

WIND GROUPED PROJECT BY HERO FUTURE ENERGIES PRIVATE LIMITED (EKIESL-VCS-AUG-16-03)



Document Prepared By:
Carbon Check (India) Private Ltd.

Project Title	Wind Grouped Project By Hero Future Energies Private Limited (EKIESL-VCS-AUG-16-03)
Report Title	Wind Grouped Project By Hero Future Energies Private Limited (EKIESL-VCS-AUG-16-03)
Version	02
Report ID	CC IPL 472/VCS/VAL/VER/GWHFG/20160906
Verification Period	29-March-2016 to 01-April-2017 (both days included)
Client	Hero Future Energies Private Limited
Pages	61
Date of Issue	23-May-2017
Prepared By	Carbon Check (India) Private Ltd.
Contact	Carbon Check (India) Private Ltd. Regd. Off: 2071/38, 2nd Floor, Naiwala, Karol Bagh, New Delhi - 110005 Corporate off: G 49 & 50, 3rd Floor, Sector – 3, NOIDA (Uttar Pradesh) – 201301 www.carboncheck.co.in
Approved By	Vikash Kumar Singh
Work Carried Out By	Sanjay Kumar Agarwalla (Team Leader, Technical Expert) Kranav Sharma (Team Member, Technical Expert) Amit Anand (Technical Reviewer)

Summary:

- **A brief description of the project**

The project “Wind Grouped Project By Hero Future Energies Private Limited (EKIESL-VCS-AUG-16-03)” is a proposed grouped VCS project, which involves installation, commissioning and operation of multiple Wind Power Projects at different locations in the India. The grouped project currently involves a single project activity instance, which is located in the state of Madhya Pradesh. The proposed total installed capacity is 100 MW by operation of 50 Wind Turbine Generators (WTGs) of 2.0 MW each. The electricity generated by the wind projects will be supplied to regional electrical grid, which will be part of the national grid of India. As the project involves power generation through renewable sources of energy, it will result in emission reductions due to displacement of grid electricity, which is majorly fossil fuel based.

- **A brief description of the validation and verification**

Hero Future Energies Private Limited has commissioned Carbon Check (India) Private Ltd. (CC IPL), to carry out a combined validation and verification of their grouped project “Wind Grouped Project By Hero Future Energies Private Limited (EKIESL-VCS-AUG-16-03)”, with regards to the relevant requirements of VCS Standard Version 3.6^{/B01b/}.

- **The purpose and scope of validation and verification**

Validation

Purpose: The purpose of a validation is to have a thorough and independent assessment of the proposed project activity against the applicable VCS requirements, in particular, the project’s baseline, monitoring plan and the project’s compliance with relevant VCS and host party criteria. These are validated in order to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. Validation 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 emission reductions. CC IPL’s objective is to perform a thorough, independent assessment of the validation of the project activity.

Scope: The validation scope is defined as an independent and objective review of the Joint Project Description (PD) & Monitoring Report (MR)^{/02/}. The Joint PD & MR^{/02/} is reviewed against the relevant criteria and guidance documents provided by VCS which included the following:

VCS Program Guide (v3.6, dated 09/10/2016)^{/B01a/}, VCS Standard (v3.6, dated 19/10/2016)^{/B01b/}, Program Definitions (v3.6, dated 09/10/2016)^{/B01c/}, Registration & Issuance Process (v3.7, dated 19/10/2016)^{/B01d/} and in line with the VCS Validation and Verification Manual (v3.2, dated 19/10/2016)^{/B01e/} applicable at the time in order to confirm that the project meets the applicability conditions of the selected baseline and monitoring methodology namely ACM0002 (version 17.0)^{/B02/} and also assess the claims and assumptions made in the Joint PD & MR^{/02/} without limitation on the information provided by the project proponents.

Verification

Purpose: The purpose of the verification is to review the Joint VCS PD & MR^{/02/} 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^{/04b/} 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 & MR^{/02/}, ER sheet^{t/04b/} 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.

Scope: The scope of the verification is:

- To verify the project implementation and operation with respect to the Joint PD & MR^{/02/}.
 - To verify the implemented monitoring plan with the Joint PD & MR^{/02/} and applied baseline and monitoring methodology^{B02/}.
 - To verify that the actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
 - To evaluate 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.
 - To verify that reported GHG emission data is sufficiently supported by evidence.
 - The verification shall ensure that the reported emission reductions are complete and accurate in order to be certified.
- **The method and criteria used for validation and verification:**
 - I. A desk review of the project description documents
 - A review of data and information;
 - Cross checks between information provided in the Joint PD & MR^{/02/} and information from sources with all necessary means without limitations to the information provided by the project proponent;
 - II. On-site visit and follow-up interviews with project stakeholders
 - Interviews with relevant stakeholders in host country with personnel having knowledge with the project development via telephone, email or direct on-site visits;
 - III. Reference to available information relating to projects or technologies similar to project under validation and review based on the approved methodology being applied for the appropriateness of formulae and accuracy of calculations.
 - IV. Review of the monitoring plan and monitoring methodology, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures;
 - V. Evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions;
 - VI. The resolution of outstanding issues and the issuance of the final validation report and opinion.
 - **The number of findings raised during validation and verification**

During the course of combined validation and verification, a total of 14 findings were raised, which includes:

08 Corrective Action Requests (CARs);
 06 Clarification Requests (CLs);
 0 Forward Action requests (FARs).
 - **Any uncertainties associated with the validation**

The Joint PD & MR^{/02/}, emissions reduction calculations^{04/} along with the supporting documents

provided are considered to be in line with the VCS requirements^{B01/}. The validation team has detected no further uncertainties or quality restriction.

- **Summary of the validation and verification conclusion**

CC IPL hereby confirms that the project is fulfilling the criteria specified by Joint PD & MR template version 3.1^{B01f/}, VCS Standard version 3.6^{B01b/} and applied methodology ACM0002 (version 17.0)^{B02/}, and hence be successfully validated, verified and further certified for emission reductions under VCS. CC IPL confirms a combined positive validation and verification opinion confirming the project complies with the applicable VCS requirements, thus recommending the project for registration and issuance.

In CC IPL's opinion, the emission reductions reported for the "Wind Grouped Project By Hero Future Energies Private Limited (EKIESL-VCS-AUG-16-03)" in the Joint PD & MR^{02/} are fairly and correctly stated. CC IPL is therefore able to certify that the emission reductions from the "Wind Grouped Project By Hero Future Energies Private Limited (EKIESL-VCS-AUG-16-03)" during the period from 29/03/2016 to 01/04/2017, amount to 160,061 tCO_{2e}.

CC IPL does not assume any responsibility towards the issuance and utilisation of VCU's hereby verified and certified. Request for issuance of VCU's shall be made by the project proponent to an approved VCS Program Registry based on the requirements set out under the most recent version of the VCS Program Guidelines clause on VCS Registration. The verification of reported emission reductions is based on the information made available to CC IPL and the engagement conditions detailed in this report. Hence, CC IPL cannot be held liable by any party for decisions made or not made based on this report.

Table of Contents

1 Introduction 7

 1.1 Objective 7

 1.2 Scope and Criteria 7

 1.3 Level of Assurance..... 7

 1.4 Summary Description of the Project 8

2 Validation AND VERIFICATION Process 9

 2.1 Method and Criteria..... 9

 2.2 Document Review 10

 2.3 Interviews 10

 2.4 Site Inspections 11

 2.5 Resolution of Findings..... 11

 2.5.1 Forward Action Requests..... 13

3 Validation Findings..... 13

 3.1 Project Details 13

 3.2 Participation under Other GHG Programs 20

 3.3 Application of Methodology 20

 3.3.1 Title and Reference 20

 3.3.2 Applicability 20

 3.3.3 Project Boundary..... 25

 3.3.4 Baseline Scenario 26

 3.3.5 Additionality 26

 3.3.6 Quantification of GHG Emission Reductions and Removals 31

 3.3.7 Methodology Deviations 33

 3.3.8 Monitoring Plan 33

 3.4 Non-Permanence Risk Analysis..... 34

4 safeguards 34

 4.1 No Net Harm 34

 4.2 Environmental Impact 34

 4.3 Local Stakeholder Consultation 35

4.4	Public Comments	35
5	VERIFICATION FINDINGS	35
5.1	Accuracy of GHG Emission Reduction and Removal Calculations	35
5.2	Quality of Evidence to Determine GHG Emission Reductions and Removals	38
6	Validation AND VERIFICATION conclusion	38
	APPENDIX 1.1: REFERENCE DOCUMENTS	40
	APPENDIX 1.1: BACKGROUND DOCUMENTS	41
	APPENDIX 2: LIST OF FINDINGS	42
	APPENDIX 3: CERTIFICATES OF COMPETENCE	58
	APPENDIX 4: ABBREVIATIONS	61

1 INTRODUCTION

1.1 Objective

Hero Future Energies Private Limited has appointed the VVB, Carbon Check (India) Private Ltd. to perform a joint validation and verification of the VCS grouped Project Activity “Wind Grouped Project By Hero Future Energies Private Limited (EKIESL-VCS-AUG-16-03)” in India (hereafter referred to as “grouped project”). The objective of the combined validation and verification is to have an independent third party assessment of the Joint PD & MR^{01a/} and supporting documentation to ensure compliance with the rules, regulations and guidelines laid out in the following CDM and VCS requirements:

- VCS Program Guide (v3.6, dated 09/10/2016)^{/B01a/}
- VCS Standard (v3.6, dated 19/10/2016)^{/B01b/}
- VCS Program Definitions (v3.6, dated 09/10/2016)^{/B01c/}
- VCS Registration & Issuance Process (v3.7, dated 19/10/2016)^{/B01d/} VCS Validation and Verification Manual (v 3.2, dated 19/10/2016)^{/B01e/}
- UNFCCC CDM approved methodology ACM0002 (version 17.0)^{/B02/}
- The project’s additionality justification is assessed against “Tool for the demonstration and assessment of additionality”, Version 07.0.0^{/B06/}

Validation and verification is a requirement for all VCS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of verified emission reductions (VERs). This report contains the findings and resolutions from the validation of the project activity.

1.2 Scope and Criteria

The scope of joint validation and verification is defined as an independent and objective review of the Joint PD & MR^{02/} against the relevant criteria and decisions of the VCS and CDM including the approved baseline and monitoring methodology. CCIPL has employed a risk-based approach in the validation, focusing on the identification of significant risks and reliability of project monitoring and generation of emission reductions.

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

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

1.3 Level of Assurance

- Reasonable level of assurance
- Limited level of assurance

1.4 Summary Description of the Project

The purpose of the grouped project activity is installation, commissioning and operation of multiple Wind Power Projects at different locations in the India. The grouped project currently involves a single project activity instance, which is located in the state of Madhya Pradesh. The total installed capacity is 100 MW by operation of 50 Wind Turbine Generators (WTGs) of 2.0 MW each. The electricity generated by the wind projects will be supplied to regional electrical grid, which will be part of the national grid of India. As the project involves power generation through renewable sources of energy, it will result in emission reductions due to displacement of grid electricity primarily supplied by coal and other fossil fuel based power plants.

The main purpose of the proposed grouped project activity is to generate clean energy through renewable energy sources. The proposed project activity is a wind power plant owned by Clean Wind Power (Ratlam) Private Limited (the parent company being Hero Future Energies Private Limited), who is also the project promoter. The proposed total installed capacity of the wind power plant would be 100 MW through operation of 50 Wind Turbine Generators (WTGs) rated at 2.0 MW each. The electricity produced from the grouped project activity shall be supplied to the regional electrical grid, which is part of the national grid of India. The current grouped project consists is implemented at various locations/sites in the Indian state of Madhya Pradesh. This was confirmed based on review of Joint PD & MR^{/02/}, Purchase order issued to the technology supplier^{/08/} and Commissioning certificate of currently operating power project^{/09/}.

The grouped project activity promotes environmental and social well-being as it results in zero GHG emissions due to installation and operation of clean, renewable energy technology for electricity generation. The design lifetime of all the WTGs in the project activity is 25 years; which is accordance to the manufacturer's specification and state electricity regulatory norms.

The total estimated GHG emission reductions expected for the grouped project is 1,712,930 tCO₂e for the entire crediting period (of ten years). Thus, the estimated annual average emission reductions will be 171,293 tCO₂e.

For the current monitoring period, the actual total installed capacity of the wind power plant is 100 MW with plant located in Badnawar and Gandhwada site (district of Dhar) in Madhya Pradesh.

The total actual GHG emission reductions for the grouped project are, amount to 160,061 tCO₂e for the current monitoring period ranging from 29/03/2016 to 01/04/2017 (inclusive of both the dates).

