




**Validation report form for
CDM project activities
(Version 04.0)**

BASIC INFORMATION

Title of the project activity	Wind Power Project in Madhya Pradesh by EnvironmentFirst-214
Scale of the project activity	<input type="checkbox"/> Large-scale <input checked="" type="checkbox"/> Small-scale
Version number of the validation report	03
Completion date of the validation report	25/11/2019
Version number of the PDD to which this report applies	04
Date when PDD was uploaded for global stakeholder consultation	12/04/2016
Project participants	M/s EnvironmentFirst Energy Services (P) Limited
Host Party	India
Applied methodologies and standardized baselines	Methodology: AMS.ID Version 18 Type : I – Renewable Energy Project (Small Scale) Category: D Grid Connected Renewable
Mandatory sectoral scopes	Sectoral Scope 1 : Energy industries (renewable - / non-renewable sources)
Conditional sectoral scopes, if applicable	NA
Estimated amount of annual average GHG emission reductions or GHG removals by sinks	5,047 tCO ₂ e per annum
Name and UNFCCC reference number of the DOE	LGAI Technological Center, S.A. (Applus+ Certification) UNFCCC Ref. No: E-0032
Name, position and signature of the approver of the validation report	Mr. Juan Sendín Caballero <i>(Applus+ Certification BU Managing Director)</i> Signature of the approver: 

SECTION A. Executive summary

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

The project activity involves the installation of 2 WTGs, each with a capacity of 1.5 MW giving a total installed capacity for the project activity of 3 MW. The WTGs are already commissioned in 2014. This is checked and confirmed from the commissioning certificate of the project activity.

Scope of Validation:

The scope of the validation is defined as an independent and objective review of the project design document, the project baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. Applus+ Certification have employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

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

Validation process:

Applus+ Certification assessed and determined whether the proposed implementation and operation of the project activity, and the steps taken to report emission reductions comply with the requirements specified in the CDM M&P, the CDM Validation and Verification Standard for project activity, version 02.0, and relevant decisions of the COP/MOP and the CDM EB and applying standard auditing techniques. The validation process consists of the following three phases

- Document review: Desk review of the CDM PDD, and other relevant documents
- Follow-up interviews with project stakeholders
- The resolution of outstanding issues and the issuance of the final validation report.

Conclusion:

LGAI Technological Center, S.A. (Applus+ Certification) has been contracted by M/s EnvironmentFirst Energy Services (P) Limited to perform a validation of the proposed CDM project activity entitled "Wind Power Project in Madhya Pradesh by EnvironmentFirst-214".

The Validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism Validation and Verification Standard for project activity (Version 02.0) and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

In our opinion, the project meets all relevant UNFCCC, CDM criteria and all relevant host country criteria. The project correctly applies methodology AMS I D version 18 "Grid Connected renewable electricity generation". It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The total emission reductions from the project are estimated to be 35,329 tCO₂e over a 7 year crediting period, averaging 5,047 tCO₂e annually. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given the underlying assumptions do not change.

SECTION B. Validation team, technical reviewer and approver**B.1. Validation team member**

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Validation findings
1.	Lead Auditor/ Technical Expert	OR	Ahirwar	Vivek Kumar	GCEES	Y	Y	Y	Y
2.	Validator	OR	Thakur	Ajay Singh	GCEES	Y	Y	Y	Y
3.	Financial Expert	OR	Ahirwar	Vivek Kumar	GCEES	Y	Y	Y	Y

B.2. Technical reviewer and approver of the validation report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	EI	Shen	Simon	Applus+ Certification
2.	Approver	IR	Sendin	Juan	Applus+ Certification

SECTION C. Means of validation

C.1. Desk/document review

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The validation is performed primarily as a document review of the publicly available project design document version 01 dated 11/04/2016 , version 02 dated 01/06/2018 and subsequent final version 04 dated 03/11/2019 in particular the applicability of the methodology, the baseline determination, the additionality of the project activity, the starting date of the project, the monitoring plan, the emission reduction calculations provided in the form of a spread sheet. The validation team has checked the statements mentioned in the PDD through review of documents, site visit, interviews/ contacts with stakeholders.

A complete list of all documents and evidence material reviewed is included in Appendix 3 of this report.

C.2. On-site inspection

Duration of on-site inspection: 13/06/2016 to 14/06/2016				
No.	Activity performed on-site	Site location	Date	Team member
1.	Description & ownership of the project activity, additionality seriousness of CDM consideration; Baseline selection, HCA approval. Matters related to PDD and ER sheet, discussion of findings.	Mandsaur and Shajapur district of Madhya Pradesh	13/06/2016 to 14/06/2016	Vivek Kumar Ahirwar & Ajay Singh Thakur
2.	Project implementation, Organizational structure, Monitoring Plan & Methodology, Training procedures, Data management procedures	Mandsaur and Shajapur district of Madhya Pradesh	13/06/2016 to 14/06/2016	Vivek Kumar Ahirwar & Ajay Singh Thakur
3.	Project implementation, O&M, Training needs, Data logging	Mandsaur and Shajapur district of Madhya Pradesh	13/06/2016 to 14/06/2016	Vivek Kumar Ahirwar & Ajay Singh Thakur
4.	Employment to local villagers, social and economic benefits to local community due to implementation of the project activity.	Mandsaur and Shajapur district of Madhya Pradesh	13/06/2016 to 14/06/2016	Vivek Kumar Ahirwar & Ajay Singh Thakur

C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Mazumdar	Abhishek	EFES(P) Ltd	13/06/2016 to 14/06/2016	<ul style="list-style-type: none"> – Project participants involved in CDM project activity – General description of the project activity & technology used – Public funding/ Diversion of ODA and prior CDM consideration – Project design, Baseline and project boundary – Emission Reduction Calculation – Monitoring procedure, monitoring parameters – Environmental impacts – Duration of crediting period 	Vivek Kumar Ahirwar & Ajay Singh Thakur
2.	Dubey	Avinash	EFES(P) Ltd	13/06/2016 to 14/06/2016	<ul style="list-style-type: none"> – Monitoring procedure, Monitoring parameters 	Vivek Kumar Ahirwar & Ajay Singh Thakur
3.	Adlak	Bhooshan	SGSL	13/06/2016 to 14/06/2016	<ul style="list-style-type: none"> – Operation maintenance , calibration, data recording and invoicing – Monitoring procedure, – Monitoring parameters 	Vivek Kumar Ahirwar & Ajay Singh Thakur

C.4. Sampling approach

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Not applicable

C.5. Clarification requests (CLs), corrective action requests (CARs) and forward action requests (FARs) raised

Areas of validation findings	No. of CL	No. of CAR	No. of FAR
Demonstration of prior consideration of the CDM	1		
Identification of project type			
Description of project activity	2	2	
Application and selection of methodologies and standardized baselines			
- Application of methodologies and standardized baselines			
- Deviation from methodology and/or methodological tool			
- Clarification on applicability of methodology, tool and/or standardized baseline			
- Project boundary, sources and GHGs			
- Baseline scenario		1	
- Demonstration of additionality		1	
- Estimation of emission reductions or net anthropogenic removals			
- Monitoring plan		1	
Start date, crediting period type and duration			
Environmental impacts			
Local stakeholder consultation		1	
Sustainable development co-benefits			
Approval		1	
Authorization			
Modalities of communication		1	
Global stakeholder consultation			
Others (please specify)			
Total	3	8	0

SECTION D. Validation findings

D.1. Demonstration of prior consideration of the CDM

Means of validation	<p>The start date of the project activity is 09/01/2014 and same has been checked from the purchase order placed for the project activity. This is the earliest date on which the PP has committed to project capital expenditure. This is found to be the earliest real action towards the implementation of the project activity in line with the project start date definition, as mentioned under latest version of Glossary of CDM terms, thus it is accepted.</p> <p>The project activity has also already been implemented. Since the start date of the project activity is 09/01/2014 which is after 2nd August 2008, the project participant must inform a host party DNA and UNFCCC secretariat in writing of the commencement of the project activity and their intention to seek CDM status. Such notification must be made within 180 days of the project activity start date, using the standardized form CDM-PC-FORM</p> <p>The project participant had submitted prior notification of commencement of the project activity and their intention to seek CDM status to the UNFCCC as well as to host country DNA on 12th May 2014. The email communication sent to UNFCCC and Indian DNA (MoEF) about intimation of prior CDM consideration was verified and confirmed by assessment team. Assessment team identify that PP has sent prior consideration with project name "1.25 MW Solar Power Project by Enviromentfirst Energy Services (P) Limited" whereas geographical location and capacity was mentioned for Wind Power project. Assessment team verify GPS co-ordinates of WTGs mentioned in prior consideration form which is inline with current project activity.</p> <p>Notification was received by the UNFCCC. This was checked and confirmed from the web site https://cdm.unfccc.int/Projects/PriorCDM/notifications/index_html. Hence it is concluded that the PP notified the host party DNA and the UNFCCC within 180 days of start date of the project activity regarding the commencement of the project activity and their intention to seek CDM status.</p>
Findings	CL#3 Raised and resolved successfully.
Conclusion	Applus+ Certification is of the opinion that the project participant has seriously considered CDM in their decision to go ahead with the implementation of the project activity. This is in line with paragraph 41 of VVS for PAs version 02.0. This is found to be appropriate and it is accepted.

