

JOINT VALIDATION REPORT FOR RENEWAL OF CREDITING PERIOD & VERIFICATION REPORT FOR “51 MW WIND POWER PROJECT AT CHITRADURGA”



Document Prepared By: Earthood Services Private Limited

Project Title	51 MW Wind Power Project at Chitradurga
Report Title	Joint Validation For Renewal of Crediting Period & Verification Report For “51 MW Wind Power Project at Chitradurga”
Version	02
Report ID	VCS.VER.18.22
Verification Period	06/06/2018 to 30/09/2018 (both days included)
Client	M/s. NSL Renewable Power Private Limited
Pages	46
Date of Issue	08/02/2019
Prepared By	Earthood Services Pvt. Ltd.
Contact	Regd. Office: 424-A, Tower B3, Spaze I-Tech Park, Sector 49, Sohna Road, Gurgaon-122018, INDIA Tel:+91 124 4204599 Fax:+91 124 4204599 Website: www.earthood.in Email: info@earthood.in
Approved By	Technical Reviewer: Ravi Kant Soni Technical Expert (TA 1.2): Ravi Kant Soni
Work Carried Out By	Team Leader: Vivek Kumar Ahirwar; Technical Expert (TA 1.2) and Meth Expert: Vivek Kumar Ahirwar ; Local Expert: Vivek Kumar Ahirwar

Summary:

Earthood Services Private Limited (ESPL) has been contracted by M/s. NSL Renewable Power Private Limited to conduct the joint validation for renewal of crediting period and verification of the project “51 MW Wind Power Project at Chitradurga”, VCS ID 706, against VCS Standard Version 3.7.

The validation for renewal of crediting period and verification includes confirming the project’s design description, project’s baseline, monitoring plan and the project’s compliance with relevant VCS and host party criteria and implementation of the monitoring plan of the Joint PD for renewal of crediting period and MR (Project ID 0706) and the application of the monitoring methodology as per ACM0002 version 19: “Grid-connected electricity generation from renewable sources”. A site visit was conducted to verify the data submitted in the monitoring report.

The purpose of this project activity is to generate clean form of electricity through renewable wind energy source for sale of electricity to the grid. The project activity consists of 4 WTGs (2100kW capacity each) and 28 WTGs (1500 kW capacity each), making the total installed capacity to be 50.4 MW at the Bhimasamudra site in Chikkandavadi and Kallavangathihalli village of Chitradurga district in the state of Karnataka, India. The project will replace anthropogenic emissions of greenhouse gases (GHG’s) estimated to be approximately 127,993 tCO₂e per year, thereon displacing 135,084 MWh/year amount of electricity from the generation-mix of power plants connected to the Indian electricity grid, which is mainly dominated by thermal/fossil fuel-based power plant. Total estimated GHG emission reductions for the chosen 10 year renewable crediting period will be 1,279,930 tCO₂e.

The review of the joint project design documentation for renewal of crediting period and 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.

The assessment team is able to conclude that:

- i. A reasonable level of assurance has been applied.
- ii. All data and information used for ex-ante calculation of emission reductions is correctly applied.
- iii. The project is in line with all relevant host country legislation.
- iv. The project additionality is not required to be reassessed, however it is sufficiently justified in the VCS-PD.
- v. The monitoring plan is in accordance with the approved methodology, transparent and adequate.
- vi. Project deviations have sufficiently been addressed and justified.
- vii. The calculation of the baseline emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 1,279,930 tCO₂e are most likely to be achieved within the 10 year renewable crediting period.

The conclusions of this validation report show, that the project, as it was described in the updated project documentation, is in line with all criteria applicable for the validation against the VCS standard Version 3.7 standard without any qualifications or limitations.

The purpose of the verification is to review the Joint VCS PD for RCP & MR for the monitoring results and verify that monitoring methodology was implemented according to monitoring plan and monitoring data, further based on review of ER sheet confirm that the reductions in anthropogenic emissions by sources is sufficient, definitive and presented in a concise and transparent manner. In particular, monitoring plan, Joint VCS PD for RCP & MR, ER sheet and the project’s compliance with relevant VCS, UNFCCC and host party criteria are verified in order to confirm that the project has been

implemented in accordance with design and conservative assumptions, as documented.

The scope of the verification included as verification of project implementation and operation with respect to the Joint PD for RCP & MR, implemented monitoring plan with the Joint PD for RCP & MR and applied baseline and monitoring methodology, the actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan , Evaluation of the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement, confirmation of reported GHG emission data is sufficiently supported by evidence.

A risk based approach has been followed to perform this verification. In the course of validation and verification, 03 Corrective Action request (CARs) and 01 Clarification request (CLs) were raised and successfully closed. There is no FAR raised.

ESPL confirms that that the project is meeting the criteria specified by Joint PD & MR template version 3.1, VCS Standard version 3.7 and applied methodology ACM0002 (version 19), and hence be successfully validated, verified and further certified for emission reductions under VCS. Further confirms a combined positive validation for RCP and verification opinion confirming the project complies with the applicable VCS requirements, thus recommending the project for registration and issuance.

Our opinion relates to the projects GHG emissions and the resulting GHG emission reductions reported and related to the valid project baseline and monitoring and its associated documents. Based on the information seen and evaluated we confirm that the emission reductions from the project activity “51 MW Wind Power Project at Chitradurga” in India during the period 06/06/2018 – 30/09/2018 (including both days) amount to 47,875 tonnes of CO₂e.

Table of contents

1	Introduction	6
1.1	Objective	6
1.2	Scope and Criteria	7
1.3	Level of Assurance.....	8
1.4	Summary Description of the Project	9
2	Validation and Verification Process	9
2.1	Method and Criteria.....	9
2.2	Document Review	9
2.3	Interviews	10
2.4	Site Inspections	11
2.5	Resolution of Findings.....	11
2.5.1	Forward Action Requests.....	12
3	Validation Findings.....	12
3.1	Project Details	12
3.2	Participation under Other GHG Programs	14
3.3	Application of Methodology	14
3.3.1	Title and Reference	14
3.3.2	Applicability	15
3.3.3	Project Boundary.....	20
3.3.4	Baseline Scenario	20
3.3.5	<i>Additionality</i>	24
3.3.6	<i>Quantification of GHG Emission Reductions and Removals</i>	25
3.3.7	Methodology Deviations	27
3.3.8	Monitoring Plan	27

3.4	Non-Permanence Risk Analysis.....	27
4	safeguards	27
4.1	No Net Harm	27
4.2	Environmental Impact	27
4.3	Local Stakeholder Consultation	28
4.4	Public Comments	29
5	Verification Findings.....	29
5.1	Accuracy of GHG Emission Reduction and Removal Calculations	29
5.2	Quality of Evidence to Determine GHG Emission Reductions and Removals	29
6	Validation and Verification conclusion	38
	APPENDIX 1: Document References	41
	APPENDIX 2: Abbreviations	42
	APPENDIX 3: Findings Overview	43
	APPENDIX 4: Competency Statements	45

1 INTRODUCTION

1.1 Objective

Earthood Services Private Limited (ESPL) has been contracted by M/s. NSL Renewable Power Private Limited, (project proponent), to undertake the validation for renewal of crediting period and verification of the project titled “51 MW Wind Power Project at Chitradurga”. The verifiers have reviewed the GHG data collected to date for the monitoring period from 06/06/2018 to 30/09/2018 (both days included) covered in this verification. The objective of the combined validation for renewal of crediting period and verification is to have an independent third-party assessment of the Joint PD for RCP & MR and supporting documentation to ensure compliance with the rules, regulations and guidelines by CDM and VCS requirements. In particular;

- The project's baseline is assessed against “ACM0002 - Version 19”
- The project's monitoring plan is assessed against “ACM0002 - Version 19”
- The project's justification is assessed against Version 3.0.1 of “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period”.
- The projects compliance with, the requirements of Article 12 of the Kyoto Protocol, the CDM Modalities and Procedures as agreed in the Marrakech Accords under decision 3/CMP.1, the annexes to this decision, subsequent decisions and guidance made by COP/MOP & CDM Executive Board and other relevant rules, including the Host Country legislation and sustainability criteria along with VCS guideline and standard version 3.7
- CDM project standard for project activities Version 02.0
- CDM project cycle procedure for project activities Version 02.0
- VCS standard v3.7
- VCS guideline v3.7

Particularly, *inter alia*, the validity of project's baseline and regulatory surplus are validated in order to confirm the compliance as outlined under paragraph 3.8.5 for the renewal crediting period. Validation is seen as necessary to provide assurance to stakeholders on the quality of the project and its intended generation of Verified Carbon Units (VCUs) / Emission reductions.

