation assessment:

Project activity is generation of electricity through wind energy which is renewable energy power plant. Hence the project activity satisfies the criterion (a).

Criteria-3 and Criteria-4:

Both the criteria are relevant to hydro power projects. Since the proposed project activity is wind power plant, hence not applicable.

Criteria-5:

The methodology is not applicable to:

- (a) Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site;
- (b) Biomass fired power plants/units.

Validation assessment:

The project activity involves generation of electricity using wind energy. Thus the criterion is not applicable for the proposed project activity.

Criteria-6:

In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, that is to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance."

Validation assessment:

The project activity does not involve any capacity additions, retrofits or replacements of an existing facility because it is a Greenfield wind power generation project activity; same has been confirmed from physical inspection during the validation site visit.

Thus the criterion is not applicable for the proposed project activity.

Thus, it can be concluded that the applied methodology ACM0002, version 19.0 is applicable to the project activity.

Further, the applied methodology refers to latest available versions of the following tools;

1. Tool to calculate the emission factor for an electricity system

The joint VCS PD&MR/01/ refers and correctly applies the latest version of tool to calculate the emission factor for an electricity system, version 07.0 /05/. Also the PP has referred the CEA Baseline CO₂ Emission Database version 14 dated December 2018 which was the latest available database at the time of PDD submission for validation of the project activity. The locations of the project in the state of Gujarat in India. As per CEA Baseline CO₂ Emission Database/18/, the state of Gujarat comes under the Indian grid, the geographic and system boundaries of which are clearly identified; information on the characteristics of the grid is available. Thus, the tool is applicable for the project activity.

2. Tool for the demonstration and assessment of additionality

The latest version 7.0.0 of the “Tool for the demonstration and assessment of additionality”/12/ has been used by the PP. Since the additionally tool is included in an approved methodology, additionality tool needs to be applied for the project activity. Also PP is neither proposing new methodology nor proposing alternative methods to demonstrate additionality for consideration by the Executive Board. This it is concluded that the Tool for the demonstration and assessment of additionality is applicable for the project activity.

3. Combined tool to identify the baseline scenario and demonstrate additionality

The PP has used the “Tool to demonstration and assessment of additionality” in demonstration of additionality and the baseline has been developed in accordance with the applied baseline methodology. Hence, the combined tool is not used by the project participant.

4. Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion

Since there is no fossil fuel combustion involved in the project site or in the project boundary, this tool is not applicable to the proposed project activity and not used/applied by the project participant.

3.3.3 Project Boundary

The project boundary is given by the applied methodology, ACM0002, version 19.0.0:

“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.”

The purpose of this project activity is to generate electricity using renewable sources (wind power) and export to the Indian grid, thereby displacing the grid generated electricity. The project boundary includes the wind power project, sub-stations, grid and all power plants connected to grid, which has been illustrated in the Section 2.3 of the VCS PD/01/ and gives clear understanding of the project boundary; thus it is acceptable. The same has been confirmed during the site visit and is found to be appropriate.

The consideration, by the PP, of only CO₂ gas for the baseline emissions is conservative and also in line with the methodology. The exclusion of CH₄ & N₂O in the baseline scenario is appropriate. The project activity involves the generation of electricity using wind energy. Hence, there are no project emissions associated with this project activity. Hence, the exclusion of CO₂, CH₄ & N₂O in the project scenario are appropriate. There are no other sources of project emissions. Hence, the project participant has considered the project emissions as zero for project activity; this is in line with the methodology.

The assessment team is able to conclude that the project boundary and selected sources are applied as per the methodology and the applicable VCS criteria..

3.3.4 Baseline Scenario

The project activity involves the installation of a newly built and grid-connected renewable power plant and supplying the generated electricity to Indian grid, hence, according to the applied methodology ACM0002, version 19.0.0, the baseline scenario is determined properly as:

“Electricity delivered to the grid by the Project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system”..”

The latest available version for “Tool to calculate the emission factor for an electricity system” is version 07.0 /05/ and the PP has correctly referred to the same in the section 3.1 of the final VCS PD /1/ for determining baseline grid emission factor and it is found to be correct.

The calculation for the operating margin and combined margin for the Indian Grid is readily available and published by the Central Electricity Authority, Government of India/18/. The CEA power sector data is referred by all CDM project in India in the ER calculation and it is yearly updated with recent data. The project activity has referred the CEA Baseline Carbon Dioxide Emission Database is version 14/18/ dated December 2018, which was the latest version available during submission of the PD.

The PP has used the simple operating margin calculation. The simple operating margin is calculated as an average of the latest available three years (at the time of PD submission for validation) i.e. 2015-16, 2016-17 and 2017-18. The value for weighted average operating margin has been validated and used as 0.9610 tCO₂/MWh. The Build margin for the Indian grid is considered as 0.8644 tCO₂/MWh. The weighted average combined margin has been calculated by the PP, considering the 75% weighted for operating margin and 25% for build margin; this is in accordance with the tool. The weighted average combined margin emission factor for the project activity comes to 0.9368 tCO₂/MWh. The PP has provided the calculation for the same in the ER calculation sheet and it was validated by the validation team. The baseline emission factor for the electricity system has been calculated on ex-ante basis and will remain fixed for the entire project crediting period.

The discussion on baseline is comprehensive in the VCS PD section 3.1 and it is in line with the applied baseline and monitoring methodology ACM0002 version 19.0. Also the identified baseline for the project activity is the most likely scenario of what would have occurred in the absence of the project activity and is confirmed by TA expert on the team; thus it is accepted. The project participant has included all sources and references used for baseline determination for the project activity in the PD/1/ and the identified baseline is justified appropriately by the project participant. The Baseline scenario and baseline emission calculations are found as per ACM0002 version 19.0/4/. The combined margin approach is the ex-ante approach as per tool to calculate the emission factor for an electricity system. Based on the requirements of paragraph 83 of the VCS version 02.0 /11/, the validation team confirm that:

- (a) All the assumptions and data used by the PP are listed in the VCS joint PD & MR, including their references and sources;
- (b) All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PD;
- (c) Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable;
- (d) Relevant national and/or sectoral policies and circumstances are considered and listed in the PD;
- (e) The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed project activity.

3.3.5 ***Additionality***

The proposed project activity is a large scale project and the additionality of the project activity was demonstrated on the basis of the "Tool for the demonstration and assessment of the additionality", Version 07.0.0, approved by the CDM EB 70 and required by the methodology ACM0002, Version 19.0.0.

PP has adopted the step-wise approach for demonstrating and assessing the additionality of the project activity as follows:

Step 0: Demonstration whether the proposed project activity is the first-of-its-kind

This step is optional and not used for this project.

Step 1: Identification of alternatives to the project activity consistent with current laws and regulations

As the project activity involves the installation of a newly built and grid-connected renewable power plant that exports the generated electricity to the Indian grid system in India, hence, according to the methodology ACM0002 version 19.0, the baseline scenario is determined properly as:

“Electricity delivered to the grid by the Project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system”.