D.2. Identification of project type

Means of validation	<p>The installed capacity of the project is 3 MW that is less then threshold capacity under small-scale project activity (15MW). Thus, the project is correctly identified as small-scale project activity.</p> <p>The PDD has been completed using the latest and valid version of PDD form (version 11) and following instructions there in.</p>
Findings	No non-conformity was observed in this regard. Therefore, no finding was raised
Conclusion	Applus+ Certification is of the opinion that, in line CDM modalities and procedure, the project type is correctly identified as small-scale project activity which is outlined in paragraph 34 of the project standard. It is also confirmed that the valid version of the PDD form has been used to complete the PDD following instructions therein.

D.3. Description of project activity

Means of validation	<p>The proposed project activity involves the installation of 2 WTGs, each with a capacity of 1.5 MW, giving a total capacity of 3 MW. This proposed wind power project will reduce the GHG emissions generated by the current generation energy mix in India's Power Grid, which is dominated by fossil fuel based grid connected power plants. The power generated through the proposed project activity will be supplied to the Indian national grid through a contractual arrangement (PPA). The technical specifications of the project activity equipment's have been checked during the site visit and are found to be consistent with the purchase order raised for the project activity. The start date of the project activity is 09/01/2014, which is date of placement of the purchase order for the project activity. The project activity is located in the districts of Mandsaur and Shajapur, in the state of Madhya</p>
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	<p>Pradesh, in India. The location of the project activity mentioned in the PDD is checked during the site visit and it is accepted.</p> <p>The project description in the section A of the PDD is found to be complete and transparent and the salient features as validated are discussed below:</p> <ul style="list-style-type: none"> • The purpose of the proposed project activity is to generate electricity through WTGs, which is a renewable form of energy and supply the generated electricity to the Indian grid. In the absence of the project activity, the equivalent quantity of power would have been generated by fossil fuel dominated grid connected power plants, resulting in GHG emissions. • The project activity consists of the installation of 2 WTGs, each with a capacity of 1.5 MW and owned by M/s. Medicell. Commissioning of all the WTGs was done in 2016. This is checked and confirmed from review of the commissioning certificate. • The title of the project activity is "Wind Power Project in Madhya Pradesh by EnvironmentFirst-214". • The technology used in the proposed project activity; S82-1.5 MW Power turbines supplied by Suzlon each with a capacity of 1.5 MW. • The annual gross energy generation of the project is estimated to be 5,166 MWh/year based on the PLF of 17.42%. The PLF has been verified by the assessment team against the independent third party report. It is confirmed that the PLF considered by PP is reasonable and in line with the requirement of CDM EB "guideline for the reporting and validation of plant load factors". • The project activity will result in an annual average emission reduction of 5,047 t CO₂ equivalent. • The project participant has chosen to have a renewable Crediting Period of 7 years <p>It is found that the project description provided in section A in the PDD gives clear understanding of the nature of the project activity and its technical aspects, as it sufficiently covers all relevant elements of the project activity. Also description of the project activity is found to be accurate and complete. It is found to be consistent with the observations made during the site visit. This is found in line with paragraphs 50 of VVS for PAs version 02.0</p> <p>The final PDD has been found to be prepared in the latest available PDD form (CDM-PDD-FORM) version 11 and is found in accordance with the instructions for completing the project design document form as outlined in the template, thus it is acceptable.</p> <p>The technical lifetime of the project activity is mentioned as 25 years in section C.2 of the PDD. This is checked and verified from the International Standard IEC 61400-1 (Wind Turbines); it was also further crosschecked from the proposal issued by technology supplier (which covers design lifetime of the project activity). This is found to be appropriate and it is accepted.</p> <p>The project activity neither received any public funding from Annex 1 parties nor diverted ODA for project finance as mentioned in section A.5 of the PDD. This has been confirmed from the loan documents that clearly indicates debt and equity portion for the project activity. Further, the PP has provided declaration for no ODA. This is found to be appropriate and it is accepted.</p> <p>The project activity entitled "Wind Power Project in Madhya Pradesh by EnvironmentFirst-214" is a unique title. This has been checked and verified from the UNFCCC. The PDD is providing all required information on the purpose of the project activity, the type of technology used and the contribution of the project activity to the sustainable development which has been found to be acceptable.</p>
Findings	No non-conformity was observed in this regard. Therefore, no finding was raised
Conclusion	Applus+ Certification conducted document review and interviews/ inspection for this project activity. In view of the same the assessment team is able to confirm that the PDD contains a clear description of the project activity that provides a clear understanding of the precise nature of the project activity. This description is also found to be accurate and complete. The PDD satisfies the requirements of clause 7.4 of VVS for project activity version 02.0.

D.4. Application and selection of methodologies and standardized baselines**D.4.1. Application of methodologies and standardized baselines**

Means of validation	<p>The project activity applies the approved methodology AMS I D, "Grid Connected Renewable" version 18. The applicability of the methodology is justified through the following paragraphs of the methodology; As per the AMS I D, version 18,</p> <p>Criteria-2: This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass: (a) Supplying electricity to a national or a regional grid; or (b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.</p> <p><u>Validation assessment:</u> - The current project activity is a grid-connected renewable power generation. -The connection of the project activity with the grid is substantiated and confirmed by means of the Power Purchase agreements and the Commissioning certificates. -The project activity is a new wind power plant at the project site where no renewable power plant was operated prior to the implementation of the project activity; same has been confirmed during the site visit. The Purchase order for the windmills indicates that the windmills are new and do not involve retrofit and/or modifications. Thus the criterion (a) is applicable and (b) is not applicable for the proposed project activity.</p> <p>Criteria-3: Illustration of respective situations under which each of the methodology (i.e. "AMS-I.D.: Grid connected renewable electricity generation", "AMS-I.F.: Renewable electricity generation for captive use and mini-grid" and "AMS-I.A.: Electricity generation by the user) applies is included in the appendix.</p> <p><u>Validation assessment:</u> The project activity is the installation of a new wind power plant. This is confirmed through the purchase order and commissioning certificates. The proposed project activity supplies electricity to NEWNE grid. Hence, "AMS-I.D.: Grid connected renewable electricity generation", applies as included in appendix ¹ of the methodology.</p> <p>Criteria-4:</p>
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	Project type	AMS-I.A	AMS-I.D	AMS-I.F
1	Project supplies electricity to a national/regional grid		√	
2	Project displaces grid electricity consumption (e.g. grid import) and/or captive fossil fuel electricity generation at the user end (excess electricity may be supplied to a grid)			√
3	Project supplies electricity to an identified consumer facility via national/regional grid (through a contractual arrangement such as wheeling)		√	
4	Project supplies electricity to a mini grid ¹ system where in the baseline all generators use exclusively fuel oil and/or diesel fuel			√
5	Project supplies electricity to household users (included in the project boundary) located in off grid areas	√		

This methodology is applicable to project activities that:

- (a) Install a Greenfield plant;
- (b) Involve a capacity addition in (an) existing plant(s);
- (c) Involve a retrofit of (an) existing plant(s);
- (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or
- (e) Involve a replacement of (an) existing plant(s).

Validation assessment:

The project activity is the installation of a new wind power plant and does not involve switching from fossil fuels to renewable energy sources at the site of the project activity. This is confirmed through the purchase order and commissioning certificates.