This was confirmed based on review of Joint PD & MR^{/02/}, ER verification spreadsheet^{/04b/}, Joint Metering Reading reports^{/16/} and Invoices issued to state DISCOM^{/17/}.

The implementation status of the six individual projects under the grouped project is given below:

Sl. No.	Project Location	State	Project Capacity (MW)	Project Owner	Date of Commissioning ^{/09/}
1	Badnawar Gandhwada site, Dhar	Madhya Pradesh	100 MW	Hero Future Energies Private Limited	29/03/2016

2 VALIDATION AND VERIFICATION PROCESS

2.1 Method and Criteria

Hero Future Energies Private Limited has appointed Carbon Check (India) Private Ltd., to carry out joint validation and verification of the grouped project “Wind Grouped Project By Hero Future Energies Private Limited (EKIESL-VCS-AUG-16-03)”, with regards to the relevant requirements of VCS Standard Version 3.6 (dated 19/10/2016) ^{/B01b/}.

The method and criteria used for validation and verification consists of the following three phases:

1. Completeness check and desk review of the Joint PD & MR^{/02/}, baseline and monitoring methodology, applicable tools and other relevant documents;
2. On-site visit (including follow-up interviews with project stakeholders, when deemed necessary).
3. Resolution of outstanding issues and the issuance of the final Joint Validation & Verification report and if applicable the VCS Validation and Verification Deeds of Representation.

Validation Process:

The validation process includes thorough and independent assessment of the proposed grouped project activity against the applicable VCS requirements, in particular, the project’s baseline, additionality, monitoring plan and the project’s compliance with relevant VCS and host party criteria. The joint assessment of the project and to confirm that the project meets the applicability conditions of the selected baseline and monitoring methodology, ACM0002 (version 17.0)^{/B02/} and assess the claims and assumptions made in the Joint PD & MR^{/02/} without limitation on the information provided by the project proponents. The overall validation was conducted using CCIPL’s internal procedures.

Verification Process:

The verification process involves thorough review of the monitoring results and confirming that the monitoring methodology was implemented according to the monitoring plan and monitoring data which is used to confirm the reductions in anthropogenic emissions by sources, is sufficient, definitive and presented in a concise and transparent manner.

In particular, the monitoring plan, emission reduction calculations and the project’s compliance with relevant VCS and host Party criteria are verified in order to confirm that the grouped project has been implemented in accordance with the Joint PD & MR^{/02/} and conservative assumptions, as documented. It is also confirmed if the monitoring plan is in compliance with the Joint PD & MR^{/02/} and approved monitoring methodology^{/B02/}.

2.2 Document Review

During the document review, CCIPL has applied standard auditing techniques to assess the quality of information provided. The joint validation and verification was performed primarily based on the review of the Joint PD & MR^{/02/} and the supporting documentation.

For validation, this process includes:

- A review of data and information presented to verify completeness and consistency in accordance with VCS Standard (version 3.6)^{/B01b/} requirements;
- A review of the project description and monitoring methodology, paying particular attention to the applicability conditions of the methodology and baseline and additionality related requirements
- A review of the monitoring plan and the project's compliance with relevant VCS criteria.

For verification, this process includes:

- A review of data and information presented by the PP to verify their completeness
- A review of the MP and monitoring methodology, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the QA/QC procedures, and
- An evaluation of data management and the QA/QC system in the context of their influence on the generation and reporting of ERs.

The Joint PD & MR^{/01a/} (version 01 dated 26/10/2016) was initially reviewed and CCIPL requested the PP to present the supporting information and documents. The documents were reviewed by CCIPL. Through the assessment process, the revised VCS PD and MR^{/02/} and the supporting documents were evaluated to confirm the actions taken by the PP to the CARs and CLs issued by the assessment team.

The list of documents referred during the course of this joint validation and verification has been provided in Appendix-1.

2.3 Interviews

The key personnel interviewed and the main topics of the interviews are summarized in the table below:

During Site visit:

	Date	Name	Organization	Topic
/i/	28/04/2017	Naresh Kumar Kumawat	Hero Future Energies Private Limited	<ul style="list-style-type: none"> • Project Design and technical specifications • Project Implementation status • Project start date • Project Location(s) • Environmental Impacts
/ii/	28/04/2017	Ravendra Dwivedi	Siemens Gamesa	<ul style="list-style-type: none"> • Project Design and technical specifications • Project Implementation status • Project start date • Project Location(s) • Environmental Impacts
/iii/	28/04/2017	M. Ruchiraj Rath	Siemens Gamesa	<ul style="list-style-type: none"> • Project Design and

				<ul style="list-style-type: none"> technical specifications • Project Implementation status • Project start date • Project Location(s) • Environmental Impacts
/iv/	28/04/2017	Devendra P. Singh	Siemens Gamesa	<ul style="list-style-type: none"> • Project Design and technical specifications • Project Implementation status • Project start date • Project Location(s) • Environmental Impacts
/v/	28/04/2017 and 11/05/2017 (Through Skype)	Ramkrishna Patil	EKI Energy Services Ltd.	<ul style="list-style-type: none"> • Project Design and technical specifications • Project Implementation status • Project start date • Project Location(s) • Baseline Scenario • Baseline Identification and Additionality • Estimated ER calculations • Qualification and Training • Monitoring and reporting documentation • Quality Assurance- Management and operating system • Environmental Impacts • Compliance with relevant national and state laws • Roles and responsibility • Actual ER calculations

2.4 Site Inspections

A site visit was undertaken on 28/04/2017 to confirm the project description as provided in the Joint PD & MR^{01a}. During the OSV, topics as outlined in the tables in the section 2.3 were discussed/ focused on. The site visit was conducted to assess the implementation and operation of the project activity and to review evidence and interview key personnel to confirm the project design, implementation, operations, monitoring plan, QA/QC procedures, environmental impacts and stakeholders of the project.

2.5 Resolution of Findings

This section summarises the findings from the joint validation and verification of the grouped project activity. In this section the findings from the document review, site visit, assessments and interviews are provided. Material discrepancies identified during the joint validation and verification process are addressed either as CARs and CLs. Carbon Check has identified, discussed these issues within the Joint Validation & Verification report in Appendix 2.

- Clarification requests (CLs): Project reporting lacks transparency and further information is needed to determine if a material discrepancy is present.

- Corrective action requests (CARs): The VVB has identified a material discrepancy or non-conformance that the project proponent must address.

The final Joint PD & MR (version02)^{02/} submitted by PP serves as the basis for the final assessment presented. Additional changes to the project during the validation and verification process are not considered to be significant with respect to the main VCS objectives. The two VCS main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

A total of 08 CARs and 06 CLs had been raised for the joint validation and verification of the grouped project activity and have been resolved.

Summary of findings:

SI. No.	Reference Section	CAR	CL	FAR
1.	Project Details	01	04	0
2.	Application of Methodology	04	0	0
3.	Estimated GHG Emission Reductions and Removals	02	01	0
4.	Monitoring	0	01	0
5.	Safeguards	0	0	0
6.	Achieved GHG Emission Reduction and Removals	0	0	0
7.	General	01	0	0
Sum		08	06	0

2.5.1 Forward Action Requests

Forward Action Request (FAR) is to be raised when the monitoring and reporting require attention and/or adjustment for the next verification period. FARs does not relate to VCS requirements for issuance of ERs achieved during subject monitoring.

CC IPL has not raised any FAR during this joint validation and verification.

3 VALIDATION FINDINGS

3.1 Project Details

The main purpose of the grouped project activity is installation, commissioning and operation of multiple Wind Power Projects at different locations in the India. The grouped project currently involves a single project activity instance, which is located at Badnawar and Gandhwada site (district of Dhar) in the state of Madhya Pradesh. The proposed total installed capacity is 100 MW by operation of 50 Wind Turbine Generators (WTGs) of 2.0 MW each. The electricity produced from the grouped project activity shall be supplied to the regional electrical grid, which is part of the national grid of India. Currently, the grouped project consists of a single wind power plant site located in the Indian state of Madhya Pradesh. This was confirmed based on review of Joint PD & MR^{/02/}, Purchase order issued to the technology supplier^{/08/}, Commissioning certificate of currently operating power project^{/09/} and by conducting interviews with representatives of PP^{/i/v/}.

In the pre- project scenario, the entire 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.

Technical specifications of Wind power project:

The current project activity involves production of electrical energy through wind power by installation and operation of wind turbine generators as a power plant. In order to achieve the same, the PP has employed Siemens Gamesa's G97, 2000 kW wind turbine generator. The technical details of the same has been provided below:

Technological particulars	Details
Rated power	2000 kW
Cut-in wind speed	3 m/s
Cut-out wind speed	25 m/s
Hub height	97 m
Swept Area	7,390 m ²
Wind turbine type class	IIA/IIIA
Successful performance lifetime	15 years

The above was confirmed based on the review of technical specifications in the product brochure¹ and by conducting interviews with representatives of PP^{/i/,/v/}.

The project proponent and owner for the grouped project activity is Hero Future Energies Private Limited. EKI Energy Services Ltd. has been identified as carbon consultant.

The grouped project is currently located within the state of Madhya Pradesh (India) and the geographical boundary is within the country of India.

The start date of the grouped project activity is 29/03/2016 and is the earliest date of commissioning of wind turbine generators. The start date of the project activity has been confirmed through review of Commissioning certificates of currently operating power projects^{/09/}.

The project crediting period starts on 29/03/2016 and ends on 28/03/2026; with a total crediting period of 10 years (renewable twice).

The project scale is Project as the expected ERs from the grouped project activity is less than 300,000 tCO₂e/year.

The total estimated GHG emission reductions expected for the grouped project is 1,712,930 tCO₂e for the entire crediting period (of ten years). Thus, the estimated annual average emission reductions are 171,293 tCO₂e. This was confirmed based on the review of ER validation spreadsheet^{t/04a/}.

Prior to the project initiation, the entire 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.

The above scenario is also the respective baseline scenario and was confirmed to be accurate during on site assessment and interviews with representatives of PP^{/i/,/v/}.

The project is in compliance with the applicable regulatory framework on wind power projects in targeted country of India.

It has been confirmed in the Joint PD & MR^{/02/} that the project or any of its components are not seeking registration and has not been registered under any GHG program. This was based on review of declaration^{/18b/} provided by PP.

Eligibility criteria for grouped projects:

The eligibility criteria have been provided in section 1.13 of the joint PD and MR^{/02/} and which includes justification for inclusion of project instances to the grouped project. The assessment of the same has been provided in the table below:

Sr. No	Eligibility Criteria	Eligibility of Project Activity instances	Assessment by DOE
1	Applicability Conditions: The project activity instances shall meet applicability conditions for	All initial project activity instances meet applicability conditions of methodology ACM0002 Version 17, hence this eligibility criteria is	The assessment team reviewed section 2.2 of joint PD and MR ^{/02/} including supporting documents and

¹ <http://www.gamesacorp.com/recursos/doc/productos-servicios/aerogeneradores/nuevas-fichas/g97-20-mw-eng.pdf>

	<p>applicable methodology (ACM0002 Version 17) as defined in section 2.2</p>	<p>fulfilled. Please refer section 2.2 of this document for applicability criteria.</p>	<p>further conducted interviews with representatives of PP^{i,v/} to confirm that the initial project activity instance complies with the requirements of their applied methodology ACM0002 (version 17.0)^{B02/}. Refer to assessment provided in section 3.2.2 of this report for more details.</p> <p>This is deemed appropriate to the verification team. Thus, the requirement of this eligibility criterion has been met by the initial project activity instance added to the grouped project.</p>
2	<p>Geographical Area: The project activity instances to be included in the grouped project activity will be activities involving grid connected renewable electricity generation using wind technology located within India.</p>	<p>All initial project activity instances being included in the grouped project are located within geographic boundaries of India. Hence this condition is fulfilled.</p> <p>Please refer commissioning certificate, PPA for Geographical area of project activity.</p>	<p>The assessment team reviewed the commissioning certificate^{09/} and PPA^{11/} to confirm that the initial project activity instance is a grid-connect wind power plant (renewable energy) located in at Badnawar and Gandhwada site (Dhar) in Madhya Pradesh, which is within the geographical boundary of India.</p> <p>This is deemed appropriate to the verification team. Thus, the requirement of this eligibility criterion has been met by the initial project activity instance added to the grouped project.</p>
3	<p>Baseline scenario: All Project Activity Instances shall meet the baseline definition as defined in respective methodology and as explained in section</p>	<p>All initial project activity instances have same baseline as per methodology as detailed in subsequent sections. Hence this eligibility criteria is</p>	<p>The assessment team reviewed section 2.4 of the joint PD and MR^{02/}, conducted physical inspections during OSV and further based on its sectoral</p>