The approved methodology that is applied prescribes the baseline scenario, and the same has been opted in this project, therefore, no further analysis on baseline is required.

The relevant National Acts/17/ and regulations pertaining to generation of energy in India are:

- Electricity Act 2003
- National Electricity Policy 2005
- Tariff Policy 2006

The above mentioned National Acts and regulations pertaining to generation of energy in India does not influence the choice of fuel used for power generation. There is no legal requirement on the choice of a particular technology for power generation.

Step 2: Investment analysis

For the proposed project activity, the PP has demonstrated investment barrier through step 2 of “Tool for the demonstration and assessment of additionality” (version 07.0.0).

Sub-step 2a: Determine appropriate analysis method:

The project activity generates revenues from the sale of electricity which is supplied to grid; therefore, the Simple Cost Analysis (Option I) and Option-II (Apply investment comparison analysis) cannot be applied. Instead, the Benchmark Analysis (Option III) is selected as the appropriate analysis method to demonstrate the investment barrier.

Financial Indicator (Equity IRR):

The PP has selected post-tax equity IRR as the financial indicator for the Investment Analysis. The appropriateness of the financial indicator has been verified by the assessment team, it was confirmed that the equity IRR is a widely accepted financial metric used by many corporations and financial institutions for investment decision-making and is a long-established benchmark for investment decisions in the Indian power sector and is in line with the “Investment Analysis tool” version 07 (EB 92 Annex 05) /27/, which was the latest version available at the time of decision making.

The post-tax equity IRR for the project activity at the time of investment decision comes out to be 7.46%. The data, rationales, assumptions and justifications mentioned in the VCS PD/01/ and investment analysis excel sheets/03/ were checked against the local knowledge of the validation team, sectoral scope expertise, regulatory and applicable legal requirements in the Host country India. The documents were also verified by the financial expert. The appropriateness of the input values, used for financial calculation have been checked in line with paragraph 10 of the Investment Analysis tool (EB 92 Annex 05).

The input parameters in the financial analysis have been taken as per the values and assumptions applicable and available at the time of decision to invest in the project activity in line with Paragraph 10, investment analysis tool version 10.0 /27/.

The approach used in the VCS PD /01/ has been assessed based on a document review, whilst the following relevant documents have been reviewed:

- Board Resolution by the project proponent to invest into the proposed project activity considering carbon credit revenue, dated 17/07/2017 /15/
- Project Assessment Report (PAR) prepared by SITAC RE, dated July 2017/14/
- Equity IRR and Benchmark Analysis calculation sheets/3/
- Gujarat Electricity Regulatory Commission (GERC) tariff order, 02/08/2016 /19/

On site, the additionality of the project activity has been discussed with representatives of the PP and finally the data, rationales, assumptions; justifications and documentation provided have been checked using local knowledge and sectoral and financial expertise of the Assessment Team, and cross checked by:

- Power Purchase Agreement /8/
- Purchase order /16/
- Commissioning Certificate/7/
- Third Party PLF/CUF assessment report/10/

The individual financial parameters used for calculations of equity IRR of the project activity have been discussed as below in detail;

Project Cost:

The Project cost for the project activity has been considered on the basis of the Project Assessment Report (PAR) /14/ which is available to the project participant during conceptualization stage of the project. The project cost includes cost of materials and equipment, labour and services, identification, selection and allocation of land, cost for obtaining all government permissions and infrastructure development charges. This is found to be appropriate and it is accepted. The project cost for the project activity has been considered as INR 7,140 million.

The appropriateness of the same is further cross-checked against the actual purchase order/16/ placed for the project activity and found to be comparable.

Sensitivity analysis considering +/- 10% variation in the project cost is carried and results are summarized in this report.

2. Operation and Maintenance Cost and its escalation:

Operation and maintenance cost considered is INR 115.52 million for the project activity (including the service tax) and an escalation of 5% per year as per PAR (Latest applicable at the time of investment decision). Also O&M for BOP (Balance of Payment) is considered as INR 11.80 million (includes maintenance of access road, crane parking areas and unloading zones ect).

O&M will be free of cost for 2 years of operation of the project activity. For 3rd year O & M cost will apply and an escalation of 5% will be applicable from 4th year onwards. Also O&M cost considered for the project activity is further checked with the GERC tariff order dated 2nd August 2016 (Latest applicable at the time of investment decision) which indicates O&M cost ranging from 1.8% - 1.9% of the capital cost with 5% escalation every year.

Plant Load Factor:

The Plant Load Factor as 42.22% is considered from the third party PLF assessment report prepared by WRA Consultant , dated 14/07/2017 available to the PP at the time of decision/10/. The Project Participant had contracted third party for PLF assessment in line with paragraph 3 (b) of Annex 11 of EB 48 and the PLF is verified as indicated through the PLF assessment report prepared by third party. Hence it can be concluded the PLF considered by the PP is appropriate.

To further crosscheck the appropriateness of the PLF considered for the project activity, GERC tariff order dated 02/08/2016/20/ is checked which is the latest available document at the time of decision making and on page 16 of the GERC tariff order indicates PLF 24.5%. This is covered in the sensitivity analysis variation range and the Equity IRR remains additional under the investment benchmark value. Thus it is concluded that PLF considered by the PP is appropriate; and the same has been considered in IRR calculations for the project activity. Also this parameter is considered under +/-10% sensitivity.

Electricity Tariff:

The Project participant had considered INR 2.44/kWh as average electricity tariff fixed for the 25 years of the project's lifetime. It is checked and confirmed through Project Assessment Report/14/. Since, it was the latest available and applicable at the time of decision making of the project activity, Paragraph 10, investment analysis tool version 10.0 is followed and it is accepted.

Thus it is concluded that electricity tariff considered for the project activity is found to be appropriate and it is accepted.

Also the validation team has assessed the impact on the IRR value and project additionality using the actual electricity tariff as per PPA/08/ signed with the state electricity board (GUVNL) and it is concluded that the tariff rate considered for IRR calculation is same as mentioned in PPA.

The Electricity Act, 2003, the policies framed under the Act, as also the National Action Plan on Climate Change (NAPCC) provide for a roadmap for increasing the share of renewable energy in the total generation capacity in the country. Central Electricity Regulatory Commission (CERC) has notified Regulation on Renewable Energy Certificate (REC) in fulfilment of its mandate to promote renewable sources of energy and development of market in electricity. Thus the project applicability for these benefits under REC mechanism has been checked. Detailed procedure on REC mechanism dated 01/06/2010 published by Central Electricity Regulatory Commission/26/ (<https://recregistryindia.nic.in/>) is checked for REC eligibility of the project activity and it is confirmed that the procedure was applicable at the time of projects investment decision. It is confirmed that REC is not applicable for the projects taking benefits of preferential tariff, hence it is concluded that REC benefits are not applicable to the project activity. Also in the actual scenario, PP will not be claiming REC benefits for the project activity and it is confirmed during the site visit while interviewing the PPs representative and further checked from the official web site of REC registry/28/ hence it is accepted.