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

Criteria-5:

Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology:

- (a) The project activity is implemented in an existing reservoir with no change in the volume of reservoir;
- (b) The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the project emissions section, is greater than 4 W/m²;
- (c) The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m².

Validation assessment:

The project activity is the installation of a new wind power plant; same has been confirmed from physical inspection during the validation site visit. Thus the criterion is not applicable for the proposed project activity.

Criteria-6:

If the new unit has both renewable and non-renewable components (e.g. a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.

Validation assessment:

The project activity is a 3 MW electric power generation project using Wind as the source of energy. Same has been confirmed from physical inspection during the validation site visit. The project does not co-fires fossil fuels, since Wind is the only source of power. Thus the proposed project activity has only renewable component and any non-renewable component is not applied, and the capacity of the entire unit shall not exceed the limit of 15 MW. Thus the criterion is not applicable for the proposed project activity.

Criteria-7:

Combined heat and power (co-generation) systems are not eligible under this category.

Validation assessment:

The project activity is the installation of a new wind power plant and does not involve combined heat and power (co-generation) systems at the site of the project activity. This is confirmed through the purchase order and commissioning certificates. Thus the criterion is not applicable for the proposed project activity.

Criteria-8:

In the case of project activities that involve the capacity addition of renewable energy generation units at an existing renewable power generation facility, the

added capacity of the units added by the project should be lower than 15 MW and should be physically distinct² from the existing units.

Validation assessment:

The project activity is the installation of a new wind power plant and it does not involve any capacity addition at an existing renewable power generation facility. This is confirmed through the purchase order and commissioning certificates. Thus the criterion is not applicable for the proposed project activity.

Criteria-9:

In the case of retrofit, rehabilitation or replacement, to qualify as a small-scale project, the total output of the retrofitted, rehabilitated or replacement power plant/unit shall not exceed the limit of 15 MW.

Validation assessment:

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

Criteria-10:

In the case of landfill gas, waste gas, wastewater treatment and agro-industries projects, recovered methane emissions are eligible under a relevant Type III category. If the recovered methane is used for electricity generation for supply to a grid then the baseline for the electricity component shall be in accordance with procedure prescribed under this methodology. If the recovered methane is used for heat generation or cogeneration other applicable Type-I methodologies such as “AMS-I.C.: Thermal energy production with or without electricity” shall be explored.

Validation assessment:

The project activity is not a case of landfill gas, waste gas, wastewater treatment and agro-industries projects, nor is recovering methane. Because, it is a greenfield wind power generation project activity; same has been confirmed from physical inspection during the validation site visit. Thus the criterion is not applicable for the proposed project activity.

Criteria-11:

In case biomass is sourced from dedicated plantations, the applicability criteria in the tool “Project emissions from cultivation of biomass” shall apply.

Validation assessment:

The project activity does not use biomass as it is a greenfield wind power generation project activity; same has been confirmed from physical inspection during the validation site visit. Thus the criterion is not applicable for the proposed project activity.

Thus, it can be concluded that the applied methodology AMS I.D., version 18 is applicable to the project activity.

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

1. Tool to calculate the emission factor for an electricity system (Version 07.0)

The PDD refers and correctly applies the latest version of tool to calculate the

² Physically distinct units are those that are capable of generating electricity without the operation of existing units, and that do not directly affect the mechanical, thermal, or electrical characteristics of the existing facility. For example, the addition of a steam turbine to an existing combustion turbine to create a combined cycle unit would not be considered “physically distinct”.

	<p>emission factor for an electricity system, version 07.0. Also the PP has referred the CEA Baseline CO₂ Emission Database version 10 dated 16/12/2014 which was the latest available database at the time of PDD submission for validation of the project activity. The locations of windmills are in the state of Madhya Pradesh, in India. As per CEA Baseline CO₂ Emission Database, the state of Madhya Pradesh comes under the Indian grid, the geographic and system boundaries of which are clearly identified; information on the characteristics of the grid is available. Thus, the tool is applicable for the project activity.</p> <p>2. Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion (Version 03.0) Since there is no fossil fuel combustion involved in the project site or in the project boundary, this tool is not applicable to the proposed project activity and not used/applied by the project participant.</p> <p>3. Tool to determine the remaining lifetime of equipment (version 01.0) The project activity involves all new WTGs and there is no retro fit, hence this tool is not applicable to the proposed project activity and not used/applied by the project participant.</p> <p>4. Project and leakage emissions from biomass (version 04.0) Since there is no biomass involved in the project site or in the project boundary, this tool is not applicable to the proposed project activity and not used/applied by the project participant.</p> <p>5. Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period ((Version 03.0.1) Since there is no renewal of the crediting period, this tool is not applicable to the proposed project activity and not used/applied by the project participant.</p> <p>Apart from above, the PP has been applied the tool "Demonstration of additionality of Small Scale project Activities (version 12.0.0)".</p>
Findings	Refer respective CARs/CLs/FARs
Conclusion	<p>Applus+ Certification has concluded that the selected baseline and monitoring methodology has been previously approved by the CDM Executive Board, and is applicable to the Project, which complies with all the applicability conditions therein and the selected version is valid at the time of submission of the proposed project activity for registration.</p> <p>It is also confirmed that the methodology is correctly applied by comparing it with the actual text of the applicable version of the methodology.</p>

D.4.2. Deviation from methodology and/or methodological tool

Means of validation	Not applicable
Findings	Not applicable
Conclusion	Not applicable

D.4.3. Clarification on applicability of methodology, tool and/or standardized baseline

Means of validation	Not applicable
Findings	Not applicable
Conclusion	Not applicable

D.4.4. Project boundary, sources and GHGs

Means of validation	<p>As per the guidelines mentioned in the methodology AMS I.D., version 18, "The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to". The project activity will supply electricity to the National Grid. The project boundary includes the WTGs, the metering points and the grid, which has been illustrated in the Section B.3 of the PDD and gives clear understanding of the project boundary; thus it is acceptable. The same has been confirmed during the site visit and is found to be appropriate.</p> <p>The consideration, by the PP, of only CO₂ gas for the baseline emissions is conservative and also in line with the methodology. The exclusion of CH₄ & N₂O in the baseline scenario is appropriate. The project activity involves the generation of</p>
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	<p>electricity using wind energy. Hence, there are no project emissions associated with this project activity. Hence, the exclusion of CO₂, CH₄ & N₂O in the project scenario are appropriate. The electricity imported by the project activity will be accounted in the net electricity exported to the grid by the project activity. There are no other sources of project emissions. Hence, the project participant has considered the project emissions as zero for project activity; this is in line with the methodology.</p> <p>The project boundary gives a clear understanding of emission sources related to the baseline scenario. There are no sources attributable to project emissions or leakage emissions, which can contribute more than 1% of overall expected annual emission reductions, and which are not addressed by the applied methodology, involved, as the project activity is electricity generation through windmills. No leakage emissions involved as equipment's were not transferred from another activity or to another activity.</p> <p>The project boundary in section B.3 of the PDD properly explains the physical description of the project activity. Also it is found that all the components and facilities to mitigate GHG gases are included in the project boundary.</p>
Findings	Refer respective CARs/CLs/FARs
Conclusion	<p>Applus+ Certification is of the opinion that the project boundary has been correctly identified in the PDD in line with paragraphs 69 to 74 of VVS for PAs, version 02.0.</p> <p>Furthermore all the emission sources and gases have been included in the project boundary and the description in the PDD is accurate and complete, and also that the selected sources and gases are justified for the proposed project activity.</p>