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

This report contains the findings and resolutions from the validation for RCP and verification of the project activity.

1.2 Scope and Criteria

For validation for renewable of crediting period:

The validation assessment was carried out in accordance with the requirements of VCS standard version 3.7 and included an assessment but not limited to, of the following:

Demonstration of the regulatory surplus, in reference to the additionality of the project, in accordance with the clause 4.6.3 VCS standard version 3.7.

Validity of the original baseline scenario reviewing the following criteria:

- Evaluation of the impact of new relevant national and/or sectoral policies and circumstances on the validity of the baseline scenario.
- Assessment of the GHG emissions associated with original baseline scenario using the latest version of the CDM Tool to assess the validity of the original/ current baseline.
- If the original baseline scenario is no longer valid, whether current baseline scenario is established in accordance with the VCS rules.
- The project description, containing updated information with respect to the baseline, the estimated GHG emission reductions or removals and the monitoring plan, submitted for validation is based upon the latest approved version of the methodology or its replacement.
- The updated project description is validated in accordance with the VCS rules.

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).

For Verification:

The scope of the verification was the independent and objective review and ex-post determination of the monitored reductions in GHG emissions from “51 MW Wind Power Project at Chitradurga”. The verification of this project was based on the validated VCS joint project description & monitoring report and supporting documents submitted by the project proponent to the verification team. The documents were reviewed against the following guidance and protocols:

- VCS Program Guide (v3.7, dated 21/06/2017)
- VCS Standard (v3.7, dated 21/06/2017)
- VCS Program Definitions (v3.7, dated 21/06/2017)
- VCS Registration & Issuance Process (v3.8, dated 21/06/2017)
- VCS Validation and Verification Manual (v 3.2, dated 19/10/2017)
- UNFCCC CDM approved methodology ACM0002 (version 19)

The validation for RCP & verification 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 verification for RCP and validation has been planned and organized to achieve a

☒ Reasonable level of assurance

☐ Limited level of assurance.

The verification team verified the complete monitoring data for all the parameters of the monitoring plan and confirms that the reported emission reductions are free from any type of material errors. Therefore, ESPL confirms that the verification is conducted with reasonable level of assurance.

1.4 Summary Description of the Project

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

The project activity consists of 4 WTGs (2100kW capacity each) and 28 WTGs (1500 kW capacity each), making the total installed capacity to be 50.4 MW at the Bhimasamudra site in Chikkandavadi and Kallavangathihalli village of Chitradurga district in the state of Karnataka, India.

Location of the project was verified through Google Map (<https://www.gps-coordinates.net/>) and found consistent with the data provided in the registered PD. The WTGs generate power and it is further stepped up to 33 kV for further distribution by the state utility. This information was verified during physical site visit and found to be in line with the details provided in the registered PD and the revised PD as well.

The Project Start Date is 06-June-2008, when the first WTG No HK 3 of the Project activity was commissioned and started electricity generation. The same was verified against the registered VCS PD and commissioning certificates. The emission reductions from the project activity during the period 06/06/2018 – 30/09/2018 (including both days) amount to 47,875 tonnes of CO₂e.

2 VALIDATION AND VERIFICATION PROCESS

2.1 Method and Criteria

ESPL assessed and determined whether the proposed implementation and operation of the project activity, and the steps taken to report emission reductions comply with the criteria and relevant guidance provided by the VCS Board. The validation for RCP/verification process consist of the following three phases;

- A desk review of the VCS PD for RCP and VCS MR
- Site visit and follow up interviews with project stakeholders
- The resolution of outstanding issues and issuance of final report and opinion.

2.2 Document Review

For Validation of RCP:

The validation team has conducted the validation using the VCS Standard and the ACM0002 version 19 methodology as the reference criteria.

The validation team had done the completeness check of updated 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:

- i. Information of project details in compliance with VCS PD template
- ii. Appropriateness of methodology ACM0002 version 19 applied to the project activity
- iii. Compliance with relevant laws and regulations
- iv. Correctness of application of baseline and monitoring methodology
- v. Monitoring plan described in the updated VCS PD
- vi. Proof of listing of project ownership
- vii. Calculation of grid emission factor, etc. where applicable.

The validation is performed primarily as a document review of the registered VCSPD, updated VCS PD for RCP, VCS validation report and previous verification report. The assessment team also reviewed the documents related to project design like commissioning certificates, and PPA.

The assessment is performed by a validation team using a protocol. The cross checks between information provided in the updated VCS PD and information from sources other than those used, if available, the team's sectoral or local expertise and, if necessary, independent background investigations. The details of the documentation reviewed during the validation are provided under Appendix 2 of this report.

For Verification:

The verification is performed primarily as a document review of the joint PD and MR and associated documents as stated in details in appendix 1 of this document. The assessment is performed by a verification team using a protocol. The cross checks between information provided in the Monitoring report, VCS PD and information from sources other than those used, if available, the team's sectoral or local expertise and, if necessary, independent background investigations.

2.3 Interviews

The site visit for the project location, by the assessment team, was conducted on 19/10/2018 and the following stakeholders were interviewed.

S N	Name	Organization
1	Mr. M. Venkat	M/s. NSL Renewable Power Private Limited
2	Mr. B. Ramesh	M/s. NSL Renewable Power Private Limited
3	Mr. Girish Gowda	M/s. NSL Renewable Power Private Limited

The topics covered during interview ranges from general features and implementation of project to technical details of the project like calibration details, monitoring and measuring system and data collection, recording and archiving procedures. The assessment was drawn based on the feedback received during interview coupled with the documentation and on-site observations.

2.4 Site Inspections

A site visit was undertaken by ESPL team on 19/10/2018 to carry out the following;

- a. An assessment of the implementation and operation of the registered project activity as per the registered VCS PD and VCS MR;
- b. A review of information flows for generating, aggregating and reporting the monitoring parameters;
- c. Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the PD;
- d. A cross check between information provided in the monitoring report and data from other sources such as plant logbooks, inventories, purchase records or similar data sources;
- e. A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PD, the applied methodology including applicable tool(s), and, where applicable, the applied standardized baseline;
- f. A review of calculations and assumptions made in determining the GHG data and emission reductions;
- g. An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

2.5 Resolution of Findings

The objective of this step is to identify, discuss and conclude on the issues related to the monitoring, implementation and operations of the registered project activity that could impair the capacity of the registered project activity to achieve emission reductions or influence the monitoring and reporting of emission reductions. This is done based on the desk review and onsite assessment. The verification team prepares and/or updates a verification protocol (internal document) that records the conformities and non-conformities, which may be of following types;

CAR (Corrective Action Request) is raised if one of the following occurs:

- Non-compliance with the monitoring plan, the methodology or the standardized baseline are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;
- Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

Clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met. All CARs and CLs raised by the ESPL during verification shall be resolved prior to submitting a request for issuance.

FAR (Forward Action Request) is raised during verification if the monitoring and reporting require attention and/or adjustment for the next verification period.