5. Debt to Equity Ratio:

The project activity is funded by 30% equity and 70% debt as per the PAR/14/. This is in line with the Paragraph 10, investment analysis tool version 10.0, which talks about typical debt/equity finance structure in the sector in the country. Typical debt-equity ratio is 70:30 in wind energy sector and this is checked from GERC tariff order dated 02/08/2016 /19/ which is latest available at the time of investment decision.

There is no variation and IRR remains well below the benchmark and hence it is found appropriate and thus it is accepted.

6. Insurance Cost:

Insurance cost for the project activity is considered as 0.15% of total project cost, as INR 12.64 million per annum for the project activity as per the PAR/14/. This is checked from GERC tariff order dated 02/08/2016 /19/ which is latest available at the time of investment decision.

7. Life Time of project activity: 25 years

The lifetime of the project activity is 25 years which has been considered from the PAR/14/. This is consistent with the lifetime of wind power projects and has been confirmed by the technical expert. The crediting period of the proposed project activity is 10 years (renewable) as mentioned in the VCS PD/01/. However the period of assessment considered for the investment analysis is 25 years. This has been confirmed from the IRR-benchmark spread sheet submitted by the PP. Hence the considered assessment period of 25 years meets the requirement of paragraph 6 of investment analysis tool version 10.0.

8. Interest rate on term loan: 10%

The interest on term loan considered for the investment analysis from the Project Assessment Report, July 2017. This was available to the PP at the time of the investment decision.

Hence the considered rate is appropriate and in line with applicable guidance in paragraph 10 of investment analysis tool version 10.0.

9. Loan tenure, Repayment period and Moratorium period:

The PP has considered loan tenure as 12 years, a repayment period of 10 years with a moratorium period of 2 year as per the PAR/14/ and further verified through the GERC tariff order; dated 02/08/2016/19/. The considered repayment schedule was available to the PP at the time of investment decision and hence found to be acceptable.

10. Book Depreciation Rate and Income Tax Depreciation Rate:

The Depreciation on plant and machinery is calculated at 5.28% and civil works as 3.34% on Straight Line Method (SLM) as per the Companies Act, Schedule XIV, Item II (i) (b) published by the Government of India/23/. Furthermore, the PP has considered 10% as salvage value and 90% as depreciable component on plant and machinery as per publically available source (GERC tariff order, dated 02/08/2016 and Schedule XIV, The Companies Act 1956/22/), which is found justified.

The income tax depreciation rate of 80% on WEC block of assets and 20% on other assets has been considered as per the Income Tax, depreciation rates for power generating units published by the Government of India.

(Source: <https://www.incometaxindia.gov.in/charts%20%20tables/depreciation%20rates.htm>)

As the Income tax India website is official data, it eliminates any ambiguity that there could have been in this regard.

11. Income Tax and MAT:

PP has considered Income Tax as 29.12% (inclusive of Surcharge (12%), Education Cess (4%) and MAT 21.55% respectively (Including surcharge and education cess) in investment analysis for the project activity and these values are sourced from Project Assessment Report/14/. This is as per tax rates applicable to a domestic company in India (<https://www.incometaxindia.gov.in/Tutorials/2%20Tax%20Rates.pdf>).

The appropriateness of the same has been checked and confirmed by financial expert involved in the project activity. This is found to be appropriate and it is accepted.

12. Goods and Service Tax (GST):

PP has considered GST as 18% according to the publically available guidelines (source web link: <https://cleartax.in/s/gst-hsn-lookup>) that mentions, engineering & construction of wind power plants were to be taxed at 18%. The appropriateness of the same has been checked and confirmed by financial expert involved in the project activity. This is found to be appropriate and it is accepted.

13. Residual (Salvage) Value:

Salvage value is considered as 10% of the total project cost (excluding cost of land lease, erection and commissioning charges as well as transportation charges) as per the GERC tariff order, dated 02/08/2016. These have been added back to the cash flow. As the land is purchase and it is being non-depreciable item, it is added back to the cash flow. However, PP considered 10% of cost of plant and machinery (WTGs) and 100% land cost as residual (salvage) value for the project activity conservatively). This is further validated as per the accounting practises and same has been also cross checked from Section 205 (2b and c) of Companies Act 1956 on the publically available web-link(<http://www.indiankanoon.org/doc/1422372/>) which allows a depreciable cost of ninety five per cent which implies a consideration of 5% of salvage value as a standard accounting practice. Thus, the consideration by the PP of 10% salvage value is conservative and hence appropriate for the purpose. The appropriateness of this is confirmed by the financial expert involved in the project activity; thus it is accepted.

Conclusion:

The values considered for all the above discussed parameters were available at the time of investment decision and hence are valid and applicable to the project activity. All input values have been consistently mentioned and applied in all calculations. This meets the requirement of paragraph 10 of investment analysis tool version 10.0. The assessment team confirms that in the calculation of equity IRR only the portion of investment costs which is financed by equity has been considered as the net cash outflow and the portion of the investment costs which is financed by debt has not been considered a cash outflow. This meets the requirement of paragraph 14 of investment analysis tool version 10.0.

Based on the above parameters, the post-tax Equity IRR for the project activity is arrived as 7.46%. This is lower than the calculated benchmark of 15.90%. This signifies that the proposed project activity is not financially attractive and is therefore additional.

Sub-step 2a: Determine appropriate analysis method:

The project activity identified in Step 1 generates revenues from the sale of electricity; therefore, the Simple Cost Analysis (Option I) cannot be applied. Instead, the Benchmark Analysis (Option III) is selected as the appropriate analysis method.

Sub-step 2b: Apply benchmark analysis (Option III)

The proposed VCS project activity is a wind power project which could be developed by an entity other than the PP. Hence the benchmark has been based on parameters that are standard in the market, which is suitable in the context of the underlying project activity. This meets the requirement of paragraph 17 of EB 92 Annex 05 (latest version of the investment analysis tool available at the time of decision making).

The PP has provided the calculation of the benchmark in the VCS PD /01/ and investment analysis spread sheets. The benchmark has been calculated in line with paragraph 18 and 20 of EB 92 Annex 05. Based on the option in paragraph 20, the PP has selected the default value for the expected return on equity (in real terms) from Appendix (EB 92 Annex 05). The default value has been obtained as 11.06% for India corresponding to Group 1 (Energy Industries).

The IRR calculation has been carried out on in nominal terms. Hence as per the requirement of paragraph 17 of EB 92 Annex 05, the PP has converted the default value (i.e. 11.06%) which is in real terms to nominal terms by adding an inflation rate. The inflation rate has been sourced from the Reserve Bank of India's (RBI) Survey of Professional Forecasters: Results of 46th Round (Q2:2017-18) dated 07/06/2017/24/. It was verified that the inflation rate is expected to be 4.36% over the next 10 years. The RBI is the Central Bank of India and hence the source for the inflation rate is appropriate. The assessment team has confirmed that the default value was available at the time of decision making and has been appropriately applied by the PP.