D.4.5. Baseline scenario

Means of validation	<p>As the project activity involves the installation of a newly built and grid-connected renewable power plant that exports the generated electricity to the Indian grid system in India, hence, according to the para 19 of the methodology AMS I.D. version 18, the baseline scenario is determined properly as:</p> <p><i>"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".</i></p> <p>The approved methodology that is applied prescribes the baseline scenario, and the same has been opted in this project, therefore, no further analysis on baseline is required.</p> <p>The relevant National Acts and regulations pertaining to generation of energy in India are:</p> <ul style="list-style-type: none"> • Electricity Act 2003 • National Electricity Policy 2005 • Tariff Policy <p>The above mentioned National Acts and regulations pertaining to generation of energy in India does not influence the choice of fuel used for power generation. There is no legal requirement on the choice of a particular technology for power generation.</p> <p>The latest available version for "Tool to calculate the emission factor for an electricity system" is version 07 and the PP has correctly referred to the same in the section B.4 of the final PDD for determining baseline grid emission factor and it is found to be correct.</p> <p>The discussion on baseline is comprehensive in the PDD section B.4 and it is in line with the baseline and monitoring methodology AMS I.D. version 18. Also the identified baseline for the project activity is the most likely scenario of what would have occurred in the absence of the project activity and is confirmed by TA expert on the team; thus it is accepted. The project participant has included all sources and references used for baseline determination for the project activity in the PDD and the identified baseline is justified appropriately by the project participant. The Baseline scenario and baseline emission calculations are found as per AMS I.D. version 18. The combined margin approach is the ex-ante approach as per tool to calculate the emission factor for an electricity system.</p>
Findings	Refer respective CARs/CLs/FARs
Conclusion	<p>In accordance with the requirements of paragraph 83 of the VVS for PAs version 02.0, the validation team confirm that:</p> <p>(a) All the assumptions and data used by the project participants are listed in</p>

	<p>the PDD, including their references and sources;</p> <p>(b) All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD;</p> <p>(c) Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable;</p> <p>(d) Relevant national and/or sectoral policies, regulations and circumstances are considered and listed in the PDD;</p> <p>(e) The methodology has been correctly applied to identify the most plausible baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity.</p>
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D.4.6. Demonstration of additionality

Means of validation	<p>The additionality of the proposed project activity is demonstrated using an investment barrier analysis as according to the steps described in the 'Demonstration of additionality of Small Scale project Activities' (version 12.0.0). As per the applied methodology AMS-I.D. version 18; Para 19, 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 plant and by the addition of new generation sources. As the baseline scenario is prescribed by applied methodology, hence no further analysis is carried out to identify alternatives. This is in line with the methodological requirement.</p> <p>PP has adopted "Investment Analysis tool" version 09.0 to demonstrate the additionality of the project.</p> <p>Investment analysis: For the proposed project activity investment analysis approach is applied to demonstrate the additionality using the benchmark analysis method.</p> <p>Post tax equity IRR is identified as the most suitable financial indicator. Since the project gets revenue from the sale of electricity project, hence cannot apply simple cost analysis; furthermore investment comparison analysis cannot be applied as the alternative to the project activity is the electricity generated by new and existing grid connected power plants.</p> <p>The project participant has applied the benchmark analysis method. Since the project proponent is demonstrating the financial unattractiveness of the project and the project cost involves both equity and debt, equity IRR is considered appropriate indicator and the same is found to be appropriate, hence accepted by the assessment team.</p> <p>Benchmark selection: As per paragraph 15 of the 'investment analysis tool' version 09.0, <i>"The applied benchmark shall be appropriate to the type of IRR calculated. Local commercial lending rates or WACC are appropriate benchmarks for a project IRR. Required/expected returns on equity are appropriate benchmarks for equity IRR. Benchmarks supplied by relevant national authorities are also appropriate. The DOE shall validate that the benchmarks used are applicable to the project activity and the type of IRR calculation presented."</i></p> <p>As per the above guideline the required/expected returns on equity are appropriate benchmarks for equity IRR.</p> <p>In accordance with the para 20 of the Investment Analysis tool, version 09.0, <i>'If the benchmark is based on parameters that are standard in the market, the cost of equity should be determined either by: (a) selecting the values provided in Appendix; or by (b) calculating the cost of equity using CAPM. The default values in the Appendix A are based on long term historical returns and therefore may also be applied by projects with a start date prior to the adoption of default values by the</i></p>
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Board.'

The project participant considered default values for the expected return on equity of 11.75% as given table 1 of Investment Analysis tool, version 07 for country India applicable to group 1 projects /, which is expressed in real terms. The project equity IRR calculated is nominal terms as escalation is considered in O&M cost. Accordingly PP converted the default benchmark which is in real terms into nominal terms by using the following equation:

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

Where,

Default value for Real Benchmark = 11.75% (as per Appendix of EB92, Annex 5)

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

The assessment team referred the book 'Corporate Finance" 2nd edition, by Aswath Damodaran. In page 320 of the book, the same equation is mentioned for converting real into nominal values. Hence the assessment team considers the above equation as appropriate for converting real benchmark into nominal benchmark.

Nominal Benchmark estimated (for Mandsaur location) = $(1 + 11.75\%) * (1 + 5.60\%) - 1$
= 18.01%

Nominal Benchmark estimated (for Sahjapur location)= $(1 + 11.75\%) * (1 + 6.00\%) - 1$
= 18.46%

Reserve Bank of India (RBI) is Central Bank of host country (India) and it is India's monetary authority. The WPI inflation forecasted by RBI for next 10 years is expected to be 5.60% and 6.00% as per Results of 43rd Round (Q3:2016-17) of Survey of Professional Forecasters on Macroeconomic Indicators on 07/12/2016 . The assessment team has verified all the above said documents and confirmed that the benchmark identified to compare the financial attractiveness of the project activity is appropriate.

Validation of Input Parameters:

The input parameters in the financial analysis have been taken as per the values and assumptions applicable and available at the time of decision (i.e. 09/01/2014 and 08/12/2013) to invest in the project activity in line with Paragraph 10, investment analysis tool version 09.0. These extracts of board notes were checked in original during site visit and they are found to be authentic.

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

- Board Resolution by Medicell to invest into the proposed project activity considering CDM revenue
- Offer Letter
- Equity IRR and Benchmark Analysis calculation sheet
- Applicable MPERC tariff order

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

- Power Purchase Agreements (PPAs)
- Purchase order for WTGs
- Commissioning Certificates for WTGs
- Third Party PLF/CUF assessment report
- Other relevant registered CDM Projects as referred in this section.

The post-tax equity IRR for the project activity at the time of investment decision comes out to be 8.58% and 9.24%. The data, rationales, assumptions and justifications mentioned in the PDD and investment analysis excel sheets were checked against the local knowledge of the validation team, sectoral scope

expertise, regulatory and applicable legal requirements in the Host country India. The documents were also verified by the financial expert.

Project cost:

The Project cost for the project activity has been considered on the basis of the Offer Letter which is in turn based on budgetary offers received from the technology supplier provided by Suzlon (technology supplier) to the project participant during conceptualization stage of the project. The project cost includes cost of WTGs, steel towers, transformers, civil works, transportation, erection and Commissioning, labour and services, cost for obtaining all government permissions and infrastructure development charges. This is found to be appropriate and it is accepted. The project cost for the project activity has been considered as INR 99.50 million per WTG based on project cost from Offer Letter available at the time of investment decision for the project activity. The appropriateness of the same is further cross-checked against the actual purchase order placed for the project activity. The actual project cost for the project activity is INR 93.11 million per WTG and it is evident from purchase order placed to WTGs supplier for the project activity.

Operation and Maintenance Cost and its escalation:

The O & M cost for the project activity is considered from the Offer Letter. Operation and maintenance cost considered is INR 2.08 million per annum per WTG for the project activity. O&M will be free of cost for first year of operation of the project activity. For 2nd year O & M cost will apply and an escalation of 5% will be applicable from 3rd year onwards. Also O&M cost considered for the project activity is further checked tariff order (Latest applicable at the time of investment decision) which indicates O&M cost as 1 % of the capital cost of the project with 5.0% escalation every year.

Plant Load Factor:

The Plant Load Factor available to the PP at the time of decision of the project activity is 17.42% and basis for the same is PLF Report prepared by third party. The Project Participant had contracted third party and mandate was given for PLF determination of the project activity.

This is found to be in line with paragraph 3 (b) of Annex 11 of EB 48 and it is accepted. To further crosscheck appropriateness of PLF considered for the project activity, MPERC tariff order is checked which is the latest available document at the time of decision making and the order indicates PLF of 18.5% or 25%. This is covered in the sensitivity analysis variation range and the equity IRR remains additional under the investment benchmark value. Project specific PLF of 17.42% from the PLF report was considered by the project participant in project investment analysis at the time of investment decision. Thus it is concluded that PLF of 17.42% considered by the PP is appropriate; and the same has been considered in IRR calculations for the project activity.

Electricity Tariff:

The Project participant had considered INR 5.92/kWh as average electricity tariff fixed for 20 years of project's lifetime. It is checked and confirmed through Tariff Order. Since, it was the latest available and applicable at the time of conceptualization of the project activity and it is accepted. Thus it is concluded that electricity tariff considered for the project activity is found to be appropriate and it is accepted.