During the validation or RCP and verification process 03 CARs, 01CL and 00 FARs were raised. All the findings that are raised and communicated to project participant during the verification are included under Appendix 4. The section also includes the response, if provided, by the project participants and an assessment by the verification team if it was closed out or otherwise.

2.5.1 Forward Action Requests

The project activity is undergoing periodic verification and validation of renewal crediting period together under VCS; there were no FARs raised during the validation or previous verification.

3 VALIDATION FINDINGS

3.1 Project Details

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

Same as described in the registered VCS PD and updated PD.

Project proponent and other entities involved in the project-

The project proponent is M/s. NSL Renewable Power Private Limited. The assessment has verified this through the commissioning certificate, found to be satisfactory, hence accepted.

Project start date-

Start date of project activity is 06/06/2008, which was the date of commissioning of the first WTG (HK 3). Same as mentioned in the registered VCS PD.

Project crediting period-

As per the registered PD, crediting period was considered from 06/06/2008 to 05/06/2018 which can be renewed twice for the duration of ten year each. However the project technical life is 20 years, hence only once the crediting period can be renewed.

The first crediting period considered was 06/06/2008 to 05/06/2018 and the second crediting period is from 06/06/2018 to 05/06/2028.

Project scale and estimated GHG emission reductions or removals-

The estimated annual emission reductions for the project activity are 127,993 tCO₂e which is less than 300,000 tCO₂e. Hence the category is applicable under "Project".

Project location-

Same as in registered PD.

Conditions prior to project initiation-

Same as in registered PD.

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. 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 assessment 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 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***

Same as in the registered PD. In addition the validation team reviewed the PPA, commissioning certificates issued by state utility.

Emissions trading programs and other binding limits-

The project is not participating in other emission trading programs. The letter of undertaking 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 is registered under the VCS (ID 706) and not listed under REC mechanism as verified from https://www.recregistryindia.nic.in/index.php/general/publics/registered_regens.

Participation under other GHG programs:

The project is registered only under VCS project activity

Project ID: 706

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 and supporting documents as listed in Appendix 2 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 to be complete and accurate. The VCSPD complies with the relevant forms and guidance for completing the VCS PD.

3.2 Participation under Other GHG Programs

The project is registered only under VCS project activity

Project ID: 706

3.3 Application of Methodology**3.3.1 Title and Reference**

The project uses the following approved large-scale CDM methodology:

ACM0002: Grid-connected electricity generation from renewable sources (version 19).

In addition, the project activity also uses the following tools:

- Tool to calculate the emission factor for an electricity system --- Version 07.0
- Tool for the demonstration and assessment of additionality --- Version 07.0.0
- Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period." Version 03.0.1

The methodologies and the tools referenced are valid at the time of joint validation for RCP and verification of the project activity have been checked and confirmed by the assessment team.

3.3.2 Applicability

The project activity applies the approved large-scale CDM methodology; ACM0002, version 19. Applicability criteria for the baseline line methodology are assessed by the validation team by means of document review and interview. Validation team confirms that the project activity meets the criteria of the applied methodology.

Applicability criteria as per methodology	Justification from PP	Means of validation
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).	The project activity is a grid connected Greenfield power plant; therefore satisfy this applicability criterion 1a.	The validation team reviewed the Joint PD for RCP & MR, Power purchase agreement and conducting physical inspections during onsite visit with interviewing representatives of PP confirms that the current project activity involves generation of electricity through renewable energy by operation of green field Wind power plants that supply electricity to the Indian grid. Thus, based on the above, the assessment team concludes that the project activity has successfully complied with requirements of the current applicability criteria 1 (a) of the applied methodology ACM0002, (version 19).
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, solar 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 solar, solar, wave or tidal power capacity addition projects the existing plant/unit	The project activity is a grid connected Greenfield 50.4 MW wind power plant; therefore satisfy this applicability criterion 2a.	The validation team reviewed the Joint PD for RCP & MR and by conducting physical inspections during onsite visit with interviewing representatives of PP confirms that the current project activity involves installation and operation of Wind power plants thereby resulting in generation of electricity through renewable energy. Thus, based on the above, the assessment team concludes that the project activity has successfully complied with requirements of the current applicability criteria 2 (a) of the applied methodology ACM0002, (version 19).

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.		
3. In case of hydro power plants, one of the following conditions shall apply: (a) The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or (b) The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density calculated using equation (3), is greater than 4 W/m²; or (c) The project activity results in new single or multiple reservoirs and the power density, calculated using equation (3), is greater than 4 W/m²; or (d) The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (3), is lower than or equal to 4 W/m², all of the following conditions shall apply: (i) The power density calculated using the total installed capacity of the integrated project, as per equation (4), is greater than 4 W/m²; (ii) Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity;	The project activity is a grid connected Greenfield 50.4 MW wind power plant; therefore this applicability criterion is not applicable to the project activity.	Criterion not applicable as the project is a Greenfield project.

(iii) Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m ² shall be: a. Lower than or equal to 15 MW; and b. Less than 10 per cent of the total installed capacity of integrated hydro power project		
4. In the case of integrated hydro power projects, project proponent shall:	The project activity is a grid connected Greenfield 50.4 MW wind power plant; therefore this applicability criterion is not applicable to the project activity.	Criterion not applicable as the project is a Greenfield project.
5. Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project; or	The project activity is a grid connected Greenfield 50.4 MW wind power plant; therefore this applicability criterion is not applicable to the project activity.	Criterion not applicable as the project is a Greenfield project
6. Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum five years prior to implementation of CDM project activity.	The project activity is a grid connected Greenfield 50.4 MW wind power plant; therefore this applicability criterion is not applicable to the project activity.	Criterion not applicable as the project is a Greenfield Wind power project.

7. 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	(a) The project activity is Greenfield and there is no switching of fossil fuel to renewable energy. Hence the criteria is not applicable to the project activity (b) The project is not a biomass fired power plant. Hence the criteria is not applicable to the project activity	Criterion not applicable as the project is a Greenfield project.
8. 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.	Not applicable, the wind project is a Green field project activity and this project is not the enhancement or up gradation project.	Criterion not applicable as the project is a Greenfield project.
9. In addition, the applicability conditions included in the tools referred to below apply.	Please refer tables below.	Please refer tables below.

Tool to calculate the emission factor for an electricity system - Version 07.0 (EB 100, Annex 04)

This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid (e.g. demand-side energy efficiency projects).	The project is a grid connected Greenfield wind power project and thus the tool is applicable.	The validation team reviewed the Joint PD for RCP & MR/ and confirms that the current project activity complies with the applicability conditions included in the referred tools. Thus, based on the above, the assessment team concludes that the project activity has successfully complied with requirements of the current applicability criteria of the applied methodology ACM0002, (version 19).
--	--	---

Under this tool, the emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants. In the latter case, two sub-options under the step 2 of the tool are available to the project participants, i.e. option II.a and option II.b. If option II.a is chosen, the conditions specified in "Appendix 2: Procedures related to off-grid power generation" should be met. Namely, the total capacity of off-grid power plants (in MW) should be at least 10 per cent of the total capacity of grid power plants in the electricity system; or the total electricity generation by off-grid power plants (in MWh) should be at least 10 per cent of the total electricity generation by grid power plants in the electricity system; and that factors which negatively affect the reliability and stability of the grid are primarily due to constraints in generation and not to other aspects such as transmission capacity.	Steps involved in calculation of Emission Factor are included in section B.6.3 of the PDD as per the requirement of the tool.	The validation team reviewed the Joint PD for RCP & MR and confirms that the current project activity complies with the applicability conditions included in the referred tools.
In case of CDM projects the tool is not applicable if the project electricity system is located partially or totally in an Annex I country.	Project is located in non-Annex I country and hence the tool is applicable.	Project is located in non-Annex I country and hence the tool is applicable.
Under this tool, the value applied to the CO ₂ emission factor of bio fuels is zero.	The project is a wind project and there is no involvement of bio fuels.	Criterion not applicable as the project is a Greenfield project.