Accordingly PP converted the default benchmark which is in real terms into nominal terms by using the following equation:

$$\text{Nominal Benchmark} = (1 + \text{Benchmark real}) \times (1 + \text{Inflation rate}) - 1$$

Where,

Default value for Real Benchmark = 11.06% (as per Appendix of EB92, Annex 05)

Inflation Rate = forecast for by Reserve Bank of India (RBI) (i.e. Central Bank of India) for India.

Therefore the Nominal Benchmark estimated = $(1 + 11.06\%) \times (1 + 4.36\%) - 1 = 15.90\%$

The validation team is of the opinion that the above benchmark, which is based on the parameters that are standard in the market, is suitable in the context of the project activity. Since the benchmark is based on parameters that are standard in market, the ROE is calculated by using best financial practices and data sources have been clearly validated by validation team.

The suitability of the benchmark considered for the project activity is confirmed in line with paragraph 100 of VVS for PAs version 2.0 as follows:

- a. The financial indicator used for the project investment analysis is post-tax Equity IRR, and the benchmark has been calculated as ROE which is suitable to the type of financial indicator chosen by the PP.
- b. Since this is a wind energy generation project, and RBI's WPI minimum inflation rate for host country i.e. India is applied as per the EB 92 Annex 05 and hence no risk premiums are applied.
- c. The financial analysis of the project at the time of investment decision as well as with actual parameters, along with the respective sensitivity analysis, shows that the Equity IRR of the project, under no scenario crosses the benchmark returns. Therefore it can be concluded that the project is not financially viable and hence it can be assumed that no investment would be made at a rate lower than the benchmark return.

Sub-step 2d: Sensitivity analysis:

The sensitivity analysis has been carried out by the project participant for a reasonable range of variations i.e. +/-10% of major parameters, and this was found to be as per paragraph 27 of Investment Analysis tool version 10.0. At the time of decision, the PP had considered the project cost and O&M cost for project activity, as per PAR/14/. The PLF is nature dependent and varies depending on wind velocity and density. Also electricity tariff is assessed under sensitivity analysis though tariff considered for the project activity is average electricity tariff for 25 years period of the project activity conservatively. These parameters have material impact on the investment analysis.

The project participant has considered all the variables that constitute more than 20% of either total project costs or total project revenue i.e. PLF, Project Cost, tariff and O&M cost in the sensitivity analysis and hence this is found to be in line with paragraph 27 of Investment Analysis tool version 10.0.

Percentage Variation	+10%	0%	-10%
Parameter	Plant Load Factor(Energy generation)		
Equity IRR (%)	9.98	7.46	5.0
Parameter	Project Capital Cost		
Equity IRR (%)	5.64	7.46	9.80
Parameter	Electricity Tariff		
Equity IRR (%)	9.98	7.46	5.0
Parameter	Operation and Maintenance Cost		
Equity IRR (%)	7.02	7.46	7.89

Threshold limits for variations:

It is verified that the Equity IRR crosses the benchmark if:

1. Project cost reduced by 27.15%: This is not a likely scenario as actual variation in project is within 10%, than the same considered for IRR calculation. This is verified through the purchase order/16/, hence no more variation is possible.

2. PLF increases by 32.16%: PLF considered by the project participant is appropriate in line with paragraph 3 (b) of EB 48 Annex 11. Equity IRR is crossing the benchmark if PLF is increased by more than 32.16% and it is very unlikely as the average PLF considered in the assessment is already higher than the same mentioned in the GERC tariff order.

3. Tariff increases by 32.20% Further increase in tariff rate is highly unlikely scenario as the tariff rate is fixed for 25 years as verified through the GERC tariff order/19/ and further confirmed with the PPA signed/8/ with state electricity board.

Outcome of Step 2:

In view of the above discussion the assessment team has concluded that the project activity is additional and it is found to be financially not viable.

Step 3: Barrier analysis:

This option is not opted for the project activity.

Step 4: Common practice analysis

PP has demonstrated common practice analysis as per “Common practice tool” version 03.1. The stepwise approach to validate common practice analysis for the project activity is discussed as below;

As per paragraph 13 of “Tool for the demonstration and assessment of additionality” – Version 7.0.0, project activity belong to measure “Switch of technology with or without change of energy source including energy efficiency improvement as well as use of renewable energies”; hence sub-step 4a) of the tool is applicable for the project activity.

Sub-step 4a): The proposed CDM project activity (ies) applies measure(s) that are listed in the definitions section above

As per sub-step 4a), paragraph 58 of the “Tool for the demonstration and assessment of additionality” – Version 7.0.0, latest version of the “Guidelines on common practice” available on the UNFCCC website shall be applied.

The PP applied latest version 03.1 of “common practice tool” and same has been as below;

Applicable Geographical Area: As per section 4 clause 9 of common practice tool version 03.1

“Applicable geographical area should be the entire host country. If the project participants opt to limit the applicable geographical area to a specific geographical area (such as province, region, etc.) within the host country, then they shall provide justification on the essential distinction between the identified specific geographical area and rest of the host country.”

The applicable geographical area has been considered as the host country, India, as default as defined in section 4 under paragraph 9 of the tool.

The PP has submitted the excel spread sheet of common practise analysis/03/ as per steps below for projects identification for similar and different projects and found to be appropriate.

Step 1: *calculate applicable capacity or output range as +/-50% of the total design capacity or output of the proposed project activity.*

The capacity of the project activity is 105 MW; hence applicable output range is 52.5 – 157.5 MW.

Step 2: *identify similar projects (both CDM and non-CDM) which fulfill all of the following conditions:*

- (a) *The projects are located in the applicable geographical area;*
- (b) *The projects apply the same measure as the proposed project activity;*
- (c) *The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity;*
- (d) *The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas (e.g. clinker) as the proposed project plant;*
- (e) *The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1;*
- (f) *The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity.*

PP had considered 17 wind power generation projects in applicable geo-graphical area in applicable output range of +/-50% of the total design capacity of 50 MW i.e. output range of 52.5 – 157.5 MW. The assessment team has checked and confirmed that all these 17 projects have started their commercial operation before start date of the project activity, 21/06/2019. This data has been sourced from “Directory, India Wind Power 2017” (17th edition). This is cross checked and found to be appropriate, thus it is accepted.

Step 3: *within the projects identified in Step 2, identify those that are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation. Note their number N_{all}*

Out of the projects identified under step 2, 11 projects are either registered or submitted for registration or undergoing validations. It is checked and confirmed from UNFCCC project database and CDM Pipeline. Hence, $N_{all} = 6$.