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

The Electricity Act, 2003, the policies framed under the Act, as also the National Action Plan on Climate Change (NAPCC) provide for a roadmap for increasing the share of renewable in the total generation capacity in the country. Central Electricity Regulatory Commission (CERC) has notified Regulation on Renewable Energy Certificate (REC) in fulfilment of its mandate to promote renewable sources of

energy and development of market in electricity. Thus the project's applicability for these benefits under REC mechanism has been checked. Detailed procedure on REC mechanism dated 01/06/2010 by Central Electricity Regulatory Commission/42/ (http://www.nerlrc.org/Docs/Order_for_Detailed_Procedure_01-06-2010.pdf) is checked for REC eligibility of the project activity and it is confirmed that the procedure was applicable at the time of projects investment decision. It is confirmed that REC is not applicable for the projects taking benefits of preferential tariff, hence it is concluded that REC benefits are not applicable to project activity. Also in actual scenario, PP will not be claiming REC benefits for the project activity and it is confirmed (<https://recregistryindia.nic.in/index.php/publics/index>) official website of REC registry; hence it is accepted.

Debt to Equity Ratio:

The project activity is funded 100% equity. There is no variation and IRR remains well below the benchmark and hence it is found appropriate and thus it is accepted.

Insurance Cost:

The project activity is 0.15 million as per TAC order 2001, Sheet No. 31, which found to be correct, hence accepted.

Depreciation Rate:

The PP has considered book depreciation at the rate of 5.28% as depreciation rate by Straight Line Method as a consideration specific to WTGs in the project activity. The basis for the same is

The Companies Act, 1956, SCHEDULE XIV (See sections 205 & 350)/xx/ and this is further crosschecked against publically available web-link <http://taxguru.in/company-law/rates-of-depreciation-under-the-companies-act-as-mentioned-in-schedule-xiv.html>.

The PP had considered IT depreciation rates as 7.69% as per Income Tax, Depreciation rates for power generating units (Source website <https://www.incometaxindia.gov.in/charts%20%20tables/depreciation%20rates.htm>) This has been checked and confirmed with the financial expert involved in the project activity. This is found to be appropriate and it is accepted.

Residual (Salvage) Value:

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

Income Tax and MAT:

PP has considered Income Tax as 32.45% (inclusive of Surcharge (5%), Education Cess (3%) and Secondary and MAT 0% respectively (Including surcharge and education cess) in investment analysis for the project activity. This is as per tax rates applicable to a domestic company in India (<https://www.incometaxindia.gov.in/Tutorials/2%20Tax%20Rates.pdf>).

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

Conclusion:

The assessment team has confirmed that the evidences were checked for their validity and applicability at the time of the investment decision and found appropriate as per paragraph 10, investment analysis tool version 09.0, thus are

acceptable.

The project participant has taken the values of Input parameters from offer letter and tariff order. Further the assessment team confirmed that:

- The DPR is the basis for the decision to proceed with the investment in the project, i.e. that the period of time between the finalization on offer letter and the investment decision is sufficiently short that it is unlikely in the context of the underlying project activity that the input values would have materially changed; Also for robustness of additionality, assessment team has checked IRR calculation with actual scenario and found that project IRR is still below benchmark value. Thus it is accepted.
- The values used in the PDD and associated annexes are fully consistent with the Offer Letter;
- The input values from the offer letter are valid and applicable at the time of investment decision. This has been cross checked from the technical area expert and financial expert of assessment team and found to be appropriate.

The equity IRR for the project activity without CDM revenues is 9.79% and 5.23% as per input values available at the time of investment decision which confirms that the proposed project activity in absence of CDM benefits and compared to the benchmark of 18.01% and 18.46% respectively is not economically and financially attractive.

Sensitivity Analysis:

The sensitivity analysis has been carried out by the project participant for a reasonable range of variations i.e. +/-10% of major parameters, and this was found to be as per paragraph 27 of investment analysis tool version 09.0. At the time of decision, the PP had considered the proposal cost for project activity, as per Offer Letter. The PLF is nature dependent and varies depending on wind velocity and density. As O&M cost is taken from Offer Letter, there may be variation in O& M cost as O&M agreements for the project activities are signed. Also electricity tariff is assessed under sensitivity analysis though tariff considered for the project activity is average electricity tariff for 20 years of the lifetime of the project activity conservatively. These parameters have material impact on the investment analysis. The project participant has considered all the variables that constitute more than 20% of either total project costs or total project revenue i.e. PLF, Project Cost, tariff and O&M cost in the sensitivity analysis and hence this is found to be in line with paragraph 27 of investment analysis tool version 09.0.

The impact of +/-10 % variation in these variables is summarized as below;

WTG 1

Percentage Variation	+10%	0%	-10%
Parameter	Plant Load Factor(Energy generation)		
Equity IRR (%)	7.64%	8.58%	10.87%
Parameter	Project Capital Cost		
Equity IRR (%)	10.85%	8.58%	7.99%
Parameter	Electricity Tariff		
Equity IRR (%)	8.14%	8.58%	10.48%
Parameter	Operation and Maintenance Cost		
Equity IRR (%)	9.50%	8.58%	9.13%

WGT 2 :

Percentage Variation	+10%	0%	-10%
Parameter	Plant Load Factor(Energy generation)		
Equity IRR (%)	6.89%	9.24%	10.14%
Parameter	Project Capital Cost		
Equity IRR (%)	9.95%	9.24%	7.40%

	Parameter	Electricity Tariff		
	Equity IRR (%)	6.89%	9.24%	10.14%
	Parameter	Operation and Maintenance Cost		
	Equity IRR (%)	8.92%	9.24%	8.23%
	<p>Based on above results, it can be concluded that the equity IRR of the project activity is not crossing the benchmark even with +/-10% variations in the critical parameters.</p> <p>It is verified that the Equity IRR crosses the benchmark if:</p> <p>1. Project cost reduced by 33.12% and 46.40%:</p> <p>This is not a likely scenario as actual project is the same as mentioned in the offer letter & considered for IRR calculation. Hence further reduction in the project cost is not a likely scenario.</p> <p>2. PLF increases by 44.31% and 71%:</p> <p>PLF considered by the project participant is appropriate in line with paragraph 3 (b) of EB 48 Annex 11. As per tariff order also the indicative PLF (maximum) for tariff determination is 25% . Therefore a further increase in PLF is very unlikely.</p> <p>3.Tariff increases by 56% and 71%</p> <p>Further increase in tariff rate is highly unlikely scenario as the tariff rate is fixed for 20 years as verified through the Offer Letter and further confirmed with the PPA signed with state electricity board.</p> <p>Also even at 100% reduction in O&M cost, the IRR does not cross the benchmark. In view of the above discussion the assessment team has concluded that the project activity is additional and it is found to be financially not viable.</p>			
Findings	Refer respective CARs/CLs/FARs			
Conclusion	<p>Applus+ Certification confirms that:</p> <ol style="list-style-type: none"> The start date of project activity is prior to the date of publication of PDD for stakeholder comments. The start date of the project activity has been determined in accordance 'Glossary of CDM terms' The evidence for prior consideration of CDM project activity is duly assessed and found to be authentic. The project analysis complies with requirements of the latest version of VVS. All the parameters and assumptions used in the investment analysis have been assessed thoroughly and found appropriate. The information with regard to how the input values was validated, cross-checked is included under relevant parameter. The sources used have been reviewed by the assessment team found to be authentic as referenced under relevant parameter. The benchmark was found suitable and has been thoroughly explained in detail. All the assumptions and calculations for investment analysis area have been checked by the financial expert and technical expert and found to be correct and reasonable. The financial returns from the project activity area insufficient to meet the required investment against the selected benchmark under reasonable variations (sensitivity) conducted on key parameters. The project activity complies with the latest version of "Tool for demonstration and assessment of additionality" and "Investment analysis tool". 			