	<p>2.4</p>	<p>fulfilled.</p> <p>Please refer section 2.4 of this document for baseline scenario.</p>	<p>expertise confirms that the description of baseline scenario as mentioned in the aforementioned section is accurate and meets the requirements of §24 of the applied methodology^{B02/}.</p> <p>This is deemed appropriate to the verification team. Thus, the requirement of this eligibility criterion has been met by the initial project activity instance added to the grouped project.</p>
<p>4</p>	<p>Technology type: The project activity instances to be included in the grouped project activity will be</p> <p>Greenfield activities involving grid connected renewable electricity generation using wind technology. The electricity should be supplied to grid, or to third party or to be used for captive purpose etc.</p>	<p>All initial project activity instances being included in the grouped project activity are wind power plants connected to grid and are green field activities. The generated electricity is supplied to grid.</p> <p>Hence this condition is fulfilled.</p> <p>Please refer PO / Commissioning certificate/PPA for the technology of project activity.</p>	<p>The assessment team reviewed the purchase order^{08/}, commissioning certificate^{09/} and PPA^{11/} to confirm that the initial project activity instance is a greenfield, grid-connected wind power plant which supplies electricity to the Indian grid.</p> <p>This is deemed appropriate to the assessment team. Thus, the requirement of this eligibility criterion has been met by the initial project activity instance added to the grouped project.</p>
<p>5</p>	<p>Additionality: The project activity instances to be added as part of the grouped project will meet additionality criteria as set out in applicable methodology ACM0002.</p> <p>For large scale projects - investment analysis will be followed and additionality tool and methodological</p>	<p>The initial project activity instances being included in grouped project activity are large scale projects and their additionality is demonstrated as discussed in section 2.5 of this document.</p> <p>Hence this condition is fulfilled.</p> <p>Please refer section 2.5 of this document for additionality.</p>	<p>The assessment team reviewed section 2.5 of the joint PD and MR^{02/} (and all additionality related supporting documents) to confirm that the initial project activity instance has been demonstrated to be additional in regards to the requirements laid out in section 5.3.2 of the applied methodology^{B02/} and relevant requirements of the</p>

	<p>tool “Investment Analysis” will be used.</p>		<p>“Tool for the demonstration and assessment of additionality”, Version 07.0.0^{B06/} and methodological tool Investment Analysis (version 07.0)^{B07/}. Refer to assessment provided in section 3.3.5 of this report for more details.</p> <p>This is deemed appropriate to the assessment team. Thus, the requirement of this eligibility criterion has been met by the initial project activity instance added to the grouped project.</p>
6	<p>Start Date: The start date of each project activity instance under the grouped project should not be prior to the start date of the grouped project. The start date of each project activity instance will be determined through documentary evidence.</p>	<p>The start date of grouped project is considered as 29/03/2016, which is commissioning date of project activity instance and start date of all other project activity instances is after this date.</p> <p>Hence this condition is fulfilled.</p> <p>Please refer section 1.5 of this document for start date of grouped project activity.</p>	<p>The assessment team reviewed the joint PD and MR⁰² and the commissioning certificate^{09/} and confirms that the start date of the project activity (i.e. 29/03/2016) has been accurately identified and mentioned. The start date is the earliest date of commissioning of wind turbine generators.</p> <p>This is deemed appropriate to the assessment team. Thus, the requirement of this eligibility criterion has been met by the initial project activity instance added to the grouped project.</p>
7	<p>Conditions that avoid double counting of emission reductions like unique identifications of project and claiming emission reduction only under one GHG program</p>	<p>For initial project activity instances being included in grouped project activity, PP declaration has been provided and these project activity instances are not participating in any other GHG program.</p> <p>Hence this condition is fulfilled.</p>	<p>The assessment team reviewed the declaration^{18a/} provided by PP and confirms that a confirmation has been provided that the grouped project activity is not participating in any other Emission trading programme and other binding limits. In</p>

		<p>Please refer PP declaration for no double accounting of GHG emission reductions.</p>	<p>addition, the unique identification of the initial project activity can be demonstrated from the commissioning certificate^{09/}, which details the electricity meter serial numbers which are unique for each project activity instance. Thus, the initial project activity instance is able to successfully demonstrate that it is able to avoid double counting of emission reductions.</p> <p>This is deemed appropriate to the assessment team. Thus, the requirement of this eligibility criterion has been met by the initial project activity instance added to the grouped project.</p>
8	<p>The Grouped Project specific requirements stipulated by the Entity responsible for coordinating and managing grouped project for conducting local stakeholder consultations and environmental impact assessment (EIA), as applicable</p>	<p>Being wind renewable technology, EIA is not required for any project activity instances as per EIA notification.</p> <p>For initial project activity instances being included in grouped project activity, local stakeholder consultation is not mandatory, hence this is not mentioned in VCS PD. The DOE validation contract is already signed prior to 19/04/2017.</p> <p>For new future project activity instances, local stakeholder consultation is required.</p>	<p>The assessment team reviewed the joint validation and verification contract signed between DOE and PP^{21/} and confirms that it is dated 26/12/2016, which is before the VCS deadline of 19/04/2017. Thus, carrying out of LSC and EIA is not mandatory for the initial project activity instance under the grouped project as per VCS Standard (version 3.6)^{B01b/}. Considering this, PP has not carried out an LSC and EIA which is acceptable to the assessment team.</p> <p>However, for future project activity instances (having signed validation contracts after 19/04/2017) carrying out LSC and EIA will be mandatory as per relevant</p>

			<p>requirements of section 3.17 of the VCS Standard (version 3.6) ^{/B01b/}.</p> <p>This is deemed appropriate to the assessment team. Thus, the requirement of this eligibility criterion has been met by the initial project activity instance added to the grouped project.</p>
9	<p>The project activity using wind project will supply electricity to grid or to users.</p>	<p>For initial project activity instances being included in grouped project activity, are supplying electricity to grid.</p> <p>Please refer PPA of the project activity for same.</p>	<p>The assessment team reviewed the PPA^{/11/} signed between the PP and M.P. Power Management Company Limited to confirm that the electricity generated from the operation of the wind power plant (first project activity instance) will be supplied to the regional grid, which is part of the national grid of India. This was further confirmed based on conducting interviews with representatives of PP^{/i,/v/} during OSV.</p> <p>This is deemed appropriate to the assessment team. Thus, the requirement of this eligibility criterion has been met by the initial project activity instance added to the grouped project.</p>

CAR 02, CL01, CL02, CL03 and CL05 have been raised in this regard and subsequently resolved. Refer to Appendix-2 for further details.

Based on its assessment through review of relevant documentation (as cited above), the assessment team confirms that the description given in the Joint PD & MR^{/02/} is accurate, complete, and provides an understanding of the nature of the project, and the project has been implemented as described in the Joint PD & MR^{/02/}.

3.2 Participation under Other GHG Programs

Not Applicable.

3.3 Application of Methodology

3.3.1 Title and Reference

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

- ACM0002: Grid-connected electricity generation from renewable sources (version 17.0)^{/B02/}.

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

- Tool for the demonstration and assessment of additionality --- Version 07.0.0, EB 70, Annex 8^{/B06/}.
- Tool to calculate the emission factor for an electricity system --- Version 05.0, EB 87, Annex 09^{/B04/}.

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

3.3.2 Applicability

The grouped project activity applies the approved large-scale CDM methodology; ACM0002, version 17.0^{/B02/}. The validation team by means of document review and interviews assessed applicability criteria for the baseline line methodology. Validation team confirms that the project activity meets the criteria of the applied methodologies.

CAR 03 has been raised in this regard and subsequently resolved. Refer to Appendix-2 for further details.

Applicability criteria as per methodology ^{/B02/}	Justification from PP ^{/02/}	Means of validation
<p>This methodology is applicable to grid-connected renewable energy power generation project activities that:</p> <ol style="list-style-type: none"> Install a Greenfield power plant; Involve a capacity addition to (an) existing plant(s); Involve a retrofit of (an) existing operating plants/units; Involve a rehabilitation of (an) existing plant(s)/unit(s);or 	<p>The project activity instances under grouped project activity is installation of a new grid connected renewable energy wind power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (Greenfield plant) and hence this criterion is applicable.</p>	<p>The validation team reviewed the Joint PD & MR^{/02/}, Purchase order^{/08/}, Power purchase agreement^{/11/} and conducting physical inspections during OSV combined with interviewing representatives of PP^{/i,/v/} confirms that the initial project activity instance under the grouped project activity involves generation of electricity through renewable energy by operation of green</p>

<p>e. Involve a replacement of (an) existing plant(s)/unit(s).</p>		<p>field wind power plants that supply electricity to the regional grid, which is part of the national grid of India.</p> <p>Thus, based on the above, the assessment team concludes that the grouped project activity has successfully complied with requirements of the current applicability criteria of the applied methodology ACM0002, (version 17.0)^{/B02/}.</p>
<p>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;</p>	<p>The proposed project activity instances under grouped project activity will be an installation of a new grid connected renewable wind energy power plant and hence this condition is met.</p>	<p>The validation team reviewed the Joint PD & MR^{/02/} and by conducting physical inspections during OSV combined with interviewing representatives of PP^{/1,./v/} confirms that the initial project activity instance under the grouped project activity involves installation and operation of wind power plants thereby resulting in generation of electricity through renewable energy.</p> <p>Thus, based on the above, the assessment team concludes that the grouped project activity has successfully complied with requirements of the current applicability criteria of the applied methodology ACM0002, (version 17.0)^{/B02/}.</p>
<p>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.</p>	<p>The proposed project activity instances under grouped project activity are grid connected renewable wind energy project. This condition is applicable only for hydro power plants and not applicable for wind projects.</p>	<p>Criterion not applicable.</p>

<p>In case of hydro power plants, one of the following conditions shall apply:</p> <ol style="list-style-type: none"> 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 <ol style="list-style-type: none"> a) 	<p>The proposed project activity instance under grouped project activity does not involve any capacity additions, retrofits or replacements and therefore this condition is not applicable.</p>	<p>Criterion not applicable.</p>
<p>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:</p> <ol style="list-style-type: none"> (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; (iii) Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m² shall be: <ol style="list-style-type: none"> b) Lower than or equal to 15 MW; and <p>Less than 10 per cent of the total installed capacity of integrated hydro power project.</p>	<p>The proposed project activity instances under grouped project activity are grid connected renewable wind energy project. This condition is applicable only for hydro power plants and not applicable for wind projects.</p>	<p>Criterion not applicable.</p>
<p>In the case of integrated hydro power projects, project proponent shall:</p> <ul style="list-style-type: none"> • Demonstrate that water flow from upstream power 	<p>The proposed project activity instances under grouped project activity are grid connected renewable wind energy project. This condition is applicable only for</p>	<p>Criterion not applicable.</p>

<p>plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project; or</p> <ul style="list-style-type: none"> • 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. 	<p>hydro power plants and not applicable for wind projects.</p>	
<p>The methodology is not applicable to:</p> <ul style="list-style-type: none"> • 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; • Biomass fired power plants/units. 	<p>The project activity instances under grouped project activity will be installation of a new grid connected renewable wind energy project and does not involve switching from fossil fuel to renewable energy and hence this criterion is not relevant to the grouped project activity.</p> <p>This grouped project activity does not involve any biomass-based power plants and hence this criterion is not applicable to the project activity.</p>	<p>Criterion not applicable.</p>
<p>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</p>	<p>The project activity instances under grouped project activity will be a new grid connected renewable wind energy plant and not a retrofit, replacement or capacity additions and therefore this criterion is not applicable to the project activity.</p>	<p>Criterion not applicable.</p>

<p>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”.</p>		
<p>Applicability conditions of “Tool to calculate the emission factor for an electricity system”</p>		
<p>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).</p>	<p>This condition is applicable. OM, BM and CM are estimated using the tool for calculating baseline emissions.</p>	<p>Based on the review of joint PD and MR^{/02/} and physical inspections during OSV^{/i./v/} the validation team confirms that the initial project activity instance under the grouped project activity is installation of wind power plants which supply electricity to the grid. Thus, this tool is applicable. Moreover, the validation team reviewed the joint PD and MR^{/02/}, the ER and EF estimation spreadsheet^{t/04b/} and further based on understanding of the Tool to calculate the emission factor for an electricity system (version 5.0)^{/B04/} confirms that the tool has been appropriately applied to estimate OM, BM and CM for calculating baseline emissions. Hence this Applicability criterion is met by the project activity.</p>
<p>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, 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</p>	<p>Since project activity instances under grouped project activity is grid connected, this condition is applicable and the emission factor has been calculated accordingly.</p>	<p>The validation team reviewed the joint PD and MR^{/02/} and the ER and EF estimation spreadsheet to confirm that the emission factor for the project electricity system has been calculated for grid power plants only. This is deemed appropriate by the validation team. Hence this Applicability criterion is met by the project activity.</p>

<p>stability of the grid are primarily due to constraints in generation and not to other aspects such as transmission capacity.</p>		
<p>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.</p>	<p>The project activity instances under grouped project activity will be located in India, a non-Annex I country. Therefore, this criterion is not applicable for the project activity.</p>	<p>Based on the review of joint PD and MR⁽⁰²⁾, physical inspections and interviews during OSV^(i,iv) the validation team confirms that the initial project activity instance under the grouped project activity is located in India which is a non-Annex I country. Moreover, based on the eligibility criteria and supporting evidences it shall be ensured that all future project activity instances added to the grouped project shall be located in India. This is deemed appropriate by the validation team. Hence this Applicability criterion is met by the project activity</p>
<p>Under this tool, the value applied to the CO₂ emission factor of biofuels is zero.</p>	<p>Each project activity instances under grouped project activity will be grid connected renewable wind energy project and CO₂ emission factor is not considered for biofuels.</p>	<p>The grouped project activity involves installation of a Greenfield wind power project. The project does not involve any biofuels. Hence, this Applicability criteria is not relevant to the project activity.</p>

3.3.3 Project Boundary

As per §22 of the applied methodology^{/B02/} 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 & MR⁽⁰²⁾.