Methodological Tool- Tool for the demonstration and assessment of additionality- Version 07.0.0 (EB 70, Annex 08)

Applicability Criteria has been demonstrated in section on additionality below. The project activity qualifies as Type I during every year of the crediting period in accordance with applicable provisions for project activity eligibility as discussed above. Also the total installed capacity of project activity is 50.4 MW which is applicable as per large scale project activities methodology ACM0002: Grid-connected electricity generation from renewable sources Version 19. The project capacity will be always remain the same and hence the project activity will always be large scale project activities throughout the crediting period and thereafter.	The validation team reviewed the Joint PD for RCP & MR and confirms that the current project activity complies with the applicability conditions included in the referred tools.
--	---

3.3.3 Project Boundary

As per §22 of the applied methodology the project boundary is defined as:

“The spatial extent of the project boundary includes the project power plant/unit and all power plants/units connected physically to the electricity system that the CDM project power plant is connected to.”

The information regarding the project boundary has been also correctly given in the Joint PD for RCP & MR. the project boundary includes the wind project, sub-stations, grid and all power plants connected to grid. The project activity is evacuated power to the Indian grid. Therefore the entire Indian grid and all connected power plants have been considered in the project boundary for the VCS project activity.

The assessment team confirms that the project boundary for the project instances is based on the applied methodologies and that there are no sources and gases within the boundary.

The physical delineation of the project boundary and the description of the emission sources and GHGs that are included in the boundary are appropriate for the purpose of calculating project and baseline emissions for the project.

3.3.4 Baseline Scenario

According to VCS Standard, v3.7, paragraph 3.8.5-2) the validity of the original baseline scenario shall be demonstrated when renewing the project crediting period, by means of impacts of new relevant national and/or sectoral policies and actual circumstances.

Paragraph 3.8.5, Clause (2-a) *“The validity of the original baseline scenario shall be assessed. Such assessment shall include an evaluation of the impact of new relevant national and/or sectoral policies and circumstances on the validity of the baseline scenario”.*

VVB assessment:

Relevant mandatory national (ref: <http://www.cercind.gov.in/>) & sectoral policies in Karnataka state and confirmed that there are no national or local laws or regulations that entail the installation of wind power project in Karnataka. Thus it can be concluded that original baseline scenario will remain valid for next crediting period.

Paragraph 3.8.5, Clause (2-b) *“Where it is determined that the original baseline scenario is still valid, the GHG emissions associated with the original baseline scenario shall be reassessed using the latest version of the CDM Tool to assess the validity of the original/ current baseline and to update the baseline at the renewal of a crediting period”.*

VVB assessment:

The project participant has included the assessment of the validity of the original baseline in line with UNFCCC in section 2.4 of the revised VCS PD, including the assessment of original baseline as per the **“Tool to assess the validity of the original/ current baseline and to update the baseline at the renewal of a crediting period, Version 3.0.1”**, which has been concluded to be still valid and applicable for the project.

The tool consists of two steps. The first step provides an approach to evaluate whether the current baseline is still valid for the next crediting period. The second step provides an approach to update the baseline in case that the current baseline is not valid anymore for the next crediting period.

Step 1: Assess the validity of the current baseline for the next crediting period

Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies

As verified above (Para 3.8.5 2-a), there are no national or local laws or regulations that entail the installation of wind power project in Karnataka .Hence it can be concluded that current baseline is in compliance with relevant mandatory national and sectoral policies.

Step 1.2: Assess the impact of circumstances

As per the registered PD, the project activity is wind power project, electricity generated from project being supplied to the Karnataka state electricity grid which part of Indian grid.. Hence grid was considered as appropriate and correct baseline. As discussed under step 1.1 above, there is no change observed in this regard and it can be concluded that the conditions used to determine the baseline emissions in the previous crediting period are still valid.

Complete assessment on the current operation of grid-connected power plants and addition of new generation sources is provided in the revised PD; from which it can be concluded that in the actual baseline scenario it is still predominant the installed capacity based on fossil fuel sources.

Step 1.3: Assess whether the continuation of use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested.

The lifetime of WTGs installed for the project activity is 20 years; hence baseline equipment's (WTGs) continuously used for electricity generation during next crediting period without any investment. The assessment team is able to conclude that an investment is not the most likely scenario for the renewal crediting period under consideration.

Step 1.4: Assessment of the validity of the data and parameter

"Where emission factors, values or emission benchmarks are used and determined only once for the crediting period, they should be updated, except if the emission factors, values or emission benchmarks are based on the historical situation at the site of the project activity prior to the implementation of the project and cannot be updated because the historical situation does not exist anymore as a result of the CDM project activity".

In the registered PD, the grid emission factor was calculated as per the combined margin approach described in the "Tool to calculate the emission factor for an electricity system" Version-1.1. The grid emission factor has been calculated as the weighted average of OM & BM; and has been fixed ex-ante for the entire crediting period.

The OM and BM was obtained from a publicly available source i.e. "CEA CO2 Baseline Database" Version 05 latest version published by Central Electricity Authority, Ministry of Power (Government of India) at the time of validation.

Considering the guidance provided under this step, calculation of emission factor and baseline emissions are updated for the next crediting period as per step 2.

Step 2: Update the current baseline and the data and parameters

"Update the current baseline emissions for the subsequent crediting period, without reassessing the baseline scenario, based on the latest approved version of the methodology applicable to the project activity. The procedure should be applied in the context of the sectoral policies and circumstances that are applicable at the time of request for renewal of the crediting period".

As demonstrated above the reassessment of baseline scenario is not required. However as per the latest version of applied methodology ACM0002 version 19.0, data and parameters are updated as following:

As referred in the methodology ACM0002 version 19.0 the latest version of the "Tool to calculate the emission factor for an electricity system" (version 07.0) is used for calculation of emission factor and consequently the baseline emissions.

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 0.9475 tCO₂/MWh for Indian electricity grid (Formerly known as Southern regional 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 simple operating margin value of 0.9726 tCO₂/MWh and build margin value of 0.8723 tCO₂/MWh for Indian electricity grid in India have been referred from CO₂ baseline database published by Central Electricity Authority, Govt. Of India, version 13. 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.

It is worthy to note that there is no change in baseline scenario, however updated baseline calculations are provided in section 3.2.6 of this report.

The assessment team is able to conclude that:

- Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable.
- Documentary evidence used in determining the baseline scenario is relevant, and correctly quoted and interpreted in the project description.
- Relevant national and/or sectoral policies and circumstances have been considered and are listed in the project description.
- The procedures for identifying the baseline scenario have been correctly followed and the identified scenario reasonably represents what would have occurred in the absence of the project.

Finally it can be concluded that the identified baseline scenario is justified and according to the VCS Standard version.3.7 and the "Tool for the assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period v3.0.1.

To describe the baseline scenario the PP has employed the requirements listed under §24 of the applied methodology which states that:

"If the project activity is the installation of a Greenfield power plant, the baseline scenario is 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 combined margin of the Indian grid used for the project activity is as follows:

Parameter	Value	Nomenclature	Source
-----------	-------	--------------	--------

	(tCO ₂ e/ MWh)		
EF _{grid,CM,y}	0.9475	Combined margin CO ₂ emission factor for the project electricity system in year y	Calculated as the weighted average of the operating margin (0.75) & build margin (0.25) values, sourced from Baseline CO ₂ Emission Database, Version 13 published by Central Electricity Authority (CEA), Government of India
EF _{grid,OM,y}	0.9726	Operating margin CO ₂ emission factor for the project electricity system in year y	Calculated as the last 3 year (2014-15, 2015-16 & 2016-17) generation-weighted average, sourced from Baseline CO ₂ Emission Database, Version 13, published by Central Electricity Authority (CEA), Government of India
EF _{grid,BM,y}	0.8723	Build margin CO ₂ emission factor for the project electricity system in year y	Baseline CO ₂ Emission Database, Version 13, published by Central Electricity Authority (CEA), Government of India

As that the project involves installation and operation of green-field, grid-connected wind power plants, the above assigned baseline scenario is deemed to be consistent. This was confirmed based sectoral expertise of the assessment team and further by reviewing the Joint PD & MR, Power purchase agreements and conducting physical inspections during On-Site Visit combined with interviewing representatives of PP.