D.4.7. Estimation of emission reductions or net anthropogenic removals

Means of validation	<p>The proposed project activity has applied baseline methodology as mentioned in the small scale methodology AMS ID version 18.</p> <p>Accordance with the applied methodology emission reductions are calculated as</p>
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follows:

$$ER_y = BE_y - PE_y$$

Where,

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

BE_y = Baseline emissions in year y (t CO₂/yr)

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

Baseline emissions:

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

The baseline emissions are to be calculated as follows:

$$BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$$

where,

BE_y = Baseline emissions in year y (tCO₂)

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

$EF_{grid,CM,y}$ = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (tCO₂/MWh)

Calculation of $EG_{PJ,y}$:

As per AMS ID version 18, the calculation of $EG_{PJ,y}$ is different for Greenfield plants, capacity additions, retrofits, rehabilitations, and replacements.

$$EG_{PJ,y} = EG_{facility,y}$$

Where,

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

$EG_{facility,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)

Determination of $EG_{facility,y}$:

Ex-ante determination of $EG_{facility,y}$ is done, based on the installed capacity 3 MW and PLF as 18.82% and 20.50% as per third party PLF assessment report. The amount of electricity delivered to grid is estimated to be 2472.9 MWh/year and 2693.7 MWh/year respectively.

For ex-post, the value shall be calculated as:

$EG_{facility,y} = EG_{export} - EG_{import}$ and recorded in "Report on Generation & Compensation" issued based on JMR issued by MPPKVCL.

Parameter EG_{export} and EG_{import} is calculated using measured values, monitored through calibrated energy meters (Please refer section D.4.8 of this report for further details).

The net electricity supplied from the project activity to the grid will be cross-checked with the invoices for the monthly electricity exported (EG_{export}) by the project activity to the grid minus the electricity import recorded in the monthly bills issued to the project participant.

Calculation of emission factors:

The calculation for the operating margin and combined margin for the Indian Grid is readily available and published by the Central Electricity Authority, Government of India. The CEA power sector data is referred by all CDM project in India in the ER calculation and it is yearly updated with recent data. The project activity has referred the CEA Baseline Carbon Dioxide Emission Database is version 10 dated 06/12/2014, which was the latest version available during webhosting the PDD.

	<p>The PP has used the simple operating margin calculation. The simple operating margin is calculated as an average of the latest available three years (at the time of PDD submission for webhosting of the project activity) i.e. 2011-12, 2012-13 and 2013-14. The value for weighted average operating margin has been validated and used as 0.9862 tCO₂/MWh.</p> <p>The Build margin for the National grid is calculated ex-ante based on the average emission intensity of 20% most recent capacity additions in the grid based on the net generation for the year 2016-2017 considered as 0.8723 tCO₂/MWh.</p> <p>The weighted average combined margin has been calculated by the PP, considering the 75% weighted for operating margin and 25% for build margin; this is in accordance with the tool. The weighted average combined margin emission factor for the project activity comes to 0.9495 tCO₂/MWh.</p> <p>The PP has provided the calculation for the same in the ER calculation sheet and it was validated by the assessment team. The baseline emission factor for the electricity system has been calculated on ex-ante basis and will remain fixed for the entire project crediting period.</p> <p>Calculation of project emissions: As per the applied methodology, for most renewable power generation project activities, P_{Ey} = 0.</p> <p>Since the project activity is a wind energy based power generation, the project emissions are not applicable to the project activity. Hence, P_{Ey} = 0</p> <p>Calculation of leakage emissions: As per the applied methodology, no leakage emissions are considered. The main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing, and transport). These emissions sources are neglected. Therefore, L_{Ey} = 0.</p>
Findings	Refer respective CARs/CLs/FARs
Conclusion	Applus+ Certification confirms that calculation is appropriate

D.4.8. Monitoring plan

Means of validation	<p>The present CDM project activity uses monitoring methodology AMS I D version 18. The monitoring plan provide procedures for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period.</p> <p>The monitoring plan of final PDD includes the below parameters</p> <ol style="list-style-type: none"> 1. Net electricity supplied by the project activity to the grid in year y ($EG_{facility,y}$) 2. Quantity of electricity exported by the project activity to the grid in year y ($EG_{export,y}$) 3. Quantity of electricity imported by the project activity from the grid in year y ($EG_{import,y}$) <p>Net electricity supplied by the project activity to the grid in year y ($EG_{facility,y}$) is being calculated as difference of Electricity exported to the grid by the project activity ($EG_{export,y}$) and Electricity imported from the grid by the project activity ($EG_{import,y}$).</p> <p>During the site visit it is observed that WTGs belongs to project activity are connected to common metering point (at 220/33kV substation) where the PP and other project developers feed electricity.</p> <p>The electricity exported and imported by the project activity (along with non-Project Promoter WTGs) is metered at common metering point (220/33kV substation) through given feeder. The metering point consists of a main meter & check meter (ABT meters), having accuracy of 0.2s. This meter reading is taken jointly by the representative of the State Utility MPPKVVCL (Madhya Pradesh Paschim Kshetra Vidyut Vitaran Company Limited and Suzlon (on behalf of project promoter).</p> <p>At the common metering point parameters like total export & total import are</p>
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measured for all the connected WTGs (including non-project WTGs).

The monitoring & measurement of electricity at the common metering point is being done on continuous basis; while monthly recording is done in the JMRs.

The total import and import reading at common metering point (220/33kV substation) for a given billing month is obtained by subtracting initial reading (taken in previous month) from the final reading (taken in billing month). The difference is multiplied by the applicable meter constant/factor.

Monthly value of electricity exported and imported by the project WTGs is arrived by using the apportioning procedure followed by the wind farm developer (Suzlon).

Apportioning procedure:

The sample apportioning procedure adopted for any given WTG for any given month is given below:

Generation Ratio at site metering point:

The generation ratio is the ratio of controller reading of project activity WTGs to the controller reading for all WTGs connected to the applicable metering point.

$$G_{R, \text{ metering point}} = EG_{\text{ Controller, WTG}} \div EG_{\text{ Controller, metering point}}$$

Where:

$G_{R, \text{ metering point}}$: Generation Ratio at metering point

$EG_{\text{ Controller, WTG}}$: Electricity generated by installed WTGs of the project activity connected to the applicable metering point

$EG_{\text{ Controller, metering point}}$: Total generation by all the connected WTGs (project and non-project WTGs) to the applicable metering point

Determination of net electricity export by project activity WTGs to the grid ($EG_{\text{ facility, y}}$):

The main meter at the applicable metering point measures number of parameters including export and import for all the connected WTGs.

The import, kWh by the project WTG at the metering point is calculated in the following manner:

$$EG_{\text{ import, kWh}} = G_{R, \text{ metering point}} \times EG_{\text{ Total Import, metering point}}$$

Where:

$G_{R, \text{ metering point}}$: Generation Ratio at metering point

$EG_{\text{ Total Import, metering point}}$: Total Import, kWh by all the WTGs at the metering point

In the same way the export, kWh by the project WTG at the metering point is calculated in the following manner:

$$EG_{\text{ export, kWh}} = G_{R, \text{ metering point}} \times EG_{\text{ Total Export, metering point}}$$

Where:

$G_{R, \text{ metering point}}$: Generation Ratio at metering point

$EG_{\text{ Total Export, metering point}}$: Total Export, kWh by all the WTGs at the metering point

The net electricity supplied by the by project activity WTGs to the grid is calculated as the difference of $EG_{\text{ export}}$ and $EG_{\text{ import}}$.

Thus:

$$= EG_{\text{ export, kWh}} - EG_{\text{ import, kWh}}$$

Post apportioning, Suzlon issues month wise "Monthly Report on Generation & Compensation" that is endorsed by state utility (MPPKVVCL). This report contains electricity export, import and net export by the project WTGs. These values (mentioned in "Monthly Report on Generation & Compensation") are the main source to calculate the baseline emission by this project activity and same is in line with section B.7.3 of the PDD. The apportioning procedure has been implemented used in this project activity is common a practice followed for wind projects in the State of Madhya Pradesh, India.