The geographical boundary for the project activity has been identified as the physical boundaries of country of India.

The assessment team confirms that the project boundary for the project instances is based on the applied methodology^{/B02/} 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 grouped project.

3.3.4 Baseline Scenario

To describe the baseline scenario the PP has employed the requirements listed under §24 of the applied methodology^{/B02/}, which states:

“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.”

As that the current grouped project involves installation and operation of greenfield, grid-connected wind power plants, the above assigned baseline scenario is deemed to be consistent.

This was confirmed based on sectoral expertise of the assessment team and further by reviewing the Joint PD & MR^{/02/}, Purchase orders^{/08/}, Power purchase agreements^{/11/} and conducting physical inspections during OSV combined with interviewing representatives of PP^{/i/,v/}.

Thus, the baseline scenario has been identified in line with the requirements of the applied methodology ACM0002 (version 17.0)^{/B02/} and is deemed to be appropriate and justified.

CAR 04 has been raised in this regard and subsequently resolved. Refer to Appendix-2 for further details.

3.3.5 Additionality

The project is large-scale project (as per CDM requirements). Therefore, in accordance with ACM0002, the additionality of the project has been demonstrated based on the valid version of the “Tool for demonstration and assessment of additionality” (version 7.0)^{/B06/} and the “Methodological Tool: Investment analysis” (version 7.0)^{/B07/}. For the above reasons, this approach has been assessed to be appropriate for the assessment of additionality for this project activity.

Prior consideration:

During conceptualization of the project activity, board of directors of the project proponents considered the GHG revenue to improve the project financials. During the board meetings for Hero Future Energies Private Limited respectively, board of Directors decided that they would consider GHG revenue for their project activity. The date of board meeting and decision taking^{/05/} for the project activity instance is provided below:

Project	Date of board meeting and decision ^{/05/}
Wind Grouped project by Hero Future Energies Private Limited (EKIESL-VCS-Aug-16-03)	22/06/2015

In continuation to the board decision, PP received offer letter^{/07/} and then after subsequent decision with the manufacturer placed the purchase order^{/08/} for the wind project. In the above background, the Validation Team concludes that the additionality justification regarding the serious CDM/VCS consideration given by the project developer is in accordance with the requirements derived from VVS version 09^{/B01i/}.

Alternatives:

This is a wind power project and is based on the Methodology ACM0002 (version 17.0)^{/B02/} The methodology states, *“If the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following: 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”.

Now since the approved methodology ACM0002 used by the project activity prescribes the baseline scenario, no further analysis of alternatives is required for the project activity.

Investment analysis:

a) Suitability of investment analysis, financial indicator and benchmark:

PP had demonstrated that the financial returns of the proposed VCS project activity would be insufficient to justify the required capital investment as per VVS (version 09.0)^{B01i/}. PP has adopted a conservative approach to identify the benchmark for the project activity. The project is earning revenue from sale of electricity to the regional grid and hence has another source of revenue apart from revenue from sell of VERs. Thus, simple cost analysis is not appropriate. Also in the absence of the project activity grid electricity would have been the obvious choice for the project, which requires no investment. Hence investment analysis is also not appropriate for the project activity. Therefore, benchmark analysis is used for the project activity as per project type and decision making context. The choice of post-tax equity IRR and the corresponding benchmark is considered appropriate by the validation team.

PP identified the benchmark using the guideline vide “Methodological Tool: Investment analysis”, version 06.0^{B07/}, “The values in the table in Appendix A may also be used, as a simple default option”. However, since RBI (Reserve Bank of India, India Central Bank) provides forecast inflation for both 5 & 10 years, the project investor has calculated benchmark using 10 years duration and the calculated value is considered as benchmark for the project activity. The WPI median inflation forecast for 10 years are added to the default values for the project participants as below:

Project participant	Default value (In real terms) ^{B07/2}	Inflation forecast (WPI Mean) as per RBI for 10yrs	Final benchmark (in nominal terms)
Hero Future Energies Private Limited	11.75%	3.80%	16.00%

b) Parameters and assumptions used: The project involves installation of grid connected wind power plants with the following installed capacities:

Sl. No.	Project Location	State	Project Capacity (MW)
1	Badnawar and Gandhwada site, Dhar	Madhya Pradesh	100 MW

The important parameters, which determine the equity IRR of the project, are project cost, PLF, financing pattern and profitability estimates.

The project cost is based on the offer letters^{07/} submitted by wind project suppliers based on which further action was taken. The offer letters^{07/} were available during decision-making and financial profitability of the project was decided based on the offer letters^{07/}. Validation team checked all the offer letters of the project activity and found that consideration of the project cost is correct and justified.

² Although the latest version of the Methodological Tool: Investment analysis, is version 07.0, but PPs have adopted the default value of the benchmark from version 05.0 of the tool which was available at the time of decision making which is deemed acceptable.

Further, the assessment team has checked the signed purchase orders^{/08/} as the actual cost is available during the validation. The variation in purchase and offer is taken care in sensitivity analysis and the approach is considered correct by the assessment team. In India, infrastructure projects are generally entitled to a debt equity ratio of 70:30 and the same has been considered for the both the projects in the financial analysis, which is deemed appropriate by the validation team.

The profitability of the project, which forms the basis for IRR calculation is based on installed capacity, PLF, electricity tariff, O&M cost, depreciation and taxation. The installed capacity is based on the capacity of wind projects, which is evidenced by the Offer letters and purchase orders issued subsequently.

c) **Assessment of PLF:**

PP considered the Plant load factor from a MPERC Tariff Order (dated 26/03/2013)^{/15/}, for expected electricity generation estimation. The same was reviewed by the validation team for cross-check purposes and found to be accurate. This is deemed acceptable.

d) **Assessment of Electricity Tariff:**

The tariffs for the projects were taken from the government tariff order^{/15/} available at the time of decision-making. The tariff was further cross-checked from the PPA^{/11/} signed for the initial project activity instance and hence deemed acceptable.

e) **Assessment of O & M Cost:**

PP considered the O&M cost from the offer letters^{/07/}. The offer value has been used in the financial calculation, as it was available during decision-making and hence applicable.

f) **Assessment of Tax computation:**

The project developers have adopted book depreciation rates as per Schedule XIV of the Companies Act, 1956 for computing book profit and Income Tax Act 1961 stipulated for income tax calculation, which are in conformity with the accepted accounting principles adopted by the company and income tax laws in the host country. The block of assets has been computed for depreciation purpose as per the accepted accounting principles. Tax liability has been calculated as per the income tax rules and the rulings given. In computing the income tax liability, the project developers have considered Tax holiday (u/s 80IA of the Income Tax Act, 1961). Accelerated depreciation on plant and machinery is also sourced from IT act. The tax rates assumed corresponds to the tax rate prevailing at the time of taking decision. Hence, these assumptions are appropriate during decision-making context.

g) **Cross checking of the parameters:**

The cost of wind project, electricity tariff, O&M cost, depreciation, salvage value and tax rate have been checked with offer letter^{/07/}, tariff order^{/15/}, Income Tax Act and power purchase agreement^{/11/}. The offer value has been used in the financial calculation is the same as was available during decision-making and hence applicable. The same is acceptable to the assessment team. The project developer has adopted book depreciation rates as per Schedule XIV of the Companies Act, 1956 for computing book profit and Income Tax Act 1961 stipulated for income tax calculation, which are in conformity with the accepted accounting principles adopted by the company and income tax laws in the host country.

The documents supporting the financial calculations, in the opinion of Validation Team, are therefore authentic and conform to the guidance given by CDM EB. All the input parameters considered in computation, the basis, correctness and appropriateness thereof are checked and found correct.

h) **Assessment of correctness of computation:**

The assessment involved checking the data input taken from offer letter^{/07/} and tariff order^{/15/}, adoption of correct accounting principle and arithmetical accuracy. Validation Team checked the documents and

ensured that appropriate input has been taken in the project cost and projections. The arithmetical accuracy was also found to be correct. The equity IRR has been computed for a period of 25 years, which is the life time of the project and is in conformity with the Methodological Tool: Investment Analysis, version 07.0^{B07/}. In computing the IRR, the project developer has taken into account profit after tax, depreciation tax shield and salvage value (in the terminal year). The principle adopted conforms to the accepted accounting and taxation principles. Validation team also confirms that rest of the input parameters is considered appropriately and are in line with the Methodological Tool: Investment Analysis, version 07.0^{B07/}.

Sensitivity analysis:

The Methodological Tool: Investment Analysis, (version 07.0)^{B07/} requires the robustness of the conclusion arrived at to be proved through a sensitivity analysis by varying the critical assumptions to a reasonable variation. The project developers have identified Plant Load Factor (PLF), Project cost, Electricity tariff and O&M cost as critical assumptions. These critical parameters constitute more than 20% of either total project costs or total project revenues. The sensitivity analysis reveals that even under more favorable conditions, the IRR without VCUs revenue would not cross the benchmark return as given in the following tables:

100 MW Badnawar and Gandhwada site project

Input Parameters	-10%	Base IRR	+10%
PLF	3.17%	5.19%	6.82%
O&M cost	5.59%	5.19%	4.75%
Project Cost	6.64%	5.19%	3.78%
Tariff	3.26%	5.19%	6.80%

Validation Team further carried out its own independent assessment, which reveals that the project would become non additional if

- Generation goes up by 65.30%
- Project cost goes down by 42.36%
- O&M cost goes down by 392.00%
- Tariff goes up by 67.50%

PP has submitted that such a reduction in project cost or increase in PLF or tariff is highly unrealistic and unlikely to happen and reasoned out as follows:

Generation: The generation capacity of a wind power plant is computed on a system performance model, taking in to account the working temperature, voltage generation and losses within the system as well as operator defined factors such as grid interaction and transmission losses, etc. However, to be conservative, the value of PLF has been taken from MPERC Tariff Order (dated 26/03/2013)²². Moreover, the weighted average PLF considered is 20%. Therefore, to achieve a PLF of 85.30% (which tantamount to an escalation of 65.30%) on a sustained basis is not possible.

Project cost: Project developer has already signed the Supply & EPC Agreement^{08/} as per which the cost works out to INR 5900 million which is around 30 % less than the cost assumed in financial indicator calculation (i.e., INR 8500 million). So, the actual project cost is within the limits of sensitivity calculated (42.36%).

O&M cost: O&M cost is based on the cost estimate given by EPC contractor and consist of mainly wages & salaries, travel & conveyance, repairs & maintenance, stores & spares, communication, printing & stationary – all of which are subject to inflationary pressure. With the country experiencing inflation at the rate of ~5% p.a. any reduction in O&M cost is ruled out.

Tariff: The tariff is governed by PPA, which is fixed during the lifetime of the project. Therefore, any increase in tariff is unrealistic.

Validation Team is in agreement with the reasoning given by the PP and hence concludes that such an increase in tariff or generation or reduction in project cost or O&M cost is unrealistic and hypothetical.

Having regard to the assessment of conformity of additionality demonstration and benchmark selection to the latest version of the guidance issued by CEM EB on the assessment of investment analysis, plausibility and appropriateness of parameters used and correctness of financial calculations, Validation Team concludes that the project scenario is not economically feasible without benefits from VCUs sales.