Step 4: *within similar projects identified in Step 3, identify those that apply technologies that are different to the technology applied in the proposed project activity. Note their number N_{diff}*

Since applicable power tariff structure for renewable energy projects is unique for all the states across national boundary of India; which is based on Electricity Act 2003 (EA 2003), section 82 which clearly mentions “Every State Government shall, within six months from the appointed date, by notification, constitute for the purposes of this Act, a Commission for the State to be known as the (name of the State) Electricity Regulatory Commission” Appropriateness of the same has been checked and confirmed from EA 2003 (<http://www.cercind.gov.in/08022007/Act-with-amendment.pdf>). Hence the project participant has identified the projects that apply different technologies compared to project activity by considering the different regulatory framework and tariff rate from state to state. The specific policies/tariff rate for each state is regulated by the “State Electricity Regulatory Commission” of the respective states therefore the investment climate and operating conditions of wind power projects differ from state to state of India.

It has been concluded that the investment climate for the renewable energy projects varies from State to State within India due to state specific local policy & regulatory framework as outlined by the State Electricity Regulatory Commissions of the respective state. This difference in investment condition leads to essential distinction among hydro projects between different States of the host country India. As the project activity is located in the state Gujarat, hence the projects implemented in other states are considered under N_{diff} . It is verified that out of 6 projects, 5 projects implemented in the other states.

Hence, different project is $N_{diff} = 5$

Step 5: calculate factor $F=1-N_{diff}/N_{all}$ representing the share of similar projects (penetration rate of the measure/technology) using a measure/technology similar to the measure/technology used in the proposed project activity that deliver the same output or capacity as the proposed project activity.

Factor $F=1-N_{diff}/N_{all}$

Hence, $F = 1 - 5/6$

$= 0.17$

And

$N_{all}-N_{diff} = 1$

As per paragraph 18 of the “Common practice tool” v.03.1 “The proposed project activity is a “common practice” within a sector in the applicable geographical area if the factor F is greater than 0.2 and $N_{all}-N_{diff}$ is greater than 3”.

Thus assessment team had concluded that the project activity is not a common practice in the host country India, as F is less than 0.2 and $N_{all} - N_{diff}$ is lesser than 3. This is found to be appropriate and it is accepted.

Conclusion:

The assessment team is able to confirm that:

- The project analysis complies with requirements of the latest version of VVS.
- All the parameters and assumptions used in the investment analysis have been assessed thoroughly and found appropriate. The information with regard to how the input values was validated, cross-checked is included under relevant parameter.
- The sources used have been reviewed by the assessment team found to be authentic as referenced under relevant parameter.
- The benchmark was found suitable and has been thoroughly explained in detail.
- All the assumptions and calculations for investment analysis area have been checked by the financial expert and technical expert and found to be correct and reasonable.
- The financial returns from the project activity area insufficient to meet the required investment against the selected benchmark under reasonable variations (sensitivity) conducted on key parameters.

- The project activity complies with the latest version of “Tool for demonstration and assessment of additionality” and “Investment Analysis Tool (EB 92 Annex 05)”.

3.3.6 Quantification of GHG Emission Reductions and Removals

The proposed project activity has applied baseline methodology as mentioned in the small scale methodology ACM0002 version 19.0.0. As per the paragraph 42 of the methodology:

“Baseline emissions include only CO2 emissions from electricity generation in power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants”.

The baseline emissions are to be calculated as follows:

$$BE_y = EG_{PJ,y} \times EF_{grid, CM, y} \dots\dots\dots(1)$$

Where:

BE_y = Baseline emissions in year y (t CO2)

$EG_{PJ,y}$ = 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)

$EG_{PJ,y} = EG_{PJ, facility, y}$ (for Greenfield projects paragraph 44 ACM0002)

$EF_{grid, CM, y}$ = Combined margin CO2 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 CO2/MWh)

The Project proponent has adopted the combined margin approach for determination of the grid emission factor as per Tool to calculate the emission factor of an electricity system’ Version 7.0. The PP opted for combined margin emission factor ($EF_{grid, CM, y}$) for the project activity and it has been estimated ex-ante as 0.9368 tCO2/MWh (National electricity grid in India). It will remain fixed throughout the crediting period for the project activity as opted by PP. The combined margin emission factor is obtained from the three years generation weighed average of the operating margin emission factor and the latest year build margin emission factors by applying suitable weights (i.e. 75% to operating margin emission factor ($EF_{grid, OM, y}$) and 25% to build margin emission factor ($EF_{grid, BM, y}$) as referred to the EF tool version 7.0.

The weighted operating margin value of 0.9610 tCO2/MWh and build margin value of 0.8644 tCO2/MWh for Indian electricity grid have been referred from CO2 baseline database published by Central Electricity Authority, Govt. Of India, version 14 dated December 2018/18/. This is the latest available CO2 baseline database at the time of the VCS PD submission for validation of the project activity. This is found to be appropriate and it is accepted.

Determination of $EG_{PJ,y}$ (EG_y) (Electricity supplied to GUVNL):

The PP has considered the value of EG_y as 388,340 MWh/year for the project activity as per the third party PLF assessment reports/10/ and the estimated annual average of emission reductions is arrived as 363,796 tCO2e and total 3,637,960 tCO2e over the 10 year crediting period. The validation team confirms that the estimates of baseline emissions can be replicated using the information provided in the final VCS PD/1/. It can also be verified using the emission reduction calculation spread sheet/02/. Hence, it is concluded that the approach to calculate emission reductions is clearly demonstrated in the VCS PD /01/ is appropriate.

Baseline emissions as per the equation (1) above:

$$BE_y = 388,340 \text{ MWh} \times 0.9368 \text{ tCO}_2/\text{MWh}$$

$$BE_y = 363,796 \text{ tCO}_2$$

3.3.7 Methodology Deviations

No methodology deviations identified.

3.3.8 Monitoring Plan

According to the applied methodology, ACM0002, version 19.0, the only parameter to be monitored is the “Quantity of net electricity generation supplied by the project plant/unit to the grid in year y”. This parameter for the project activity named as “Electricity supplied to GUVNL” (EG_y).

It is to be noted that in Gujarat where the project activity located, dedicated metering system does not exist, hence it is not feasible to measure the quantity of electricity export and import by individual WTG. It was observed during the site visit that, the WTGs (project activity and non-project) are connected to the common metering system at keshiya (33/66kV) sub-station and Tarana (33/66 kV) sub-station.

Hence, in order to calculate the net electricity exported to the grid by the WTGs of the project activity, the state electricity utility uses an apportioning procedure that has been correctly described in section 4.3 of the VCS PD/01/. This was also verified by interviewing the staff at the sub-station and the officials of the state utility/34/.

As verified through Article 5 of PPA/08/ and clause 3 in section C of share certificates issued by state utility/31/ that the apportioning procedure is carried out by the state utility and the PP has no role in this calculation. It was confirmed through the interviews of representatives of the O&M provider during the site visit, that the procedure to derive the electricity exported to the grid by each project owner is completely under jurisdiction of the state utility.

Values of the parameter “Electricity supplied to GUVNL” is directly sourced from the monthly “Share certificates” issued by GETCO/31/ that indicates the share of electricity for project activity received at the respective sub-stations.