Thus, the baseline scenario has been identified in line with the requirements of the applied methodology ACM0002 (version 19) and is deemed to be appropriate and justified.

3.3.5 Additionality

In accordance with the paragraph 3.8.5 clause 1 of VCS standard v 3.7, “A full reassessment of additionality is not required when renewing the project crediting period. However, regulatory surplus shall be demonstrated in accordance with Section 4.6.3) and the project description shall be updated accordingly”.

As per the above guidelines, the assessment team has reviewed the sectoral and national policies implemented for the wind power projects in host country India.

Latest regulatory requirements for the project activity were checked through the official website of the Ministry of New and Renewable Energy, a nodal ministry of Government of India for the matters relating to new and renewable energy and state policies.

In view of the above assessment, it can be concluded that the proposed project is not mandated by any law, statute or other regulatory framework, or for UNFCCC non-Annex I countries, any systematically enforced law, statute or other regulatory framework and hence continued to be voluntary.

3.3.6 Quantification of GHG Emission Reductions and Removals

The equations and choices provided in the applied methodology ACM0002 (version 19) and all other methodological tools are correctly quoted in the Joint PD for RCP & MR. The emission reductions of the project would be calculated using the formulae mentioned in the applied methodology.

Validation team based on the review of the Joint PD for RCP & MR confirms that the formulae are correctly presented for the determination of emissions reductions. The parameters and equations presented in the Joint PD for RCP & MR, as well as other applicable documents, have been compared with the information and requirements presented in the applied methodology. An equation comparison has also been made to ensure consistency between all the formulae presented in the Joint PD & MR and ER validation spreadsheet and the applied methodology.

Baseline Emissions:

The baseline emissions associated with the applied methodology are calculated as:

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

Where:

BE_y = Baseline emissions in year y (tCO₂e/yr)

$EG_{PJ, y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the VCS project activity in year y (MWh/yr)

$EF_{grid, CM, y}$ = 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” (tCO₂e/MWh)

The estimated to be 135,084 MWh per year, which is same as in the registered VCS PD. This was confirmed based on assessment of Joint PD for RCP & MR and ER validation spreadsheet.

As reported in section 3.2.4 of this report, combined margin emission factor ($EF_{grid, y}$) is calculated using the “Tool to calculate the emission factor for an electricity system” version 07 and value obtained as 0.9475 tCO₂/MWh.

Thus, the emission factor for the project is calculated to be $EF_y = 0.9475$ tCO₂e/MWh and it is fixed ex ante for the crediting period. Considering this process, combined margin emission factor has been considered and same value is confirmed correct.

$$BE_y = 135,084 \text{ MWh} * 0.9475 \text{ tCO}_2/\text{MWh}$$

$$BE_y = 127,993 \text{ tCO}_2 (\text{rounded down value})$$

Project Emissions:

The project involves wind technology which is a renewable energy source. Thus, as per §36 the ACM002 (version 19) there are no project related emissions associated with the current project.

Thus, $PE_y = 0$.

Leakage Emissions:

As per the section 5.6 of the applied methodology ACM002 (version 19), no other leakage emissions are considered. Thus, the leakage is considered as zero.

Emission Reductions:

The emissions reductions associated with the applied methodology are calculated as:

$$ER_y = BE_y - PE_y$$

ER_y = Emission reductions in year y (t CO₂e/yr)

BE_y = Baseline emissions in year y (t CO₂e/yr)

PE_y = Project emissions in year y (t CO₂e/yr)

As $PE_y = 0$

$$ER_y = BE_y$$

$$ER_y = 127,993 \text{ t CO}_2\text{e/yr (Round down value)}$$

Hence total emission reductions estimated for the entire crediting period of 10 year would be as 127,993 tCO₂.

Conclusion:

The assessment team is able to conclude that the calculation of emission reductions is done as per the applied methodology. Changes due to the upgraded version of the methodology and the re-assessment of the baseline have been considered suitably. The calculation of the emission reductions provided in the in the ER spread sheet and the corresponding calculation in the relevant section of the PD have been checked and found to be satisfactory. The estimation of emission reductions for the second crediting period is deemed plausible and conservative.

All relevant assumptions and data are listed in the project description, including their references and sources, being CEA database version 13, the main source of data for the emission factor calculation.

All estimates of the baseline emissions can be replicated using the data and parameter values provided in the project description.

The emission reductions were calculated in accordance with the methodology and tool.

3.3.7 Methodology Deviations

Not applicable

3.3.8 Monitoring Plan

The project employs the large-scale approved CDM methodology namely ACM0002 (version 19) and in accordance with the same, the parameters to be monitored ex-post. During the second crediting period aspects of monitoring plan like monitoring procedure, calibration procedure, data recording, monitoring role and responsibility and QA/QC procedure will remain same as mentioned in the registered PD.

The updated PD has been reviewed to check that the procedure for data uncertainty, emergency preparedness, roles and responsibility, operational and management structure are mention in the PD. The monitoring plan completely describes all measures to be implemented for monitoring all parameters required. The assessment team confirm that:

- The monitoring plan included in the PD is based on the approved methodology ACM0002 (version 19) which has been applied to the VCS project activity
- The monitoring arrangements described in the monitoring plan are feasible within the project design.
- The PP has the ability to implement the monitoring plan as per the PD.

Based on the above assessment the validation team concludes that the PP is capable to implement the monitoring plan and hence confirms compliance of VCS guidelines and the applied methodology.

3.4 Non-Permanence Risk Analysis

Not applicable

4 SAFEGUARDS

4.1 No Net Harm

No potential negative environmental and socio-economic impacts have been identified by the project proponent. The project activity promotes environmental and socio-economic well-being as it results in zero GHG emissions due to installation and operation of clean, renewable energy technology for electricity generation.

This is as per the requirements laid out in Appendix-1 of the VCS Standard (version 3.7) and deemed acceptable to the validation team.

4.2 Environmental Impact

The project activity is the installation and operation of wind power plant which would result in generation of clean, renewable energy. Thus, the project activity is not expected to have any significant adverse environmental impacts. Moreover, the project activity would help promote environmental and socio-economic well-being in the region. Also, there is no mandatory legal requirement in the host country to carry out environmental impact assessment of such project types. The assessment team reviewed the official government notification in the form of 'Schedule I of the EIA notification S.O.1533 (E)' dated 14/09/2006 and further affirmation provided by MOEF in the form of 'OM J-11013/41/2006 - IA II (I)' dated 13/05/2011 to confirm that wind power projects are not included in the list of project activities for which EIA is mandatory.

Thus, no EIA has been carried out by the PP which is deemed acceptable to the validation team.

4.3 Local Stakeholder Consultation

Not applicable since this is validation for renewal of crediting period. It is not obligatory to have a new stakeholders' consultation meeting while renewing the crediting period.

4.4 Public Comments

Not applicable since this is validation for renewal of crediting period.

5 VERIFICATION FINDINGS

5.1 Accuracy of GHG Emission Reduction and Removal Calculations

The project monitoring has been carried in accordance with the registered VCS PD and the joint PD for RCP and MR. The monitoring plan laid in the registered PD & joint PD for RCP and MR is being followed at the site. The assessment team has verified the information flow (from data generation, aggregation, to recording, calculation and reporting for these parameters including the values) in the joint PD for RCP and MR.