Common practice analysis:

For the purpose of common practice analysis, project developer has chosen the only power generating project activity instance under operation as on the start date of the project, with a total installed capacity of 100 MW in the country of India. There are more than 2300 projects engaged in power generation using wind turbine technology. Out of the total number of projects only 1 project was identified to comply with all the requirements listed in step 2 of the Common Practice tool (version 03.1)^{/B08/}. This was confirmed based on the wind database spreadsheet^{/13/} provided by PP. The identified project is neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation. Thus, as determined in step 3 the value of $N_{all} = 1$. The project identified in step 3 applies the same technology applied in the proposed project activity. Thus, as determined in step 4 the value of $N_{diff} = 0$.

$$\text{Therefore } F = 1 - N_{diff}/N_{all} = 1 - (0/1) = 1$$

and

$$N_{all} - N_{diff} = 1 - 0 = 1$$

Since F is 1 and the difference between $N_{all} - N_{diff}$ is also 1 (less than 3), it is concluded that the project activity is not a common practice in the country. The details of the projects, the source of data and the calculations are given in the Joint PD & MR^{/02/}.

In the above background, the assessment team concludes that the project is not a business-as-usual scenario and is additional. The VCS benefits would enable the project to become financially attractive.

CAR05 and CAR08 have been raised in this regard and subsequently resolved. Refer to Appendix-2 for further details.

3.3.6 Quantification of GHG Emission Reductions and Removals

The equations and choices provided in the applied methodology ACM0002 (version 17.0)^{/B02/} and all other methodological tools are correctly quoted in the Joint PD & MR^{/02/}. The emission reductions of the grouped project activity project would be calculated using the formulae mentioned in the applied methodology^{/B02/}

Validation team based on the review of the Joint PD & MR^{/02/}, confirms that the formulae are correctly presented for the determination of emissions reductions. The parameters and equations presented in the Joint PD & MR^{/02/}, as well as other applicable documents, have been compared with the information and requirements presented in the applied methodology^{/B02/}. An equation comparison has also been made to ensure consistency between all the formulae presented in the Joint PD & MR^{/02/} and ER validation spreadsheet^{/04a/} and the applied methodology^{/B02/}.

Baseline Emissions:

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

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

Where:

BE_y	=	Baseline emissions in year y (tCO ₂ e/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 CO ₂ emission factor for grid connected power generation in year y calculated using the latest version of the “Tool to calculate the emission factor for an electricity system” (tCO ₂ e/MWh)

The estimation of the baseline energy generation was done by using the total installed capacity of the project activity, yearly generation hour and plant load factor. The project activity involves installation of 100 MW grid connected power plant in the state of Madhya Pradesh. This was confirmed based on assessment of Joint PD & MR^{/02/} and ER validation spreadsheet^{/04b/}.

Assessment of calculation of the Grid Emission Factor ($EF_{grid, CM, y}$):

Baseline emission factor is calculated as combined margin, consisting of a combination of operating margin (OM) and build margin (BM) factors according to the procedure prescribed in the “Tool to calculate the emission factor for an electricity system” (version 05.0)^{/B04/}. The data for calculation of the grid emission factor is sourced from CEA data base (version 11.0), Govt. of India^{/B05/} which is the latest available data. The baseline emission factor calculation is checked by the validation team and found that the calculation is transparent and conservative.

For estimating the operating margin emission factor, PP calculated ex-ante Simple Operating Margin (OM). As per the “Tool to calculate the emission factor for an electricity system” (version 05.0)^{/B04/}: for grid power plants, use a 3-year generation-weighted average, based on the most recent data available at the time of submission to the DOE for validation. Hence, PP considered the weighted average of latest net electricity generation and import of electricity and associated emission from CEA data base (version 11.0)^{/B05/}.

The value of operating margin considered as 0.9941 tCO₂ /MWh and the value of build margin as 0.9285 tCO₂ /MWh (based on the latest one year data). The weighting for both operating margin is taken as 0.75 and build margin as 0.25 for wind power generation projects. Validation team checked the estimation procedure and considered data and found transparent and conservative.

Thus, the emission factor for the project is calculated to be $EF_y = 0.9777 \text{ tCO}_2\text{e/MWh}$ 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.

Project Emissions:

The current grouped project involves wind technology which is a renewable energy source. Thus, as per §36 the ACM002 (version 17)^{B02/} 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 ACM0002 (version 17)^{B02/}, no other leakage emissions are considered. Thus, the leakage is considered as zero, therefore

$$LE_y = 0$$

Emission Reductions:

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

$$ER_y = BE_y - PE_y \quad (2)$$

Where:

ER_y	=	Emission reductions in year y (t CO ₂ e/yr)
BE_y	=	Baseline emissions in year y (t CO ₂ /yr)
PE_y	=	Project emissions in year y (t CO ₂ e/yr)

Thus, as $PE_y = 0$

$$ER_y = BE_y \quad (3)$$

The assessment team confirms that the applied methodology^{B02/} and the referenced tools have been applied correctly to calculate baseline emissions and net GHG emission reductions the project crediting period.

CAR06, CAR07 and CL04 have been raised in this regard and subsequently resolved. Refer to Appendix-2 for further details.

3.3.7 Methodology Deviations

Not Applicable.

3.3.8 Monitoring Plan

The grouped project employs the large-scale approved CDM methodology namely ACM0002 (version 17.0)^{/B02/} and in accordance with the same, the parameters to be monitored ex-post are given below:

Parameters to be monitored:

Sl. No.	Parameter(s) ^{/02/}	Units	Description ^{/B02/}	Source of monitoring data ^{/02/}	Monitoring frequency
1	EG _{PJ,y}	MWh	Quantity of net electricity generation supplied by the project (Wind) plant/unit to the grid in year y	Joint meter readings	Continuous monitoring and monthly recording

Thus, the parameter to be monitored ex-post involves monitoring of net electricity supplied to the grid (calculated from electricity exported and imported) to the national grid by the grouped project activity.

Wind power projects generally involve common metering (for power plants/feeders) at the local government substation and in such cases an apportioning mechanism is used to determine the actual power exported to grid by each power plant/feeder. Under this mechanism, appropriate weights (based on installed capacity) are assigned to each power plant/feeder and the net electricity imported by that power plant/feeder is calculated as the weighted fraction of the total power fed into that substation. This figure is reflected in the monthly JMR and invoice is created based on the same exported power.

As the first project activity instance under the current grouped project does not involve common metering (instead it has a dedicated substation at plant side), the apportioning mechanism will not be applicable in this case. This was confirmed based on interviews^{/i/,iv/} and physical inspections conducted during OSV.

In cases where dates of monitoring period don't match with the dates of billing cycle the PP shall calculate the net electricity exported to the grid on pro rata basis. This approach is deemed to be appropriate. This was confirmed based on conducting interviews^{/i/,iv/} during OSV.

As mentioned in the Joint PD & MR^{/02/}, Joint Meter Reading (JMRs)^{/16/} will serve as source of monthly values of net electricity supplied by the grouped project. The electricity generation data recorded in the JMRs shall form the basis of the emission reductions calculations. The assessment team shall review the same for verification of emission reduction results.

In order to measure the net export electricity supplied to the grid two bi-directional tri-vector electricity meters (main meter and check meter) of 0.2s accuracy class have been installed by the regional DISCOM at the project site. The main meter reading is taken jointly on a fixed day of every month for the preceding month at the delivery point (sub-station) and signed by the representatives of state utility and O&M personnel of the power plant. In the event of failure of main meter, the check meter will be used in monitoring the electricity data.

Moreover, each WTG is equipped with an integrated electronic meter, which is connected to a Central Monitoring Station located on-site. Real time monitoring of electricity generation data is monitored by an O&M team, which is provided by the O&M contractor (Siemens Gamesa). Based on the interviews conducted with O&M team during the site visit^{/ii/,iii/,iv/}, the assessment team concludes that the personnel responsible for the monitoring of electricity generation are well trained and are technically qualified. Furthermore, the validation team believes that the PP through the O&M agency is capable of implementing the monitoring plan in the context of the project activity.

The calibration of all electricity meters is under the jurisdiction of the state electricity board and shall be conducted as per the existing industry standards. The calibration frequency for the electricity meters installed under the current grouped project is 5 years³. Electrical Research and Development Association performed the initial calibration of both the main and check electricity meters on 13/03/2016. The assessment team reviewed the calibration certificates^{14/} to confirm the same.

Based on the review of the Joint PD & MR^{02/}, the assessment team confirms that detailed monitoring procedures, monitoring structure, management team, monitoring items and functions have been clearly demonstrated.

All electricity data will be archived electronically and further maintained for the entire crediting period plus two years.

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^{B01/} and the applied methodology^{B02/}.

CL06 has been raised in this regard and subsequently resolved. Refer to Appendix-2 for further details.

3.4 Non-Permanence Risk Analysis

Not Applicable.

4 SAFEGUARDS

4.1 No Net Harm

The project proponent has identified no potential negative environmental and socio-economic impacts. The grouped 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.

Moreover, No Net Harm analysis has not been carried out as is not mandatory due to the fact that the date of contract signing for validation is prior to 19/04/2017. The assessment team reviewed the joint validation and verification contract^{21/} to confirm the same.

This is as per the requirements laid out in Appendix-1 of the VCS Standard (version 3.6)^{B01b/} and deemed acceptable to the validation team.

4.2 Environmental Impact

The current grouped project activity is the installation and operation of wind power plants 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 projects types. The assessment team reviewed the official government notification in the form of '*Schedule I of the EIA notification S.O.1533 (E) dated 14th September 2006 and further affirmation provided by MOEF in the form of 'OM J-11013/41/2006 - IA II (I) dated 13th May 2011*' to confirm that wind power projects are not included in the list of project activities for which EIA is mandatory.

³ http://www.cea.nic.in/reports/regulation/meter_reg.pdf

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

4.3 Local Stakeholder Consultation

No Local Stakeholder Consultation has been carried out as is not mandatory due to the fact that the date of contract signing for validation is prior to 19/04/2017. The assessment team reviewed joint validation and verification contract/21/ to confirm the same.

This is as per the requirements laid out in Appendix-1 of the VCS Standard (version 3.6)^{/B01b/} and deemed acceptable to the validation team.

4.4 Public Comments

The current grouped project has not undergone Public Comment period as is not mandatory due to the fact that the date of contract signing for validation is prior to 19/04/2017. The assessment team reviewed the joint validation and verification contract^{t/21/} to confirm the same.

This is as per the requirements laid out in Appendix-1 of the VCS Standard (version 3.6)^{/B01b/} and deemed acceptable to the validation team.

5 VERIFICATION FINDINGS

5.1 Accuracy of GHG Emission Reduction and Removal Calculations

The data and parameters used to calculate the GHG emission reductions and removals have been listed below:

Parameters with Default Values (ex-ante parameters):

Parameter ^{/01a/}	Description ^{/01a/}	Value ^{/01a/}	Unit ^{/01a/}	Source ^{/01a/}
EF _{grid,OM,y}	Operating Margin CO ₂ emission factor in year y	0.9941	tCO ₂ /MWh	Calculated as per “Tool to calculate the emission factor for an electricity system (version 05.0.0) ^{/B04/} ”
EF _{grid,BM,y}	Build Margin CO ₂ emission factor in year y	0.9285	tCO ₂ /MWh	Calculated as per “Tool to calculate the emission factor for an electricity system (version 05.0.0) ^{/B04/} ”
EF _{grid,CM,y}	Combined Margin CO ₂ emission factor in year y	0.9777	tCO ₂ /MWh	Calculated as per “Tool to calculate the emission factor for an electricity system (version 05.0.0) ^{/B04/} ”

Parameter(s) monitored ex-post:

Monitoring Parameter Requirement ^{/B05-a/}	Assessment by the DOE	
Data / Parameter:	EG _{PJ,y}	
Measuring frequency/Time Interval:	Continuous monitoring, hourly measurement and at least monthly recording	
Reporting frequency:	Continuous	
Reporting value:	Year	Net electricity exported to the

	grid (MWh)	
	2016	120,430.16
	2017	43,282.2
	Total	163,712
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes	
Details of monitoring equipment:	The monitoring of this parameter has been done through recording of electricity (import and export) data by bi-directional electricity meters at the plant side sub-station. The electricity data has been recorded in monthly JMR reports ^{/16/} and Invoices issued to state utility ^{/17/} . The same are maintained by PP and the state utility. The generation data has been exported and collated in ER verification spreadsheet ^{/04b/} provided to the assessment team.	
Is accuracy of the monitoring equipment as stated in the PDD? If the PDD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	Yes, the accuracy of the electricity meters (monitoring equipment) is as stated in the Joint PD & MR ^{/02/} .	
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	Yes, the calibration frequency is 5 years, which is in conformance with national standards.	
Is the calibration interval in line with the monitoring plan of the PDD? If the PDD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	Yes, the calibration interval is in line with the monitoring plan provided in the Joint PD & MR ^{/02/} .	
Company performing the calibration (internal or external calibration):	External calibration. The calibration of all electricity meters is under the jurisdiction of the state electricity board and shall be conducted as per the existing industry standards.	
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Yes	
Is (are) calibration(s) valid for the whole reporting period?	Yes, calibration is valid for the whole reporting period.	
If applicable, has the reported data been cross-checked with other available data?	Yes, the assessment team cross-checked the electricity data provided in the ER verification spreadsheet ^{/04b/} with the monthly JMR reports ^{/16/} and Invoices issued to state utility ^{/17/} .	
How were the values in the monitoring report verified?	Through review of the ER verification spreadsheet ^{/04b/} provided by PP. In addition, the verification team performed further cross checks with monthly JMR reports ^{/16/} and Invoices issued to state utility ^{/17/} .	
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC procedures are in place.	
In case only partial data are available because activity levels or non-activity	NA	

parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	
---	--

The equations for calculation of emission reduction as provided in the Joint PD & MR^{/02/} and confirmed with the applied methodology ACM0002 (version 17.0)^{/B02/} have been checked and found to be correct. The values as provided in the Joint PD & MR^{/02/} have been compared with ER verification sheet^{/04b/} and raw values from monthly Joint Meter Reading reports^{/16/} and Invoices issued to state utility^{/17/} to ensure that no manual transposition errors between data sets have occurred. The assessment team confirms that all electricity generation values are matching between the above three documents. Moreover, the formulae applied in the ER verification spreadsheet^{/04b/} were also reviewed and found to be consistent with the applied methodologies.