The Share certificates are prepared and endorsed by GETCO, an external government agency and the PP has no influence in the entire procedure. Hence, the data issued by the state electricity board through the Share certificate is deemed authentic.

During the site visit, it was observed that, the WTGs belonging to the project activity are connected to the grid through an appropriate power evacuation system. Appropriate metering system and calculation procedures are transparently described in the monitoring plan to enable accurate determination of emission reductions achieved by the project activity.

Note: The net electricity supplied to the grid by the project activity (EG_y) is a calculated value which is arrived by using the value of electricity generation by project WTGs, non-project WTGs at individual energy meters and the cumulative value of electricity import and export of the entire number of WTGs connected to substation (i.e. including project and non-project WTGs) as measured at the pooling substations. Since the measurement of electricity generation of non-project WTGs at energy meter is non-feasible for PP and The main meter & check meter reading at the substation and ABT meter are under the jurisdiction of GETCO only and are not shared with the individual project developers, hence, these parameter have not been included as the monitoring parameters in section 4.2 of VCS PD.

3.4 Non-Permanence Risk Analysis

This is not applicable for the proposed VCS project as it is Non AFOLU project.

4 SAFEGUARDS

4.1 No Net Harm

There is no negative impact to any socio economic conditions of the region due to the project activity. No adverse environmental impact has been envisaged in the project activity, still all the necessary clearances from the state pollution control board, state forest department as well the ministry of environment and forests has been obtained..

4.2 Environmental Impact

The project proponent has mentioned in the PD/01/ that the present project activity does not require EIA to be carried out because as per the schedule 1 of Ministry of Environment and Forest notification dated 14/09/2006/27/ <http://envfor.nic.in/legis/eia/so1533.pdf> and further notification number 3067 from MoEF dated 01/12/2009/25/ <http://moef.nic.in/downloads/rules-and-regulations/3067.pdf> , activities are required to undertake environmental impact assessment studies. The proposed project activity does not fall under the listed categories and hence not required an EIA to be done. The project participant has nevertheless submitted a No Objection Certificates from state nodal agency/17/. Thus the adequacy of the analysis carried out by the project participant for the impact of the implementation of the project activity on the environment has been validated as per paragraphs 126 and 129 of VVS for PAs version 02.0.

The validation team is of the opinion that the project complies with environmental regulations in India.

4.3 Local Stakeholder Consultation

The local stakeholder consultation process has been described in detail, by the PP, in section 5.3 of the VCS PD. The project participant identified the relevant stakeholder like the local village head and the villagers (from the villages listed in the PD), O&M contractor team as local stakeholders for the project activity. Thus, the validation team is of the opinion that the relevant stakeholders have been consulted appropriately and adequately.

The stakeholder consultation meeting was conducted on 25/09/2019 at local Keshiya wind farm site office. Stakeholders were invited through public notices (dated 22/08/2019) and announcement by the PP. The documentary evidence provided as proof of date of the invitation, meeting; and mode of invitation/9/ has been checked by the assessment team and found to be appropriate.

After sharing information with the local stakeholders about the company and the purpose of proposed activity, the stakeholders were briefed about non-conventional energy sources and their importance. The PP also informed the stakeholders about their intention of securing carbon credit benefits for the proposed project activity. The Minutes of the meeting of the stakeholder meeting and attendance sheet/9/ have been submitted by the PP.

During the site visit the assessment team interviewed some of the local villagers. Based on the replies of the villagers, the validation team was convinced that the process of stakeholder consultation was carried out as described in the VCS PD/01/. The villagers also confirmed that they were invited for the meeting through public notice. This was found to be consistent with the invitation process mentioned in the VCS PD /01/.

Overall, there was agreement among the stakeholders that the proposed project activity would lead to the overall development of the area, mainly by generating employment opportunities and improving the infrastructure leading to an improved life for the villagers. The local stakeholders interviewed during the site visit endorsed this view.

It is also confirmed that local stakeholders were invited by the project proponent to comment on the proposed project activity prior to the submission of the PD for validation

4.4 Public Comments

In accordance with the requirement in clause 3.17.5 of the VCS standard version 3.7 “All VCS projects are subject to a 30-day public comment period. The date on which the project is listed on the project pipeline marks the beginning of the project’s 30-day public comment period”.

The PP listed their project activity in the VCS pipeline for 30 days from 20/11/2019 20/12/2019 (: https://www.vcsprojectdatabase.org/#/pipeline_details/PL2019)/06/ for public comments. No comments received during the commenting period.

5 VALIDATION CONCLUSION

Infinite Solutions has contracted the Earthood Services Private Limited (also referred to as ESPL) to validate and verify the project: “100 MW grid connected Wind Power project in Jamnagar Gujarat, India” with regard to VCS Version 3 requirements and the information provided by the project proponent related to the project design, operation, monitoring and reporting. A risk-based approach has been followed to perform this validation and verification. In the course of the joint validation & verification 02 Corrective Action Requests (CARs), 01 Clarification requests (CLs) were raised and successfully closed.

No limitations or doubts were identified related to the validation.

ESPL has reviewed the project description documents and subsequently carried out site visit interviews to confirm the fulfilment of stated criteria.

The purpose of this project activity is to generate electricity using renewable sources (wind) and export it to Gujarat Urja Vikas Nigam Limited (GUVNL) which is connected Indian national grid, thereby displacing the grid generated electricity.

The project activity has applied the baseline and monitoring methodology, ACM0002: Grid-connected electricity generation from renewable sources, Version 19.0, which is an approved methodology under the CDM programme and is acceptable under VCS Version 3. The baseline has been determined in accordance with the stated approved baseline methodology.

As summary the validation team able to conclude that:

- The project is in line with all relevant host country criteria (India) and all relevant VCS version 3 program guidelines requirements.
- The project additionality is sufficiently justified in the VCS PD.
- The monitoring plan is transparent and adequate and in line with applied baseline and monitoring methodology of ACM000, version 19.
- The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 363,796 tCO₂e/year is most likely to be achieved within the 10 years (renewable) crediting period.
- The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation as outlined under VCS version 3.

The conclusions of this report demonstrate that the proposed VCS project, as described in the VCS PD, conforms to all applicable validation criteria.