The emission reductions are purely based on the net electricity generated and exported from the machines. PP has provided all the sufficient data for current monitoring period. The values of the parameter net electricity generation supplied to the grid by each phase used in deriving the GHG emission reduction could be very well correlated between the data sets and ER spreadsheet provided by PP. The verification of each monitoring parameter has been discussed later in section 5.2.

The calculation method and formulae used in calculating baseline emission is in compliance to the methodology used i.e. ACM0002 version 19.0.0. Since project activity is a wind power project, leakage emission and project emission has been considered as zero.

5.2 Quality of Evidence to Determine GHG Emission Reductions and Removals

The below tables describe how the parameter, that is to be measured according to the monitoring plan, has been verified to confirm that the actual monitoring complies with the monitoring plan, monitoring data has been thoroughly assessed and that the calibration requirements are met.

Parameter	Electricity supplied to the grid by the plant , EG _y (kWh/Year)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The electricity exported and imported by all 32 WTGs of the project activity at each of the 4 metering points (namely NSLC III, NSLC IV, NSLC V, NSLC VI) is recorded monthly by representatives of the BESCO and Project Participant/10/. Based on the monthly electricity export recorded at group controller station meter and at the substation meter (TEGy), the BESCO determines the transmission line loss, in accordance with the conditions stipulated in the PPA signed between them and the Project Participant. Based on this, the BESCO issues line loss calculation sheets, for the every month. The

		Joint Meter Reading Statements (known as Form B) is then submitted by the BESCOM to the Project participant which indicates the electricity export, electricity import, transmission line losses and the net electricity exported value at individual grid controller station.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.
	Monitoring equipment	The electricity exported and imported from the grid is recorded through metering points installed at grid controller station. There are 4 controller station points viz., NSLC III, NSLC IV, NSLC V and NSLC VI used to measure the net electricity supplied to the grid by all the 32 WTGs. All the WTGs are not provided with metering location and hence each controller points measure electricity supplied by more than one WTG. All meters are of bi-directional tri-vector type with an accuracy class of 0.2s. Apart from the readings taken at group controller points, the electricity export readings are also taken at the grid interconnection point or 66 kV substation namely NSLC I and NSLC II. Based on the two readings taken at group controller points and substation, state electricity utility prepares a monthly statement namely Form B of electricity supplied through each WTG after accounting for the transmission loss and import of electricity. The transmission loss has been calculated by the BESCOM/KPTCL personal based on electricity export readings measured at the group controller points and at the 66 kV substation and the same is provided along with the Form B/10/.
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring	The energy meters are two-way tri-vector meters of accuracy class 0.2s. Accuracy of the monitoring equipment's is higher than accuracy mentioned in the monitoring plan as outlined in the registered

	equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	PD.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes the accuracy valid for the entire measuring range.
	Calibration frequency /interval:	Annual
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	The registered monitoring plan indicates the frequency of accuracy testing/ calibration of the main and check meters as Annual.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Calibration of the measuring equipment's is carried out by an accredited entity i.e. by state utility/07/
	Is (are) calibration(s) valid for the whole reporting period?	Calibration of energy meters recording energy exported is valid for whole reporting period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes, calibration carried out for a measuring range comparable with the range for which measurements have been carried.
	How were the values in the monitoring report verified?	Reported values of this parameter have been verified with monthly Joint Meter Reading Statements (known as Form B)/08/during site visit .Value of this parameter for the current

		monitoring period is verified as 50,656,719 kWh. Furthermore monthly values of this parameter is reported in the ER calculation sheet/06/ are also verified with the monitoring report/05/ and found to be consistent.
	If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of this parameter as reported in the ER calculation sheet were further cross checked with the monthly invoices raised by the PP /09/ and found to be consistent.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the adequate QA/QC procedures were implemented by all the stakeholders, namely, the Grid Authority, the PP and the O&M Contractor. The data transfer process for the said parameter is as follows: The readings at the Metering Point are undertaken every month jointly by the representatives of the BESCOM/KPTCL and NSL representative.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	No such issues.
Findings	CL#1 CAR #2, CAR #3 and CAR#4 was raised and resolved	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology/10/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.	

Parameter	Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y, TEG _y (kWh/Year)	
Means of verification		
	Criteria/Requirements	Assessment/Observation

	Measuring /Reading /Recording frequency	Based on the monthly electricity export recorded at group controller station meter and at the substation meter (TEGy), the BESCOM determines the transmission line loss, in accordance with the conditions stipulated in the PPA signed between them and the Project Participant. Based on this, the BESCOM issues line loss calculation sheets, for the every month. The Joint Meter Reading Statements (known as Form B) is then submitted by the BESCOM to the Project participant which indicates the electricity export, electricity import, transmission line losses and the net electricity exported value at individual grid controller station.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.
	Monitoring equipment	The electricity exported and imported from the grid is recorded through metering points installed at grid controller station. There are 4 controller station points viz., NSLC III, NSLC IV, NSLC V and NSLC VI used to measure the net electricity supplied to the grid by all the 32 WTGs. All the WTGs are not provided with metering location and hence each controller points measure electricity supplied by more than one WTG. All meters are of bi-directional tri-vector type with an accuracy class of 0.2s. Apart from the readings taken at group controller points, the electricity export readings are also taken at the grid interconnection point or 66 kV substation namely NSLC I and NSLC II. Based on the two readings taken at group controller points and substation, state electricity utility prepares a monthly statement namely Form B of electricity supplied through each WTG after accounting for the transmission loss and import of electricity. The transmission loss has been calculated by the BESCOM/KPTCL personal based on electricity export readings measured at the group controller points and at the 66 kV substation and the same is provided along with the From

		B/10/.
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	The energy meters are two-way tri-vector meters of accuracy class 0.2s. Accuracy of the monitoring equipment's is higher than accuracy mentioned in the monitoring plan as outlined in the registered PD.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes the accuracy valid for the entire measuring range.
	Calibration frequency /interval:	Annual
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	The registered monitoring plan indicates the frequency of accuracy testing/ calibration of the main and check meters as Annual.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Calibration of the measuring equipment's is carried out by an accredited entity i.e. by state utility/07/
	Is (are) calibration(s) valid for the whole reporting period?	Calibration of energy meters recording energy exported is valid for whole reporting period.
	Is the calibration carried out for a measuring range	Yes, calibration carried out for a measuring range comparable with the range for which

	comparable with the range for which measurements have been carried out?	measurements have been carried.
	How were the values in the monitoring report verified?	Reported values of this parameter have been verified with monthly Joint Meter Reading Statements (known as Form B)/08/during site visit .Value of this parameter for the current monitoring period is verified as 50,655,300 kWh. Furthermore monthly values of this parameter is reported in the ER calculation sheet/06/ are also verified with the monitoring report/05/ and found to be consistent.
	If applicable, has the reported data been cross-checked with other available data?	Not Applicable .
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the adequate QA/QC procedures were implemented by all the stakeholders, namely, the Grid Authority, the PP and the O&M Contractor. The data transfer process for the said parameter is as follows: The readings at the Metering Point are undertaken every month jointly by the representatives of the BESCOM/KPTCL and NSL representative.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	No such issues.
Findings	CL#1 CAR #2,CAR #3 and CAR#4 was raised and resolved.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology/10/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.	

Parameter fixed ex-ante:

EF_{grid,OM,y}; tCO₂e/MWh: The Combined CO₂ emission factor for the first crediting period of the Project activity has been determined ex-ante in the joint VCS PD and MR. The emission factor value of 0.9475 tCO₂e/MWh used in the monitoring report has been verified against the the joint VCS PD and MR and found it to be consistent.

EF_{grid,OM,y}; tCO₂e/MWh: The Operating margin CO₂ emission factor for the first crediting period of the Project activity has been determined ex-ante in the joint VCS PD and MR. The emission factor value of 0.9726 tCO₂e/MWh used in the monitoring report has been verified against the the joint VCS PD and MR and found it to be consistent.