The assessment team confirms that all parameters are used correctly in the calculations, all results are verifiable and transparent, all assumptions are described and based on verifiable evidence and calculations are done in accordance with the formulae laid out in the applied methodology ACM0002 (version 17.0)^{/B02/} and requirements of the monitoring plan.

The total number of emission reductions for the monitoring period is 160,061 tCO_{2e}.

5.2 Quality of Evidence to Determine GHG Emission Reductions and Removals

The quality of supporting documents that are provided by the PP as evidence is adequate. Raw values from Joint Meter Reading reports^{/16/} and Invoices issued to state utility^{/17/} is provided, which tallies with the data provided in the ER verification spreadsheet^{/04b/}.

Competent employees are recruited for the management and operation of the project. The quality of supporting evidences submitted to DOE for verification is adequate and found to be verifiable. Joint Meter Reading reports^{/16/} and Invoices issued to state utility^{/17/} and other supporting documents related to quality and maintenance were checked by the assessment team to confirm the authenticity of the documents and to check the correctness of the calculations. The assessment team for the records and future reference also obtains copies of these documents. The detailed information flow with the roles and responsibilities of the individuals and the monitoring system have been discussed and found to be appropriate.

Based on the above, the assessment team confirms the sufficiency and appropriateness of the quality of evidence provided by the PP to determine the GHG reductions and further deems them to be acceptable.

6 VALIDATION AND VERIFICATION CONCLUSION

CC IPL has performed a joint validation and verification of the VCS grouped project activity “Wind Grouped Project By Hero Future Energies Private Limited (EKIESL-VCS-AUG-16-03)” in India.

The joint validation and verification process was performed on the basis of all guidance and criteria as provided in VCS Standard (version 3.6)^{/B01b/}, VCS Program Guide (version 3.6)^{/B01a/}, VCS Validation and Verification Manual (version 3.2)^{/B01e/} and Registration & Issuance Process (version 3.7)^{/B01d/}.

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

Validation Conclusion:

The conclusions of validation process are:

The grouped project activity provides the information in Joint PD & MR^{/02/} as required by VCS Standard, version 3.6^{/B01b/} and Validation and Verification Manual, version 3.2^{/B01e/} and in CC IPL’s opinion meets the requirements of the applied baseline and monitoring methodology, ACM002 (version 17.0)^{/B02/} and is likely to achieve the estimated emission reductions. The validation has been performed using a risk-based approach, as described above. The expected emission reductions from the project activity during the course of its crediting period (ten years) will be 1,712,930 tCO_{2e}.

CCIPL concludes the validation with a positive opinion and confirms that the VCS Project Activity “Wind Grouped Project By Hero Future Energies Private Limited (EKIESL-VCS-AUG-16-03)” in India, as described in the Joint PD & MR^{/02/} meets all applicable VCS requirements, including those specified in the CDM Project Standard^{/B01h/}, relevant methodologies, tools and guidelines.

The selected baseline and monitoring methodologies (ACM002 (version 17.0)^{/B02/}) are applicable to the project and correctly applied. CCIPL therefore requests the registration of the project as a VCS project activity.

Verification Conclusion:

The conclusions of verification process are:

- All components of the project are implemented and installed as planned and described in the Joint PD & MR^{/02/} and the project activity conforms with the verification and validation criteria for project and their GHG emission reductions or removals set out in the VCS Standard (version 3.6)^{/B01b/}.
- The monitoring plan is in accordance with the applied approved methodology, i.e. ACM002 (version 17.0)^{/B02/} and monitoring plan as sought out in the Joint PD & MR^{/02/}.
- The monitoring system is in place and functional. The project has generated verifiable GHG emission reductions.

As the result of the verification of VCS VERs, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. CCIPL herewith confirms that the project has achieved emission reductions in the below mentioned reporting period. The project complies with the verification criteria for projects and their GHG emissions reductions or removals set out in VCS Standard (version 3.6)^{/B01b/}.

Verification period: From 29th March 2016 to 01st April 2017 (both days included)

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)
2016	117,744	0	0	117,744
2017	42,317	0	0	42,317
Total	160,061	0	0	160,061

CCIPL confirms a positive verification opinion confirming that the grouped project complies with the applicable VCS requirements, thus recommending the project for issuance.

APPENDIX 1.1: REFERENCE DOCUMENTS

SI. No.	List of pertinent documents
/01/	a) Initial Joint PD & MR, version 01, dated 26/10/2016 b) Interim Joint PD & MR, version 02, dated 06/05/2017
/02/	Final Joint PD & MR, version 03, dated 22/05/2017
/03/	Emission reduction spreadsheets corresponding to /01a/: a) ER estimation and EF calculation spreadsheet (validation) b) Actual ER calculation spreadsheet (verification) Emission reduction spreadsheets corresponding to /01b/: c) ER estimation and EF calculation spreadsheet (validation) d) Actual ER calculation spreadsheet (verification)
/04/	Emission reduction spreadsheets corresponding to /02/ a) ER estimation and EF calculation spreadsheet (validation) b) Actual ER calculation spreadsheet (verification)
/05/	Prior consideration evidence of VCUs for the project activity- Board Resolutions of PP
/06/	Statutory clearances and approvals for the initial project activity instance: a) Order for Consent to operate (dated 08/03/2016) issued by M.P. Pollution Control Board b) Approval for power evacuation (dated 15/02/2014) issued by Madhya Pradesh Power Transmission Co. Ltd.
/07/	Proposal/Offer letter from the equipment supplier for the initial project activity instance
/08/	Purchase order/Contract for the project activity including Supply, Erection and Commissioning and Land facilitation agreements signed between PP and EPC contractor
/09/	Commissioning certificate issued by the respective state electricity board (proof of start date of project)
/10/	Evidence for the Technical specifications of the project
/11/	Copy of Power Purchase Agreement
/12/	IRR spreadsheet along with evidences for all the input parameters
/13/	Spreadsheet containing database of wind power projects in India
/14/	Electricity meter calibration and testing certificates for main and check meters
/15/	'Tariff Order for procurement of power from Wind Electric Generators' issued by M.P. Electricity Regulatory Commission Bhopal, March 2013
/16/	Monthly Joint Meter Reading (JMR) statements for the entire monitoring period
/17/	Invoices raised by the PPs to the respective state electricity boards for the monitoring period
/18/	Declaration(s) from Project proponent on the following (for section 1.12 of the Joint PD & MR): a) Project not registered or under process of registration in any other Emissions Trading Programs and Other Binding Limits. b) Project not registered or under process of getting and Other Forms of Environmental Credit c) The project has not been registered and is not seeking registration under any other GHG program. d) Projects not Rejected by Other GHG Programs
/19/	Declaration from PP that no Government incentive is being taken for the project (like GBI, REC etc..)
/20/	ODA declaration
/21/	Joint validation and verification contract signed between CCCIPL and Hero Future Energies Private Limited

APPENDIX 1.1: BACKGROUND DOCUMENTS

Sl. No.	List of pertinent documents
/B01/	VCS Requirements: a) Verified Carbon Standard Program Guide, v3.6; b) Verified Carbon Standard, v3.6; c) VCS Program Definitions, Ver. 3.6 d) VCS Registration and Issuance Process, v3.7 e) VCS Validation and Verification Manual, v3.2 f) VCS Joint Project Description & Monitoring Report Template, v3.1 g) VCS Joint Validation & Verification Report Template, v3.1 CDM Requirements: h) CDM Project Standard, v9.0 i) CDM Validation and Verification Standard, v9.0
/B02/	Approved CDM monitoring methodology: ACM0002: Grid-connected electricity generation from renewable sources - Version 17.0
/B03/	CDM Validation and Verification Standard, version 09.0 CDM Project Standard, version 09.0
/B04/	Tool to calculate the emission factor for an electricity system, version 05.0
/B05/	Baseline CO2 Emission Database, Version 11.0 published by Central Electricity Authority (CEA), Government of India.
/B06/	Methodological Tool: Tool for the demonstration and assessment of additionality, version 07.0
/B07/	Methodological Tool: Investment analysis, version 07.0
/B08/	Methodological Tool: Common practice, version 03.1

APPENDIX 2: LIST OF FINDINGS

CARs:

Finding	CAR 01		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	<p>The following findings have been raised due to non-conformance with the form filling requirements of VCS joint PD and MR template:</p> <ol style="list-style-type: none"> a. In section 1.1, the PP has not provided the following information: <ul style="list-style-type: none"> • The total GHG emission reductions or removals generated in this monitoring period. b. In section 1.9, PP has not provided a set of geographical coordinates of all the project locations, as required. c. In section 1.10, PP has not provided a response to the following requirement: <p style="margin-left: 20px;"><i>“Demonstrate that the project has not been implemented to generate GHG emissions for the purpose of their subsequent reduction, removal or destruction.”</i></p> d. In section 2.5, PP has not provided a response to the following requirement: <p style="margin-left: 20px;"><i>“Provide sufficient information (including all relevant data and parameters, with sources) so that a reader can reproduce the additionality analysis and obtain the same results.”</i></p> e. In section 6 (LSC), PP has not provided a response to the following requirement: <ul style="list-style-type: none"> • <i>“The procedures or methods used for engaging local stakeholders (eg, dates of announcements or meetings, periods during which input was sought).</i> • <i>The procedures or methods used for documenting the outcomes of the</i> 		

	<p><i>local stakeholder consultation.</i></p> <ul style="list-style-type: none"> • <i>The mechanism for on-going communication with local stakeholders.</i> • <i>How due account of all and any input received during the consultation has been taken. Include details on any updates to the project design or justify why updates are not appropriate“</i> <p>f. In some cases, the sectional arrangement is not as per the requirements of the form filling requirements of VCS joint PD and MR template. PP required to rectify the same.</p>
<p>Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>a. In section 1.1, the GHG emission reductions obtained for the current monitoring period has now been mentioned.</p> <p>b. The set of Geographical coordinates has now been provided.</p> <p>c. The response to section 1.10 has been provided.</p> <p>d. The information and response regarding the additionality analysis has now been provided in the section 2.5 of the PD.</p> <p>e. As per VCS Guidelines, this section is not mandatory being project is under validation and DOE Contract is prior to 19/04/2017. Hence, the same has been responded in the section 6 of the joint PD and MR.</p> <p>f. The sectional arrangement has now been made consistent as per the latest template of VCS joint PD and MR template.</p>
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>a) The validation team reviewed the revised joint PD and MR and confirms that the ‘total GHG emission reductions or removals generated in this monitoring period’ have now been provided in section 1.1. The validation team further cross-checked the value with the ER spreadsheet and confirms it to be accurate. This is deemed appropriate to the validation team. This finding is closed.</p> <p>b) The validation team reviewed the revised joint PD and MR and confirms that the set of geographical coordinates of all the project locations have now been provided in section 1.9. The same were confirmed to be accurate based on physical</p>