	<p>It is noted that electricity generation from other WTGs is used to calculate the export, import by the project WTGs that is not under control of PP, hence the same is not included in section B.7.1 of PDD as monitoring parameter.</p> <p>Assessment of data parameter to be monitored: The parameter $EG_{\text{facility},y}$ is being calculated as difference of $EG_{\text{export},y}$ & $EG_{\text{import},y}$ and those are being calculated using apportioning procedure as described above and in section B.7.3 of the PDD.</p> <p>It is to be noted that the input parameters used in calculation of $EG_{\text{export},y}$ & $EG_{\text{import},y}$ are being measured by energy meters of accuracy class 0.2s located at 220/33kV substation and through LCS meters fitted in the individual WTG. These input parameters are measured continuously and at least monthly recording. This is in line with methodology and is accepted.</p> <p>Meters installed by state utility at the substation records both electricity exported to grid by all WTGs connected to the substation and electricity imported from grid by all WTGs connected to the substation. The value of the net energy exported by the project activity is calculated based on the apportioning procedure. Hence, it is concluded that the approach to calculate emission reductions is clearly demonstrated in the PDD is found to be appropriate and it will remain consistent throughout the crediting period.</p> <p>Joint Meter Reading is being taken jointly by the officials of the state utility MPPKVVCL (Madhya Pradesh Paschim Kshetra Vidyut Vitaran Company Limited) and Suzlon as project participant's representative and accordingly JMR Report is being prepared.</p> <p>As part of QA/QC procedure being followed at site, the energy meters are completely under control of State Utility and are sealed in presence of both the state utility official & representative of PP.</p> <p>Calibration of all the meters will be undertaken by the state utility once in 5 years, that in line with the CEA guideline (CEA Notification No. 502/70/CEA/DP&D dated 17/03/2006) and faulty meters will be duly replaced immediately.</p> <p>Monthly values of the monitoring parameters $EG_{\text{facility},y}$, $EG_{\text{export},y}$ & $EG_{\text{import},y}$ will be directly sourced from "Monthly Report on Generation & Compensation" issued by the Suzlon and endorsed by state utility (MPPKVVCL).</p> <p>Monthly values of the net electricity supplied from the project activity to the grid ($EG_{\text{facility},y}$) will be cross-checked with the invoices for the monthly electricity exported (EG_{export}) by the project activity to the grid minus the electricity import recorded in the monthly bills issued by the Suzlon to the project participant. This is in line with methodology and is accepted.</p> <p>The monitoring methodology applies consistently the choice of the option selected for monitoring of baseline emissions. The monitoring plan provide procedures for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period.</p> <p>The project participant has the ability to implement the monitoring plan. This is checked through discussion with consultant, the project participant and wind farm developer during the physical site inspection. The staffs at the sub-station and the representative of the WTG providers were also interviewed to verify the accuracy in the documents. This has been checked during the site visit and is found to be acceptable.</p> <p>The final PDD has been reviewed to check that the procedure for data uncertainty, emergency preparedness, roles and responsibility, operational and management structure are mention in the PDD. The monitoring plan completely describes all measures to be implemented for monitoring all parameters required.</p>
Findings	Refer respective CARs/CLs/FARs
Conclusion	<p>Applus+ Certification confirms that:</p> <ol style="list-style-type: none"> 1. The monitoring plan as described in section B.7 of the PDD takes into account all the relevant parameters prescribed in the applied monitoring methodology. 2. The monitoring plan was assessed by a two way approach: <ul style="list-style-type: none"> • By checking the Compliance of the monitoring plan with the applied approved methodology and

	<ul style="list-style-type: none"> By assessing the feasibility of implementation of the monitoring plan as described in the PDD through onsite observation of the project activity and the monitoring system in place. <p>3. The monitoring plan also considers sufficient details about the parameters being monitored and takes enough measures for the correct estimation of the same. Therefore, the monitoring plan has complied with the requirements in the approved methodology.</p>
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D.5. Start date, crediting period type and duration

Means of validation	<p>The start date of the project activity is 09/01/2014 and the operation lifetime is 20 years as described in the PDD. Evidence is submitted for the start date of the project activity as the Purchase order.</p> <p>The crediting period chosen is 7 years renewable crediting period and start date of crediting period as 01/02/2019, or the date of registration of the project activity under UNFCCC, whichever is later.</p>
Findings	Refer respective CARs/CLs/FARs
Conclusion	Applus+ Certification confirms that the project activity comply the requirements of para 123-125 of CDM PS for PAs Version 02.0.

D.6. Environmental impacts

Means of validation	<p>The project participant has mentioned in the PDD that the present project activity does not require EIA to be carried out because as per the schedule 1 of Ministry of Environment and Forest notification dated 14/09/2006 http://envfor.nic.in/legis/eia/so1533.pdf and further notification number 3067 from MoEF dated 01/12/2009 http://moef.nic.in/downloads/rules-and-regulations/3067.pdf, 39 activities are required to undertake environmental impact assessment studies. The proposed project activity does not fall under this category and hence not required EIA to be done.</p>
Findings	Refer respective CARs/CLs/FARs
Conclusion	<p>Applus+ Certification confirm that the project participants have not undertaken an environmental impact analysis; as the Host Party does not require that for a wind power generation facility. The project activity does not require an EIA to be conducted and would not lead to any significant environmental impacts including trans-boundary impact.</p> <p>The assessment team is of the opinion that the project complies with environmental regulations in India.</p>

D.7. Local stakeholder consultation

Means of validation	<p>The local stakeholder consultation process has been described in detail, by the PP, in section E of the PDD.</p> <p>Local stakeholder consultation was carried out before publication of PDD at UNFCCC website (from 12/04/2016 – 11/05/2016)</p> <p>The project participant identified the relevant stakeholder like Local village head, villagers, technology suppliers and local vendors as local stakeholders for the project activity. Based on the observations of the validation team during the site visit and as per the definition of 'stakeholder' in the latest version of Glossary of CDM terms, the identification of stakeholders for consultation was found to be appropriate. Thus, the validation team is of the opinion that the relevant stakeholders have been consulted appropriately and adequately.</p> <p>The PP has conducted the stakeholder consultation meeting for the project activity at the project site on 15/10/2014. Identified stakeholders were invited to the Local Stakeholder Consultation Meeting through public notice and personal invitation letters on 25/09/2014.</p> <p>Also the PP submitted minutes of meeting of Local Stakeholder Consultation Meeting conducted on 15/10/2014 and attendance sheet of local stakeholder attended the meeting. The summary of comments is checked for negative comments if any for the project activity. It is found that no negative comments were received for the project activity by local villagers. Thus it is confirmed that local stakeholders were invited to comment on the proposed project activity. This is in line with paragraph 94-95 of VVS for PAs version 02.0 and is accepted.</p>
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	This is further cross-validated from local stakeholder consultation carried out for the project activity during the validation site visit. During the site visit the validation team confirmed that the process of stakeholder consultation was carried out as described in the PDD. This was found to be consistent with the invitation process mentioned in the PDD. Overall, there was agreement among the stakeholders that the proposed project activity would lead to the overall development of the area, mainly by generating employment opportunities and improving the infrastructure leading to an improved life for the villagers.
Findings	Refer respective CARs/CLs/FARs
Conclusion	The validation team confirms that the summary of stakeholders' comments reported in PDD is complete. Stakeholder Consultation Report submitted by the PP is reviewed by the assessment team and confirmed that the queries raised by the local stakeholders have been answered satisfactorily. In view of the verification of all relevant documents of local stakeholder consultation meeting and interactions done the stakeholders available at the time of onsite visit. It concludes that the project participant conducted the stakeholders' consultation process in transparent and unbiased manner.

D.8. Sustainable development co-benefits

Means of validation	Not Applicable
Findings	Not Applicable
Conclusion	Not Applicable

D.9. Approval

Means of validation	<p>The project participant for project activity is M/s EnvironmentFirst Energy Services (P) Limited. The project is unilateral and the Host country for the proposed project activity is India who ratified the Kyoto Protocol on 26/08/2002; thus meets the requirements to participate in the CDM.</p> <p>The DNA of India; "The Ministry of Environment & Forests" issued a LoA/ Bearing letter No. ref. no. 4/7/2016-CC dated 24/05/2017 authorizing M/s EnvironmentFirst Energy Services (P) Limited. as a project participant. Applus+ Certification received the LoA from the project participant directly and considers the provided letter as authentic.</p> <p>The LoA has been checked against the CDM project webpage sponsored by the Ministry of Environment & Forests (http://www.cdmindia.gov.in/), which confirms the approval of this CDM project. Furthermore, after checking the provided LoAs, Applus+ Certification confirms that LoA refer to the precise proposed CDM project activity title in line with the title in the final PDD "Wind Power Project in Madhya Pradesh by EnvironmentFirst-214".</p> <p>LoA also indicate that each participating Party is a Party to the Kyoto Protocol, and that the participation in the "Wind Power Project in Madhya Pradesh by EnvironmentFirst-214" is voluntary. The LoA also confirms that the proposed CDM project activity contributes to the sustainable development of India (host country). Based on the information given in the letter, Applus+ Certification considers the approval as unconditional with respect to these items.</p> <p>LoA has been issued by the Party's DNA - The Ministry of Environment & Forests, India. The LoA do not refer to a specific version of the PDD or validation report.</p>
Findings	Refer respective CARs/CLs/FARs
Conclusion	Applus+ Certification confirms that the requirements of VVS for PAs version 02 §§ 139-146 have been met.