EF_{grid,BM,y}; tCO₂e/MWh: The Build margin CO₂ emission factor for the first crediting period of the Project activity has been determined ex-ante in the joint VCS PD and MR. The emission factor value of 0.8723 tCO₂e/MWh used in the monitoring report has been verified against the the joint VCS PD and MR and found it to be consistent.

Calibration of meters:

During the verification assessment of the project activity, accuracy of all the metering have been checked and found appropriate. The installation and working conditions of the meters were checked during the on-site inspection and were found to be satisfactory. Details of meters are provided in below table:

Metering Points	Meter Details					Test Result
	Serial no	Make	Type	Accuracy class	Date of Calibration	
NSLC I	Main meter – 11071857	L & T	3P4W	0.2s	27/10/2017	Satisfactory
	Check meter – 15195281				27/01/2018	Satisfactory
					26/04/2018	Satisfactory
					24/07/2018	Satisfactory
NSLC II	Main meter – 11071861	L & T	3P4W	0.2s	27/10/2017	Satisfactory
	Check meter – 11071863				27/01/2018	Satisfactory
					26/04/2018	Satisfactory
					24/07/2018	Satisfactory
NSLC III	Main meter – 07022896	L & T	3P4W	0.2s	27/10/2017	Satisfactory
	Check meter – 07022921				27/01/2018	Satisfactory
					26/04/2018	Satisfactory
					24/07/2018	Satisfactory
NSLC IV	Main meter – 07022985	L & T	3P4W	0.2s	27/10/2017	Satisfactory
	Check meter –				27/01/2018	Satisfactory
					26/04/2018	Satisfactory

	07022986				24/07/2018	Satisfactory
NSLC V	Main meter – 09142342 Check meter - 13191365	L & T	3P4W	0.2s	27/10/2017	Satisfactory
					27/01/2018	Satisfactory
					26/04/2018	Satisfactory
					24/07/2018	Satisfactory
NSLC VI	Main meter – 11071865 Check meter - 13191363	L & T	3P4W	0.2s	27/10/2017	Satisfactory
					27/01/2018	Satisfactory
					26/04/2018	Satisfactory
					24/07/2018	Satisfactory

The details of monitoring equipment are involved in the project activity and their calibration details are mentioned in the table under Appendix I of the Joint VCS PD for RCP and MR. The meters have been physically inspected during the site visit and the meter details are found to be consistent with that observed during the site visit. Calibration frequency of meters is once in a year and there is no delay in calibration of energy meter during this monitoring period.

The assessment team has verified the monthly JMR issued by state utility and confirmed that only the data recorded through main meters is used to calculate net electricity supplied to the grid by the WTGs belongs to developer and consequently for ER calculations. As verified through the calibration certificates, that meters were working satisfactorily during the current monitoring period. The registered VCS PD and Joint PD for RCP & MR and site visit observations confirm that the metering equipment are sealed and maintained by the state utility.

In view of the above discussion the assessment team able to confirm that evidence used to determine the GHG reductions and removals are sufficient and appropriate with respect to quality and quantity.

GHG Calculations

The emission reduction as per the applied methodology equals the baseline emissions (project emissions and leakage emissions for such project activities is considered zero). The formula provided for the calculation of baseline emissions is:

$$BE_y = EG_{PJ,y} * EF_{grid,CM,y} \text{ -----Equation 6 of ACM0002}$$

Where:

BE_y : Baseline emissions in year y (tCO_2e/yr)

$EG_{PJ,y}$: Electricity supplied by the project activity to the grid in year y (MWh/yr)

$EF_{grid,CM,y}$: Combined Margin (CM) Emission Factor of Southern grid (tCO_2e/MWh)

Thus, $BE_y = EG_{PJ,y} * EF_{grid,CM,y}$

Thus, $BE_y = 50,657 \text{ MWh} * 0.9475 tCO_2e/MWh$

$= 47,875 tCO_2e$

The verification team confirms that appropriate methods and formulae for calculating baseline emissions have been followed. The assumptions, emission factors and default values that were applied in the calculations are justified. All the data were made available and have monitored as per required monitoring frequency. The means of verification for the values of parameters, used for baseline emission calculation, is described above.

6 VALIDATION AND VERIFICATION CONCLUSION

Earthood Services Private Limited (ESPL), contracted by M/s NSL Renewable Power Private Limited, to perform a joint validation for renewable of crediting period and verification of the VCS project activity (VCS ID- 706) “51 MW Wind Power Project at Chitradurga” in India for the monitoring period 06/06/2018 – 31/09/2018 as reported in the Joint PD for RCP & Monitoring Report Version 03 dated 05/02/2019.

The joint validation for RCP and verification process was performed on the basis of all guidance and criteria as provided in VCS Standard (version 3.7), VCS Program Guide (version 3.7), VCS Validation and Verification Manual (version 3.2) and Registration & Issuance Process (version 3.8).

The conclusions of validation for RCP and verification process can be individually summarised as follows:

Validation for RCP Conclusion:

Earthood Services Private Limited (ESPL), contracted by M/s NSL Renewable Power Private Limited for validation of the renewal of the crediting period of the Project - “51 MW Wind Power Project at Chitradurga”, with regard to the relevant requirements of VCS programme guidelines and standard (VCS standard version 3.7, & VCS program guide version 3.7) and the information provided by the project proponent related to the project design, operation, monitoring and reporting.

ESPL reviewed the project description documents and subsequently carried out interviews during the site visit 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 Karnataka state electricity grid which is part of the Indian electricity grid, thereby displacing the grid generated electricity.

A risk-based approach has been followed to perform this validation. In the course of the validation 01 Clarification Requests (CRs) 03 Corrective Action Requests (CARs) were raised and successfully closed. No Forward Action Request (FAR) was raised.

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 standard version 3.7. The baseline has been determined in accordance with the stated approved baseline methodology. 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 standard version 3.7 program guidelines requirements.
- A reasonable level of assurance has been applied.
- The project additionality is not required to be reassessed, however it is sufficiently justified in the joint VCS-PD for RCP and MR.
- The monitoring plan is transparent and adequate and in line with applied monitoring methodology of ACM002, 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 127,993 tCO₂e/year are most likely to be achieved within the 10 year 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, without any qualifications or limitations.

Verification Conclusion:

ESPL commenced the verification on the basis of the baseline and monitoring methodology ACM0002 Version 19, the monitoring plan contained in the joint VCS PD for RCP and MR Version 03, dated 05/02/2019 and VCS guidelines version 3.7, as per the process described under Section 2 of this report.

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

In our opinion the GHG emissions reductions reported for the project activity for the period 06/06/2018 – 30/09/2018 are fairly stated in the joint VCS PD for RCP and MR Version 03, dated

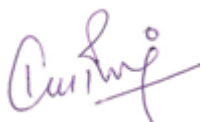
05/02/2018. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology ACM0002, Version 19, and the VCS standard.