	<p>inspections during OSV. This is deemed appropriate to the validation team. This finding is closed.</p> <p>c) The validation team reviewed the revised joint PD and MR and confirms that an appropriate response to the above form filling requirement has been provided. the project has not been implemented to generate GHG emissions for the purpose of their subsequent reduction, removal or destruction. This is confirmed based on conducting interviews with representatives of PP during OSV. This is deemed appropriate to the validation team. This finding is closed.</p> <p>d) The validation team reviewed the revised joint PD and MR and confirms that an appropriate response to the above form filling requirement has been provided. PP has provided sufficient information (including all relevant data and parameters, with sources) to allow the reader to reproduce the additionality analysis and obtain the same results. This is deemed appropriate to the validation team. This finding is closed.</p> <p>e) The validation team reviewed the validation contract signed between DOE and PP and confirms that it is dated 26/12/2016, which is before the VCS deadline of 19/04/2017. Thus, carrying out LSC is not mandatory for the current grouped project as per VCS Standard (version 3.6). Considering this, PP has not carried out an LSC and the same has been mentioned in the relevant section of the revised joint PD and MR. This is deemed to be appropriate to the validation team. This finding is closed.</p> <p>f) The validation team reviewed the revised joint PD and MR and confirms that the sectional arrangement has now been made consistent as per the latest template of VCS joint PD and MR template. This is deemed to be appropriate to the validation team. This finding is closed.</p> <p>This CAR is closed.</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification</p> <p><input type="checkbox"/> Outstanding finding (not closed)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>

Finding	CAR 02		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR

<p>Description of finding (DOE)</p>	<p>The following findings have been raised in the eligibility criteria table of section 1.13:</p> <p>a) Eligibility Criteria for local stakeholder consultations and environmental impact assessment (EIA) have not been included in the table.</p> <p>b) In row no.2 PP states that :</p> <p><i>“The proposed project activity instances will be located at a site where there was no renewable energy power plant operating prior to the implementation of the proposed project activity instances (Greenfield plant).”</i></p> <p>In regards to the above, PP is requested to appropriately clarify how it will demonstrate, using appropriate documentary evidence(s), compliance with this condition of the eligibility criteria.</p> <p>c) In row no. 3 PP states that :</p> <p><i>“The project activity instances should install renewable energy technology that have Approval / certification from the relevant designated authority.”</i></p> <p>PP is to provide further clarification on the nature of the above documentation (given in bold) and provide the same to DOE for review.</p> <p>d) In row no.5 PP states that :</p> <p><i>“Public or regulatory sources to demonstrate that project is not mandated by laws and regulations in host country.”</i></p> <p>PP is to provide further clarification on the nature of the above documentation (given in bold) and provide the same to DOE for review.</p> <p>e) In row no. 9, the start date provided is not consistent with sections 1.5 and 1.6 of the joint VCS PD and MR.</p>
<p>Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further</i></p>	<p>a) As per VCS Guidelines, this section is not mandatory being project is under</p>

<p><i>information for clarification as per finding)</i></p>	<p>validation and DOE Contract is prior to 19/04/2017.</p> <ul style="list-style-type: none"> b) The Purchase order is the documentary evidence to confirm the Green field nature of project activity. c) Statutory document i.e approval from state nodal agency has been provided. d) In India, there is no any mandatory laws and regulations to install the project activity. e) The start date (commissioning date of first WTG) mentioned is now made consistent in the joint PD and MR. <p>The eligibility criteria has been revised in line with VCS standard Version 6 and initial project activity instance eligibility is justified in revised VCS PD.</p>
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<ul style="list-style-type: none"> a) The validation team reviewed the joint validation and verification contract signed between DOE and PP and confirms that it is dated 26/12/2016, which is before the VCS deadline of 19/04/2017. Thus, carrying out of LSC and EIA is not mandatory for the initial project activity instance under the grouped project as per VCS Standard (version 3.6). Considering this, PP has not carried out an LSC and EIA and discussions on the same have been included in the eligibility criteria table. This is deemed to be appropriate to the validation team. This finding is closed. b) The PP has provided the Purchase Orders which clearly indicates that the all the equipment used in the project activity is new. Moreover, based on conducting physical inspections and interviews with representatives of PP during OSV the validation team was able to confirm that no renewable energy power plant was operated prior to the implementation of the project activity. Thus, the project activity has been demonstrated to be a greenfield project. This is deemed to be appropriate to the validation team. This finding is closed c) PP has provided two documents namely: 'Order for Consent to operate' (dated 08/03/2016) issued by M.P. Pollution Control Board and 'Approval for power evacuation' (dated 15/02/2014) issued by Madhya Pradesh Power Transmission Co. Ltd. to act has proofs of approval/certification from a relevant designated authority(ies) of the grouped project activity. The two documents were reviewed by the validation team and were deemed to be acceptable. Moreover, the eligibility

	<p>criteria table has now been appropriately revised. This finding is closed.</p> <p>d) Based on sectoral expertise and interviews with representatives of PP during OSV, the validation team confirms that that project is not mandated by laws and regulations in host country of India. Moreover, the eligibility criteria table has now been appropriately revised. This finding is closed.</p> <p>e) The validation team reviewed the revised joint PD and MR and confirms that the start date provided in the eligibility criteria table is now consistent with sections 1.5 and 1.6 of the joint VCS PD and MR. The start date of the grouped project is 29/03/2016, which is the date of commissioning and power generation of the project activity (and is documented in the commissioning certificate). This is deemed to be appropriate to the validation team. This finding is closed.</p> <p>This CAR is closed.</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification</p> <p><input type="checkbox"/> Outstanding finding (not closed)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>

Finding	CAR 03		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	<p>In section 2.2, compliance with the applicability criteria listed in row no.2 has not been appropriately demonstrated as PP has not specified the type of renewable energy to be installed under grouped project. Moreover, PP is required to list the type of renewable energy adopted by the current grouped project activity wherever required in the applicability criteria table. This is deemed to be appropriate to the validation team. This CAR is closed.</p>		
<p>Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>The type of renewable energy project under the proposed grouped project activity in only wind energy and the same has now been mentioned in section 2.2.</p>		
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>The validation team reviewed the revised joint PD and MR and confirms that the compliance with the applicability criteria listed in row no.2 has now been appropriately demonstrated as PP has specified the type of renewable energy to be installed under grouped project as wind power plant. Moreover, PP has appropriately listed the type of renewable energy adopted by the current grouped project activity in the applicability criteria</p>		

	table, wherever required. This is deemed to be appropriate to the validation team. This CAR is closed.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed

Finding	CAR 04		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	In section 2.4, the description of the baseline scenario is incomplete for project activity instances following the applied methodology ACM0002 (version 17), as per the requirements of the applied methodology.		
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The baseline scenario as per para 23 of ACM0002 version 17.0 has been described as per the requirements.		
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The validation team reviewed the revised joint PD and MR and confirms that the description of the baseline scenario for project activity instances following the applied methodology ACM0002 (version 17) is complete as per the requirements of the applied methodology. This is deemed to be appropriate to the validation team. This CAR is closed.		
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed		

Finding	CAR 05		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	The following findings have been raised in section 2.5 of the joint VCS PD and MR : a) The default value of the benchmark (Return on Equity for Group-1 projects) is not consistent with applicable (at the time of decision making) version of the Investment Analysis tool.		

	<p>b) In this section PP states that :</p> <p><i>“It can be observed from above table that in various scenarios wherein there are changes in tariff, O&M cost, electricity generation and project’s capital cost, the equity IRR does not cross the benchmark.”</i></p> <p>However as referred above, no table for sensitivity analysis has been provided in this section.</p> <p>c) In this section PP stats that :</p> <p><i>“Since CDM guideline is followed for common practise analysis, the start date is considered as per CDM guidelines for common practise analysis. Thus start date of November 2014 is considered for identify similar projects.”</i></p> <p>In regards to the above, PP is to appropriately clarify on the significance of the above mentioned start date and how this complies with the requirements of para 14(f) of the common practice tool. Moreover, the date format chosen is not as per standard VCS requirements.</p>
<p>Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>a) The default value of benchmark is considered based on decision made date of project activity. Since as the time of decision made i.e on 22/06/2015, EB 62 Annex 5 default value was applicable and same was considered for benchmark determination. The benchmark calculation was followed as per guidance of the latest version of the Investment Analysis tool except default value of cost of equity as mentioned above.</p> <p>b) Table for sensitivity analysis has now been provided in section 2.5.</p> <p>c) The start date here refers to the actual date of commercial operation of the machine. The projects commissioned before the start date of the project activity have been chosen for the common practice analysis. Also, the date format has now been revised as per standard VCS requirements.</p>
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the</i></p>	<p>a) The validation team reviewed the revised joint PD and MR and confirms that default value of the benchmark (Return on Equity for Group-1 projects) is now</p>

<p><i>finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>consistent with the applicable (at the time of decision making) version of the Investment Analysis tool (EB 62 Annex 05). Based on review of UNFCC website and Board resolution document, the validation team was able to confirm that the aforementioned tool (EB 62 Annex 05) was applicable at the time the board decision (dated 22/06/2015) was made to go ahead with project activity. Thus, the default value of the benchmark (Return on Equity for Group-1 projects) mentioned in the tool was also applicable and has been correctly applied for carrying out investment analysis. This is deemed to be appropriate to the validation team. This finding is closed.</p> <p>b) The validation team reviewed the revised joint PD and MR and confirms that an appropriate table for sensitivity analysis has been provided in this section. The same was cross-checked with the ER spreadsheet and further confirmed to be accurate. This is deemed to be appropriate to the validation team. This finding is closed.</p> <p>c) The validation team reviewed the revised joint PD and MR and confirms that the correct start date has now been listed in this section of joint PD and MR. Moreover, the date format chosen is now as per standard VCS requirements. This is deemed to be appropriate to the validation team. This finding is closed.</p> <p>This CAR is closed.</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed</p>

Finding	CAR 06		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	In section 3.1, the applicable steps (as allowed by the EF tool) used to calculate the 'Operating margin emission factor' have not been discussed in Step 4.		
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The calculations for OM have been provided in the section 3.1. The CEA database version 11 has calculated EF in line with version 5 of EF tool. The Option A has been selected for OM calculation in line with EF tool.		
DOE Assessment #1	The validation team reviewed the revised joint PD and MR and confirms that applicable		

<p><i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>steps (as allowed by the EF tool) have now been used to calculate the 'Operating margin emission factor' in Step 4. This is deemed to be appropriate to the validation team. This CAR is closed.</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p> <input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed </p>

Finding	CAR 07		
<p>Classification</p>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<p>Description of finding (DOE)</p>	<p>In the worksheet titled 'ER calculation' of the EF and ER estimation spreadsheet, the monthly electricity generation values are not appropriate as they do not correspond to the monthly electricity generation as per the meter(s) installed at the State Electricity Board substation. PP is to rectify the generation values accordingly.</p>		
<p>Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>The generation values have now been represented correctly and the ER calculation has been done appropriately.</p>		
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>The validation team reviewed the PPA, monthly electricity sale invoices and further based on physical inspections and conducting interviews with representatives of PP during OSV confirms that the monthly electricity generation values were extracted from main (or check) meters installed at the plant side substation. Moreover, the monthly invoices of sale of electricity to the grid have been raised based on those electricity generation values. Thus, based on the above situation, the validation team concludes that the electricity generation values listed in the worksheet titled 'ER calculation' of the EF and ER estimation spreadsheet are correct. This is deemed to be appropriate to the validation team. This CAR is closed.</p>		
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p> <input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed </p>		

Finding	CAR 08		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	<p>The following findings have been raised in regards to the IRR spreadsheet and the financial analysis contained therein:</p> <ul style="list-style-type: none"> a) Valid documentary proof(s) of the all the project related costs listed in worksheet titled 'Project cost' have not been provided to DOE for review. b) The date of decision making to go ahead with the VCS project has not been provided in either joint VCS PD and MR and the IRR sheet. Moreover, the corresponding supporting evidence of the same has not been provided to DOE for review. c) In worksheet titled 'Assumption' the value of 'Interest Rate' (equal to 12%) cannot be traced in the source provided and thus its appropriateness cannot be validated. d) In worksheet titled 'Benchmark' the default value of the benchmark (Return on Equity for Group-1 projects) considered is not consistent with the applicable version of the Investment Analysis tool. 		
<p>Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<ul style="list-style-type: none"> a) Offer letter has now been provided as a documentary proof for the project cost. b) The decision date has been mentioned in the VCS PD and MR and in the IRR sheet. Also the Board resolution is now provided as the supporting evidence. c) The source for interest rate (12.75%) is now provided correctly for the reference. d) The default value of benchmark is considered based on decision made date of project activity. Since as the time of decision made i.e on 22/06/2015, EB 62 Annex 5 default value was applicable and same was considered for benchmark determination. The benchmark calculation was followed as per guidance of the latest version of the Investment Analysis tool except default value of cost of equity as mentioned above. 		
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the</i></p>	<ul style="list-style-type: none"> a) The validation team reviewed the supporting documents provided by PP and confirms that all valid documentary proof(s) (in the form of offer letter) of the all the 		

<p><i>finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>project related costs listed in worksheet titled 'Project cost' has now been provided. All the input values listed in the IRR spreadsheet were cross-checked with the offer letter and were found to be consistent. This is deemed to be appropriate to the validation team. This finding is closed.</p> <p>b) The validation team reviewed the revised joint PD and MR and the IRR spreadsheet and confirms that the date of decision making to go ahead with the VCS project has now been provided. Moreover, the corresponding supporting evidence (in the form of Board Resolution) of the same has not been provided to DOE for review. The validation team cross-check the information contained in the joint PD and MR and the IRR spreadsheet with the Board Resolution document and confirms the same to be accurate. This is deemed to be appropriate to the validation team. This finding is closed.</p> <p>c) The validation team reviewed the revised IRR spreadsheet and confirms that in the worksheet titled 'Assumption' the value of 'Interest Rate' (equal to 12%) has been changed to 12.75% which is now consistent the value listed in the source provided. This is deemed to be appropriate to the validation team. This finding is closed.</p> <p>d) The validation team reviewed the revised IRR spreadsheet and confirms that in worksheet titled 'Benchmark' the default value of the benchmark (Return on Equity for Group-1 projects) considered is now consistent with the applicable version of the Investment Analysis tool. This is deemed to be appropriate to the validation team. This finding is closed</p> <p>This CAR is closed.</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification</p> <p><input type="checkbox"/> Outstanding finding (not closed)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>

CLs:

Finding	CL 01		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	In section 1.1, PP is to clarify why it has listed SPVs of Devgarh and Manvi considering that currently only the SPV for Ratlam is included in the grouped project.		