Approved by



Dr. Kaviraj Singh

Managing Director

Earthood Services Privated Limited

Date: 24/12/2019

Place: Gurugram, Haryana

APPENDIX 1: Document References

Ref. No	Title of Document	Version	Date
1	Project Description	01	07/11/2019
		02	13/12/2019
		03	21/12/2019
2	Emission Reductions Calculation Spread sheet	01	07/11/2019
3	Combined IRR and Benchmark Analysis Spread sheet	01	07/11/2019
		02	21/12/2019
4	ACM0002, "Grid-connected electricity generation from renewable sources"	19.0	-
5	Tool to calculate the emission factor for an electricity system	07.0	EB 100 Annex 4
6	VCS pipeline https://www.vcsprojectdatabase.org/#/pipeline_details/PL2019	-	-
7	Commissioning Certificates for the WTGs involved in the project activity	-	Commissioned between 21/06/2019 to 07/12/2019
8	Power purchase agreement signed by PP with state electricity authority	-	25/01/2018
9	Local stakeholder documents – Minutes of meeting, attendance sheet, invitation letters, public notice	-	25/09/2019
10	Third party PLF assessment report	- -	14/07/2017
11	Clean Development Mechanism Validation and Verification Standard	02.0	29/11/2018
12	Tool for the demonstration and assessment of additionality	07.0.0	EB 70, Annex 8
13	Technical specifications of WTGs provided by supplier	-	-
14	Project Assessment Report (PAR) prepared by SITAC RE	-	July 2017
15	Copy of Board resolution	-	17/07/2017
16	Purchase Order raised by PP to WTGs supplier	- -	24/09/2018
17	No Objection Certificates for installation of WTGs from GEDA(Gujarat Energy Development Authority)	-	04/08/2019
18	CO ₂ baseline database published (in Dec 2018) by Central Electricity Authority, Govt. Of India	14	Dec 2018
19	GERC tariff order	-	02/08/2016
20	Approval to the drawing for the electrical installation of 630.0 sq. mm. 66 KV XLPE U/G Power Cable (0.25 KM)		22/05/2019
21	Income Tax Act 1961 (Source: Appendix IA of Income Tax Rules) http://taxguru.in/company-law/rates-of-depreciation-	-	-

	under-the-companies-act-as-mentioned-in-schedule-xiv.html		
22	IT depreciation rate http://www.incometaxindia.gov.in/charts%20%20tables/depreciation%20rates.htm	-	-
23	Income tax rate and Minimum Alternate Tax (MAT) rate http://www.incometaxindia.gov.in/Tutorials/2%20Tax%20Rates.pdf Service tax rate: http://www.taxdose.com/service-tax-rate-chart-for-fy-2016-17-with-service-tax-rate-15-from-1st-june-2016/ Surcharge and Education cess: http://www.incometaxindia.gov.in/Tutorials/2%20Tax%20Rates.pdf GST: https://cleartax.in/s/gst-hsn-lookup	-	-
24	Reserve Bank of India's Survey of Professional Forecasters: Results of 46 th Round (Q2:2017-18) https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=17616	-	07/06/2017
25	- SCHEDULE (Page no 10) of the notification S.O. 1533 (E) dated 14/09/2006 published by the Ministry of Environment and Forests (MoEF), Government of India - Schedule of the notification S.O. 3067 dated 01/12/2009 published by the Ministry of Environment and Forests (MoEF), Government of India http://www.moef.nic.in/legis/env_clr.htm	-	-
26	Detailed procedure on REC mechanism dated 01/06/2010 by Central Electricity Regulatory Commission (http://www.nerldc.org/Docs/Order_for_Detailed_Procedure_01-06-2010.pdf) REC registry (Source : https://recregistryindia.nic.in/)		
27	Investment Analysis tool , EB 92, Annex 05	07.0	-
	Investment Analysis tool , EB 105, Annex 06	10.0	
28	VCS Standard	Version 3.7	21/06/2017
	VCS Program Guide	Version 3.7	21/06/2017
29	Letter of declaration dated from PP regarding not having created or sought any other form of environmental credit for the same period	-	12/12/2019
30	Regulations/act in the state (Gujarat): Electricity Act 2003 (https://www.gercin.org/electricityact-2003/) GERC RE regulations (https://www.gercin.org/regulation-category/re-regulations/) Gujarat ACT NO. 24 OF 2003	-	-

	(https://www.gercin.org/gujaratact-2003/)		
	National Electricity Policy 2005		
	Tariff Policy 2006		
31	Site visit attendance sheet ,photographs	-	12/12/2019

APPENDIX 02: Abbreviations

ABT	Availability Based Tariff
ACM	Approved Consolidated Methodology
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEA	Central Electricity Authority
CL	Clarification Request
DISCOM	Distribution company
EB	Executive Board
EPC	Engineering and Procurement Contractor
ER	Emission Reductions
FAR	Forward Action Request
GEDA	Gujarat Energy Development Agency
GETCO	Gujarat Energy Transmission Corporation Limited
GHG	Greenhouse Gases
ISO	International Organization for Standardization
JMR	Joint Meter Report
LCS	Local Controller System
MGRs	Monthly Generation Reports
MP	Monitoring Period
MR	Monitoring Report
MW	Mega Watt
MWh	MegaWatt hour
OM	Operating Margin
O&M	Operation & Maintenance
PD	Project Description
PP	Project proponent
PPA	Power Purchase Agreement
QA/QC	Quality Assurance/Quality Control

REC	Renewable Energy Certificates
tCO ₂	Tonnes of Carbon Dioxide
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VCSA	Verified Carbon Standard Association
VCU	Verified Carbon Unit
WEG	Wind Energy Generator
WTG	Wind Turbine Generator

APPENDIX 03: Competency Statement

Competence Statement			
Name	Ravi Kant Soni		
Country	India		
Education	B. Tech. (Mechanical Engineering) M. Tech. (Energy Management)		
Experience	8 Years +		
Field	Energy and Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	AMS-I.D., AMS-I.C., ACM0002		
Local expert	YES (India)		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert	YES (TA 1.2)		
Reviewed by	Abhishek Mahawar	Date	01/03/2018
Approved by	Kaviraj Singh	Date	01/03/2018

Competence Statement	
Name	Shreya Garg
Country	India
Education	M.Sc. (Climate Science & Policy), TERI University
Experience	6 Years +
Field	Climate Change
Approved Roles	

Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	AMS.I.A., AMS.I.C., AMS.I.D., AMS.I.F., AMS.II.D., AMS.II.G., AMS.II.J., AMS.III.AV., ACM0002, ACM0012		
Local expert	YES (India)		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert	YES (TA 1.2, TA 3.1)		
Reviewed by	Abhishek Mahawar	Date	01/03/2018
Approved by	Ashok Gautam	Date	01/03/2018

APPENDIX 04: Findings Overview

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

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

Table 2. CL from this verification

CL ID	01	Section no.	4.3	Date : 12/12/2019
Description of CL				
1. Please submit source document for the parameter EG_y and invoices raised to power purchaser entity for the current monitoring period. 2. Please submit declaration confirming that the GHG Emission reductions or removals generated by the project activity will not be used for compliance with an emission trading program or to meet binding limits on GHG Emissions. 3. During the site visit, it is verified that some of the WTGs are commissioned, please clarify why the details regarding the same is not updated in the PD. 4. As per the discussion with site personnel during the site visit and document review, it is confirmed that total installed capacity of project is 105 MW (50 number of WTGs, each of 2.1 MW), however the PD indicates the project capacity as 100 MW. Kindly clarify the inconsistency.				
Project participant response				Date : 13/12/2019

1. PP is hereby submitting the available commissioning certificate, SLD and share certificate and invoice raised for the project activity for cross check.
2. PP is hereby submitting declaration confirming that the GHG Emission reductions or removals generated by the project activity will not be used for compliance with an emission trading program or to meet binding limits on GHG Emissions.
3. PP has revised PD to provide the details of commissioned WTGs under Appendix -1.
4. PP has revised PD to correctly report the capacity of project activity as 105 MW (50 * 2.1) as per the Purchase order and available commissioning certificate.