Verification period: From 06/06/2016 to 30/09/2018 (including both days)

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

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
2018 (from 06/06/2016 to 30/09/2018)	47,875	0	0	47,875
Total	47,875	0	0	47,875

Approved by



Dr. Kaviraj Singh
Managing Director

Earthood Services Privated Limited

Date: 08/02/2019

Place: Gurgaon,

APPENDIX 1: DOCUMENT REFERENCES

S. No	Title of Document	Version	Date
1.	Joint VCS PD for RCP and MR	2.0	31/10/2018
2.	Approved VCS PD	5.0	31/05/2010
3.	VCS Validation Report	1.0	01/06/2010
4.	Previous VCS Verification report (Monitoring period: 01/11/2017 – 05/06/2018)	3.0	20/11/2018
5.	Joint VCS PD for RCP and MR	1.0	01/10/2018
		2.0	31/10/2018
		3.0	05/02/2019
6.	ER Sheet	1.0	01/10/2018
		2.0	31/10/2018
		3.0	05/02/2019
7	Certificates of Calibration for all the meters belongs to project activity	-	-
8.	Monthly State Energy Statements (Form B) issued by BESCOM/KPTCL	-	06/06/2018 to 30/09/2018
9.	Copy of all invoices raised to BESCOM by Project participant for net electricity exported to the grid for the current verification period	-	06/06/2018 to 30/09/2018
10.	“Consolidated methodology for grid-connected electricity generation from renewable sources”, ACM0002,	19.0.0	-
11.	CEA Database	13.0	-
12.	Commissioning certificate for all the WTGs of the project activity issued by state electricity authority	-	-
13.	Power Purchase Agreements signed between Project Proponent and state electricity authority	-	-
14.	VCS webpage for the project, VCS ID 706; http://www.vcsprojectdatabase.org/#/project_details/706	-	Last accessed on 31/01/2019
15.	Letter of declaration dated from PP regarding not having created or sought any other form of environmental credit for the same period	-	-
16.	ER sheet	1.0	01/10/2018
17.	VCS Standard	3.7	21/06/2017
18.	VCS Program Guide	3.7	21/06/2017
19.	On site assessment –interviews of staff personnel, photographs, physical inspection of monitoring system	-	19/10/2018

APPENDIX 2: ABBREVIATIONS

Abbreviations	Full texts
ABT	Availability Based Tariff
BESCOM	Bangalore Electricity Supply Company
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM PCP	Clean Development Mechanism Project Cycle Procedure
CDM PS	Clean Development Mechanism Project Standard
CDM VVS	Clean Development Mechanism Validation and Verification Standard
EB	Executive Board
EF	Emission Factor
EPC	Engineering ,Procurement and Construction
ER	Emission Reductions
CEA	Central Electricity Authority
CER	Certified Emission Reduction
CR	Clarification Request
DOE	Designated Operational Entity
DNA	Designated National Authority
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GOI	Government of India
IPCC	Intergovernmental Panel on Climate Change
MCR	Monthly Credit Reports
MP	Monitoring Plan
MR	Monitoring Report
MWh	Megawatt hour
PD	Project Description
PP	Project Proponent
PS	Project Standard
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard

APPENDIX 3: FINDINGS OVERVIEW

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

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

Table 2. CL from this verification

CL ID	01	Section no.	4.3	Date : 29/10/2018
Description of CL				
Please clarify why the calibration details of the energy meters covering the complete monitoring period is not provided in the MR. Please submit the latest calibration certificates of all the meters installed at substation and used to measure the data.				
Project participant response				Date : 31/10/2018
1. PP has revised the Appendix 1 of the MR to provide the calibration details of the energy meters covering the complete monitoring period. 2. PP is hereby submitting the latest calibration certificates of all the meters installed at substation and used to measure the data.				
Documentation provided by project participant				
- VCS-JPD-MR, Version 2, dated 31 Oct 2018 - Meter Calibration Certificates				
DOE assessment				Date: 31/01/2019
The PP has submitted the revised VCS-JPD-MR and Meter Calibration Certificates, the same has been verified and found to be correct, hence CL#1 closed.				

Table 3. CAR from this verification

CAR ID	02	Section no.	3.1	Date : 29/10/2018
Description of CAR				
The value of EF OM, y is not consistent with outcome of step 4 as above, as it resulted as 0.9726 tCO ₂ /MWh where is section 4.1 mentioned 0.98756. Please clarify ?				
Project participant response				Date : 31/10/2018
PP has revised the section 4.1 of the VCS- Joint PD-MR to maintain the consistency in reporting the "Operating Margin Emission Factor" (i.e. 0.9726 tCO ₂ e/MWh) in line with the ER sheet.				
Documentation provided by project participant				
- VCS-JPD-MR Version 2, dated 31 Oct 2018				
DOE assessment				Date: 31/01/2019
The PP has submitted the revised VCS-JPD-MR, the same has been verified and found to be correct, hence CAR#2 closed.				

CAR ID	03	Section no.	4.1	Date : 29/10/2018
Description of CAR				

1. 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. 2. Please submit the monthly statements/credit notes issued by BSECOM/ KPTCL and invoices raised by the project proponent to the state utility in the current monitoring period. 3. The PP is requested to provide comparison between estimated emission reduction and actual achieved emission reduction during current monitoring along with appropriate reason for variation if any.	
Project participant response	Date : 31/10/2018
1. PP is hereby submitting the declaration letter 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. 2. PP is hereby submitting monthly statements/credit notes issued by BSECOM/ KPTCL and invoices raised by the project proponent to the state utility during the current monitoring period. 3. PP has revised the ER sheet to provide the the comparison between estimated emission reduction and actual achieved emission reduction during current monitoring period along with appropriate reason for variation in actual emission reductions.	
Documentation provided by project participant	
- Declaration from PP - Monthly statements/credit notes - Invoices - ER Sheet version 2, dated 31 Oct 2018	
DOE assessment	Date: 31/01/2019
The PP has submitted the revised VCS-JPD-MR, the same has been verified and found to be correct, hence CAR#3 closed.	

CAR ID	04	Section no.	3.1	Date : 01/02/2019
Description of CAR				
1. Type of crediting period as mentioned in section 1.6 of the joint PD&MR is not correct. 2. Justification regarding applicability of tools is not provided in section 2.2 of the joint PD&MR. 3. No diagram of project boundary is provided in section 2.3 of the joint PD&MR. 4. In the ER sheet tab-MR-ER, reported monitoring period is not consistent with the joint PD&MR.				
Project participant response				Date : 05/02/2019
1. PP has revised the section 1.6 of the VCS-Joint PD-MR to mention the correct type of crediting period applicable to the project activity i.e. Renewal Crediting Period. 2. PP has revised the section 2.2 of the VCS-Joint PD-MR to provide the justification regarding applicability of tool. 3. PP has revised the section 2.3 of the VCS-Joint PD-MR to provide the Project Boundary diagram. 4. PP has revised the ER sheet tab-MR-ER, reported monitoring period is now consistent with the VCS Joint PD & MR.				
Documentation provided by project participant				
- VCS Joint PD-MR, Version 03, dated 05 Feb 2019. - ER Sheet Version 03, dated 05 Feb 2019				
DOE assessment				Date: 06/02/2019
Type of crediting period is corrected in section 1.6 of the joint PD&MR, found to be satisfactory, hence accepted. Justification regarding applicability of tools is provided in section 2.2 of the joint PD&MR, found to be satisfactory, hence accepted. Diagram of project boundary is provided in section 2.3 of the joint PD&MR. In the ER sheet tab-MR-ER, reported monitoring period is corrected and made consistent with the joint PD&MR, found to be satisfactory, hence accepted. CAR #4 is closed.				

Table 4. FAR from this verification

FAR ID	N/A	Section No.	N/A	Date : N/A
Description of FAR				
No FAR raised				
Project participant response				Date : N/A
N/A				
Documentation provided by project participant				
N/A				
DOE assessment				Date: N/A
N/A				

APPENDIX 4: COMPETENCY STATEMENTS

Competence Statement			
Name	Vivek Kumar		
Country	India		
Education	B.E. (Mechanical Engineering) M.Tech (Energy Management)		
Experience	10 Years +		
Field	Climate Change & Environment		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	ACM0002, AMS.I.D		
Local expert	YES (India)		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert	YES (1.1, 1.2, 13.1)		
Reviewed by	Shreya Garg	Date	11/10/2018
Approved by	Anshika Gupta	Date	11/10/2018

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	AbhishekMahawar	Date	01/03/2018
Approved by	Kaviraj Singh	Date	01/03/2018

-000-