<p>Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>PP is going to proceed the VCS registration and issuance for grouped project activity with the 100 MW wind project activity instance only. The references of the SPVs of Devgarh and Manvi have now been removed.</p>
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>The validation team reviewed the revised joint PD and MR and confirms that mention of SPVs of Devgarh and Manvi has now been removed from this section. This is deemed to be appropriate to the validation team. This CL is closed</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed</p>

Finding	CL 02		
<p>Classification</p>	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
<p>Description of finding (DOE)</p>	<p>The following inconsistencies are observed section 1.1 of the joint VCS PD and MR:</p> <ul style="list-style-type: none"> a) The date of commissioning of Ratlam SPV does not match with the source document (commissioning certificate) provided. b) The value of 'estimated annual emission reductions' is not consistent with the value calculated in the EF and ER sheet. 		
<p>Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<ul style="list-style-type: none"> a) The date of commissioning of Ratlam SPV has now been made consistent as per the commissioning certificate. b) The value of the estimated annual emissions reductions has now been made consistent with the value calculated in the EF and ER sheet. 		
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<ul style="list-style-type: none"> a) The validation team reviewed the revised joint PD and MR and confirms that the date of commissioning of Ratlam SPV has now been rectified and matches with the source document (commissioning certificate). This is deemed to be appropriate to the validation team. This finding is closed. b) The validation team reviewed the revised joint PD and MR and confirms that the value of 'estimated annual emission reductions' is now consistent with the value 		

	<p>calculated in the EF and ER sheet. This is deemed to be appropriate to the validation team. This finding is closed.</p> <p>This CL is closed.</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification</p> <p><input type="checkbox"/> Outstanding finding (not closed)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>

Finding	CL 03		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	PP is requested to demonstrate start date of the project activity in section 1.5 of the VCS Joint PD and MR in line with the VCS requirements and also provide appropriate supporting documents for the same.		
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The date of commissioning of the project is considered as the start date of the project activity. The commissioning certificate has been provided as supporting document.		
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The validation team reviewed the revised joint PD and MR and confirms that the start date of the project activity has been rectified and is now consistent with the supporting document (in the form of commissioning certificate). This is deemed to be appropriate to the validation team. This CL is closed.		
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification</p> <p><input type="checkbox"/> Outstanding finding (not closed)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>		

Finding	CL 04		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	PP is requested to clarify the inconsistency in the values of “estimated annual emission reductions”, “estimated total emission reductions’ and ‘actual emission reductions’ as listed in various sections of the joint VCS and MR and the EF and ER sheet.		


Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The inconsistent values have now been made consistent in the joint PD and MR as per the ER sheet.
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The validation team reviewed the revised joint PD and MR and confirms that the values of “estimated annual emission reductions”, “estimated total emission reductions’ and ‘actual emission reductions’ as listed in various sections are now consistent with the corresponding values calculated in the EF and ER spreadsheet. This is deemed to be appropriate to the validation team. This CL is closed.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed

Finding	CL 05		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding (DOE)	In section 1.12.2, PP has not cited the appropriate evidences (as allowed by section 3.11.2 of VCS standard v 3.6) for the demonstration of the fact that the ‘grouped project activity under consideration is not participating in any other Emission trading programme and other binding limits’. The same need to be provided to DOE for review.		
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	Declaration from PP is now provided demonstrating that it is not participating in any other Emission trading programme.		
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The validation team reviewed the declaration document provided by the PP and confirms that a confirmation has been provided that the grouped project activity is not participating in any other Emission trading programme and other binding limits. This is deemed to be appropriate to the validation team. This CL is closed.		
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed		

Finding	CL 06		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR

Finding	CL 06
Description of finding (DOE)	PP is requested to provide the energy meter details in the Joint PD & MR used during the monitoring period.
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The details of the energy meters are now provided in the joint PD and MR.
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The validation team reviewed the revised joint PD and MR and confirms that technical details of the electricity meters installed at plant side have now been provided. The same were cross-checked with supporting documents (commissioning certificate and calibration certificates) and confirmed to be accurate. This is deemed to be appropriate to the validation team. This CL is closed.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed

APPENDIX 3: CERTIFICATES OF COMPETENCE



Carbon Check (India) Private Ltd.

Sanjay Agarwalla

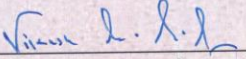
has been qualified as per CCIPL's internal qualification procedures, in accordance with requirements of Accreditation Standard (version 06.0):

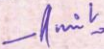
For following functions:

Validator Team Leader Technical reviewer
 Verifier Technical Expert Local Expert¹

In the following Technical Areas:

TA 1.1 TA 3.1 TA 5.2 TA 9.2 TA 13.2
 TA 1.2 TA 4.1 TA 8.1 TA 10.1 TA 14.1
 TA 2.1 TA 5.1 TA 9.1 TA 13.1


 Mr. Vikash Kumar Singh
 Compliance Officer


 Mr. Amit Anand
 CEO

Date of Approval
23/12/2016

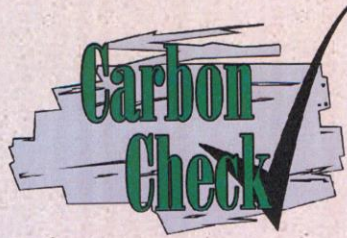
Valid Till
22/12/2017

Revision History of the Document

26/12/2014	Initial Adoption
24/12/2015	Annual Revision
20/01/2016	Interim Revision for office address change
23/12/2016	Annual Revision

¹India

CARBON CHECK (INDIA) PRIVATE LIMITED
 Registered in India: U74930DL2012PTC232495
 Regd. Off: 2071/38, 2nd Floor, Naiwala, Karol Bagh, New Delhi - 110005
 Corporate off: G 49 & 50, 3rd Floor, Sector - 3, NOIDA (Uttar Pradesh) - 201301
 Tel: +91 120 4373114 / +91 120 2520027 | URL: www.carboncheck.co.in
 e-mail: info@carboncheck.co.in



Carbon Check (India) Private Ltd.

Kranav Sharma

has been qualified as per CCIPL's internal qualification procedures, in accordance with requirements of Accreditation Standard (version 06.0):

For following functions:

- Validator Team Leader Technical reviewer
 Verifier Technical Expert Local Expert¹

In the following Technical Areas:

- TA 1.1 TA 3.1 TA 5.2 TA 9.2 TA 13.2
 TA 1.2 TA 4.1 TA 8.1 TA 10.1 TA 14.1
 TA 2.1 TA 5.1 TA 9.1 TA 13.1

Vikash K. Singh

Mr. Vikash Kumar Singh
Compliance Officer

Amit

Mr. Amit Anand
CEO

Date of Approval
23/12/2016

Valid Till
22/12/2017

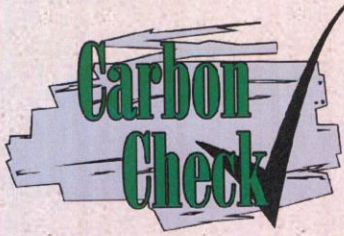
Revision History of the Document

- | | |
|------------|--|
| 26/12/2014 | Initial Adoption |
| 24/12/2015 | Annual Revision |
| 20/01/2016 | Interim Revision for office address change |
| 23/12/2016 | Annual Revision |

¹India

CARBON CHECK (INDIA) PRIVATE LIMITED

Registered in India: U74930DL2012PTC232495
 Regd. Off: 2071/38, 2nd Floor, Naiwala, Karol Bagh, New Delhi - 110005
 Corporate off: G 49 & 50, 3rd Floor, Sector - 3, NOIDA (Uttar Pradesh) - 201301
 Tel: +91 120 4373114 / +91 120 2520027 | URL: www.carboncheck.co.in
 e-mail: info@carboncheck.co.in



Carbon Check (India) Private Ltd.

Amit Anand

has been qualified as per CCIPL's internal qualification procedures, in accordance with requirements of Accreditation Standard (version 06.0):

For following functions:

- | | | | | | |
|-----------|-------------------------------------|------------------|-------------------------------------|---------------------------|-------------------------------------|
| Validator | <input checked="" type="checkbox"/> | Team Leader | <input checked="" type="checkbox"/> | Technical reviewer | <input checked="" type="checkbox"/> |
| Verifier | <input checked="" type="checkbox"/> | Technical Expert | <input checked="" type="checkbox"/> | Local Expert ¹ | <input checked="" type="checkbox"/> |

In the following Technical Areas:

- | | | | | | | | | | |
|--------|-------------------------------------|--------|-------------------------------------|--------|-------------------------------------|---------|-------------------------------------|---------|-------------------------------------|
| TA 1.1 | <input type="checkbox"/> | TA 3.1 | <input checked="" type="checkbox"/> | TA 5.2 | <input type="checkbox"/> | TA 9.2 | <input type="checkbox"/> | TA 13.2 | <input type="checkbox"/> |
| TA 1.2 | <input checked="" type="checkbox"/> | TA 4.1 | <input type="checkbox"/> | TA 8.1 | <input checked="" type="checkbox"/> | TA 10.1 | <input type="checkbox"/> | TA 14.1 | <input checked="" type="checkbox"/> |
| TA 2.1 | <input type="checkbox"/> | TA 5.1 | <input type="checkbox"/> | TA 9.1 | <input type="checkbox"/> | TA 13.1 | <input checked="" type="checkbox"/> | | |

Mr. Vikash Kumar Singh
Compliance Officer

Date of Approval
23/12/2016

Valid Till
22/12/2017

Revision History of the Document

26/12/2014	Initial Adoption
24/12/2015	Annual Revision
20/01/2016	Interim Revision for office address change
23/12/2016	Annual Revision

¹India, South Africa

CARBON CHECK (INDIA) PRIVATE LIMITED
Registered in India: U74930DL2012PTC232495
Regd. Off: 2071/38, 2nd Floor, Naiwala, Karol Bagh, New Delhi - 110005
Corporate off: G 49 & 50, 3rd Floor, Sector - 3, NOIDA (Uttar Pradesh) - 201301
Tel: +91 120 4373114 / +91 120 2520027 | URL: www.carboncheck.co.in
e-mail: info@carboncheck.co.in

APPENDIX 4: ABBREVIATIONS

BAU	Business As Usual
CA	Corrective Action / Clarification Action
CER	Certified Emission Reduction
CAR	Corrective Action Request
CC IPL	Carbon Check (India) Private Ltd.
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
CO₂	Carbon Dioxide
CO_{2e}	Carbon Dioxide Equivalent
DOE	Designated Operational Entities
DVR	Draft Verification Report
EB	CDM Executive Board
EF	Emission Factor
FA	Final Approval
FAR	Forward Action Request
FVR	Final Verification Report
GHG	Greenhouse gas(es)
GWh	Giga Watt Hour
IPCC	Intergovernmental Panel on Climate Change
MOEF	Ministry of Environment and Forests
MWh	Mega Watt Hour
OSV	On Site Visit
QC/QA	Quality control/ Quality assurance
TA	Technical Area
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VVB	Validation / Verification Body