Furthermore, PP would like to clarify that as per PPA and the GUVNL guidelines Capacity of project can be within the +/-5% variation of the contracted capacity. Necessary evacuation consent shall have to be arranged from GETCO/CTU for +5% of capacity. PP is under procedure for the same and will have the evacuation arrangement before the installation of 50 WTGs as project is not commissioned completely as of yet and PP is under the contracted capacity.

Documentation provided by project participant

Commissioning Certificates

PPA

Share Certificate

Invoices

Declaration for no double accounting of ER.

PD Version 2

ER Sheet Version 1

Financial sheet Version 01

Purchase order

NOCs/Approvals

Other Project confidential documents

LSM documents

DOE assessment

Date: 20/12/2019

1. Project proponent has submitted share certificates & invoices (source document for the parameter EG_y) found to be satisfactory, hence accepted.
2. Declaration confirming that the GHG Emission reductions or removals generated by the project activity will not be used for compliance with an emission trading program or to meet binding limits on GHG Emissions, is submitted and found to be acceptable.
3. The PP has updated the information about the commissioned WTGs in the revised PD, found consistent with the commissioning certificates.
4. Total installed capacity of project is 105 MW (50 number of WTGs, each of 2.1 MW), and the same is indicated in the revised PD. Also the capacity of project is confirmed through the PPA signed with state utility, hence accepted.

CL #1 is closed.

Table 3. CAR from this verification

CAR ID	02	Section no.	3.3.5	Date : 12/12/2019
Description of CAR				
Section 2.5 of VCS PD:				
1. Please clarify why the input values used in the investment analysis are not mentioned. 2. Please submit the relevant evidences for each input parameters considered in the investment analysis. 3. Please clarify why latest version of Investment tool is not referred while demonstrating additionality. 4. Common practice analysis: Please submit CPA sheet and provide the source documents/links referred to identify the projects for common practice analysis and also clarify about the criteria to identify the projects under "different technology". 5. Please submit the IRR and benchmark calculation sheet.				

Project participant response	Date : 13/12/2019
1. PP has revised PD to provide the input values used in the investment analysis. Please refer section 2.5 of PD for the revisions incorporated in line with the PD filling requirement. 2. PP is hereby submitting all the relevant supporting documents for each of the input parameters considered in the investment analysis. 3. PP has revised PD to adopt the latest version of Investment tool while demonstrating additionality. PP is hereby submitting the financial sheet – IRR calculation along with the supporting documents. 4. PP has conducted the common practice analysis in line with the tool Methodological tool: Common Practice, version 03.1. and hereby submitting the common practice analysis sheet separately along. Also, provided the links and details of projects within the work book. Based on the outcome of CPA it is confirmed that project is not a common practice. 5. PP is hereby submitting the IRR calculation sheet & benchmark sheet – the financial sheet along with the supporting documents.	
Documentation provided by project participant	
Commissioning Certificates PPA Share Certificate Invoices Declaration for no double accounting of ER. PD Version 2 ER Sheet Version 1 Financial sheet Version 01 Purchase order NOCs/Approvals Other Project confidential documents LSM documents	
DOE assessment	Date: 20/12/2019
1. Input values used in the investment analysis are mentioned in the revised PD, found to be consistent with IRR sheet. 2. The PP has submitted the relevant evidences for each input parameters considered in the investment analysis, found to be satisfactory. 3. The project proponent has submitted the IRR and benchmark calculation sheet and latest version of Investment tool is referred while demonstrating additionality, however it is not clear why the default value for return on equity available at the time of decision making is not used for calculation of benchmark. Open 4. Project proponent has submitted CPA sheet and provide the source documents/links referred to identify the projects for common practice analysis and the criteria to identify the projects under “different technology” as described in the PD is appropriate and justified, hence accepted.	
CAR #2 is open	
Project participant response	Date : 21/12/2019
3. PP has revised IRR sheet to consider the default value for return on equity available at the time of decision making for calculation of benchmark and updated the PD section 2.5 for updating the corresponding values breaching the benchmark.	
Documentation provided by project participant	
IRR Sheet Version 2 PD Version 3	
DOE assessment	Date: 22/12/2019
Default value for return on equity is updated in section 2.5 of the PD, referring latest version of Investment tool while calculating the benchmark, found to be satisfactory, hence accepted. CAR #2 is closed.	

CAR ID	03	Section no.	4.3	Date : 12/12/2019
Description of CAR				
Section 5.3 of VCS PD:				
1. Please clarify why the procedures or methods used for engaging local stakeholders e.g dates of announcements or meetings, periods during which input was sought and location of stakeholder meeting not mentioned. 2. Please submit the attendance sheet and MoM of the local stakeholder meeting conducted for the project activity.				
Project participant response				Date : 13/12/2019
1. PP is hereby submitting the necessary documents pertaining to LSM conducted for the project activity and update the information in the relevant section 5.3 of the PD. Also, provided the snapshot of Public notice and MOM in the Appendix -3 of the PD. 2. PP is hereby submitting the attendance sheet and MoM of the local stakeholder meeting conducted for the project activity.				
Documentation provided by project participant				
Public Notice Local Stakeholder Consultation MOM Attendance Sheet PD Version 2				
DOE assessment				Date: 20/12/2019
Procedures or methods used for engaging local stakeholders including dates of meetings, periods during which input was sought and location of stakeholder meeting is updated in section 5.3 of the PD, found to be satisfactory. Project proponent has submitted the attendance sheet and MoM of the local stakeholder meeting conducted for the project activity and found to be appropriate, hence accepted. Please clarify why the mechanism/procedure to be followed in respect of the ongoing communications with local stakeholder consultation as part of each subsequent verification is not described in the PD, in line with the guidance provided under section 3.17.4 of VCS standard v 3.7. Open				
Project participant response				Date : 21/12/2019
PP has revised PD section 5.3 to update the mechanism/procedure established at site in respect of the ongoing communications with local stakeholder consultation as part of each subsequent verification.				
Documentation provided by project participant				
PD Version 3				
DOE assessment				Date: 22/12/2019
The mechanism/procedure established at site in respect of the on-going communications with local stakeholder consultation as part of each subsequent verification is appropriately described in section 5.3 of the PD, hence accepted. CAR #3 is closed.				

Table 4. FAR from this verification

FAR ID	NA	Section No.	NA	Date :DD/MM/YYYY
Description of FAR				
No FAR rose during the verification.				
Project participant response				Date :DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				Date: DD/MM/YYYY
NA				