D.10. Authorization

Means of validation	The project is unilateral. The participant of the project activity as M/s EnvironmentFirst Energy Services (P) Limited has been approved by the corresponding Party (India), which is confirmed with the issued LoA. Applus+ Certification confirms that the information regarding to the project participants are listed in section A.3 of the PDD and are consistent with the contact details provided in Appendix 1 of the PDD, and no entities other than those approved as project participants are included in these sections of the PDD.
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Findings	Refer respective CARs/CLs/FARs
Conclusion	Applus+ Certification confirms that the requirements of VVS for PAs version 02 §§ 147-151 have been met.

D.11. Modalities of communication

Means of validation	<p>PP has submitted duly signed Modalities of Communication (MoC) document dated 10/12/2018. The primary authorized signatory from M/s Medicell is Mr. Abhishek Kumar as per the MoC. The personal identity of Mr. Abhishek Kumar checked from the personal account number (PAN) issued by Income tax department, govt. of India.</p> <p>The Corporate Identity of Mr. Abhishek Kumar has been checked from the Written confirmation from the PP that submits to it the MoC statement that all corporate and personal details, including specimen signature are valid and accurate. The assessment team confirms that the signatory and contact details on the MoC are authorized and credible; the MoC is prepared using latest version of form (CDMMOC-FORM)/ and meets the requirement of para 61 (a) of CDM VVS for PAs version 02.</p> <p>The project participant's authorized signatories signing the MOC correspond to the Project participant's authorized signatories included in CDM-MOC-FORM, annex 1.</p>
Findings	Refer respective CARs/CLs/FARs
Conclusion	<p>Applus+ Certification confirms that:</p> <ul style="list-style-type: none"> a) The MoC is correctly filled and duly authorized using the latest MoC template b) The project participants' authorized signatories signing the F-CDM-MOC correspond to the project participants' authorized signatories included in MOC, annex 1. c) The MoC is directly received from the PP. d) The specimen signature, designation and name of the authorized personals are cross checked from the written confirmation from PP /63/ confirming the specimen signature, name and designation of authorized personnel. <p>The modalities of communication statement is correctly filled and including the specimen signature of authorized signatory. The validation of MoC has been done on the basis of paragraph 152-160 of CDM VVS for PAs version 02.0 and validation team confirms that the proposed project activity meets the requirement of CDM VVS for PAs version 02.0.</p>

D.12. Global stakeholder consultation

Means of validation	Project document (PDD) was published on the UNFCCC website and invited comments by affected Parties, stakeholders, and non-governmental organizations during a 30 day period (from 12/04/2016 – 11/05/2016).
Findings	Refer respective CARs/CLs/FARs
Conclusion	Applus+ Certification confirm that no comments were received during the Global stakeholder consultation. Assessment team is of opinion that the changes in the PDD during the validation process do not require the publication of the revised PDD for global stakeholder consultation.

SECTION E. Internal quality control

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As a final step of validation, the final documentation including the validation report has to undergo an internal quality control by the Technical Reviewer. Each report has to be finally approved either by the DOE's Technical Manager or the Deputy. In case one of these two persons is part of the assessment team, the approval can only be given by the person who is not a part of the assessment team. If the documents have been satisfactorily approved, the Request for Issuance is submitted to the CDM-EB along with the relevant documents.

SECTION F. Validation opinion

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Applus+ Certification has been contracted by M/s EnvironmentFirst Energy Services (P) Limited to perform a validation of the proposed CDM project activity entitled "Wind Power Project in Madhya Pradesh by EnvironmentFirst-214".

The Validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism Validation and Verification Standard for project activities (Version 02.0) and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The review of the project design document and the subsequent follow-up interviews have provided us with sufficient evidence to determine the fulfilment of the stated criteria.

In our opinion, the project meets all relevant UNFCCC CDM criteria and all relevant host country criteria. The project correctly applies methodology AMS I.D. version 18. It is demonstrated that the project is not a likely baseline scenario.

By generating renewable energy from wind energy resources, the project results in reduction of CO₂ emissions that are real, measurable and give long-term benefits to the mitigation of climate change. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The total emission reductions from the project are estimated to be 35,329 tCO₂ over a 7 year crediting period, averaging 5,047 tCO₂e annually. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given the underlying assumptions do not change.

The monitoring plan provides for the monitoring of the project's emission reductions. The monitoring arrangements described in the monitoring plan are feasible within the project design and it is confirmed that the project participants are able to implement the monitoring plan.

In conclusion, Applus+ Certification is of the opinion that the project activity "Wind Power Project in Madhya Pradesh by EnvironmentFirst-214" in India, as described in the PDD, version 04 of 03/11/2019, meets all relevant UNFCCC requirements for the CDM and all relevant host party criteria and correctly applies the baseline and monitoring methodology "AMS I.D.", "Grid Connected Renewable Electricity Generation", version 18.

The project will hence be recommended by Applus+ Certification for registration with the UNFCCC.

Appendix 1. Abbreviations

Abbreviations	Full texts
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM PCP	Clean Development Mechanism Project Cycle Procedure
CDM PS	Clean Development Mechanism Project Standard
CDM VVS	Clean Development Mechanism Validation and Verification Standard
CEA	Central Electricity Authority
CER	Certified Emission Reduction
CL	Clarification Request
CMS	Central Monitoring System
DISCOM	Distribution Companies
DNA	Designated National Authority
DOE	Designated Operational Entity
DPR	Detailed Project Report
EB	Executive Board
EF	Emission Factor
EIA	Environment Impact Assessment
EPC	Engineering ,Procurement and Construction
ER	Emission Reductions
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GOI	Government of India
GSHC	Global Stakeholder Consultation
HCA	Host Country Approval
INR	Indian Rupee
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
IT	Income Tax
JMR	Joint Meter Reading
LSHC	Local Stakeholder Consultation
MAT	Minimum Alternate Tax
MD	Managing Director
MoC	Modalities of Communication
MP	Monitoring Plan
MPEB	Madhya Pradesh Electricity Board
MPPKVCL	Madhya Pradesh Pashchim Kshetra Vidyut Vitaran Company Ltd
MPPMCL	Madhya Pradesh Power Management Company Limited
MR	Monitoring Report
MWh	Megawatt hour
NCDMA	National CDM Authority
O&M	Operation and Maintenance
ODA	Official Development Assistance
PDD	Project Design Document
PLF	Plant Load Factor
PP	Project Participant
PPA	Power Purchase Agreement
PRC	Post Registration Changes
PS	Project Standard
REC	Renewable Energy Certificate
SEB	State Electricity Board
SERC	State Electricity Regulatory Commission
SLDC	State Load Dispatch Centre
TA	Technical Area

TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
WEC	Wind Energy Converter
WTG	Wind Turbine Generator

Appendix 2. Competence of team members and technical reviewers

According to the sectoral scope / technical area and experience in the sectoral or national business environment, Applus+ Certification has composed a project assessment team in accordance with the appointment rules in the internal Quality Management System of Applus+ Certification.

The composition of audit team shall be approved by the Applus+ Certification ensuring that the required skills are covered by the team.

The four qualification levels for team members that are assigned by formal appointment rules are as presented below:

- Lead Auditor (LA).
- Auditor (A) / Auditor in Training (AiT).
- Technical Expert (TE).
- Technical Reviewer (TR).

The sectoral scope / technical area knowledge linked to the applied methodology/ies shall be covered by the assessment team.

Name	Qualification	Coverage of scope	Coverage of technical Area	Financial aspect	Host country Experience	Attendance to the On-Site Assessment
Vivek Kumar Ahirwar	Lead Auditor (LA)	Yes (1)	Yes (1.2)	Yes	Yes	Yes
Vivek Kumar Ahirwar	Technical Expert (TE)	Yes (1)	Yes (1.2)	Yes	Yes	Yes
Ajay Singh Thakur	Auditor (A)	Yes (1)	Yes (1.2)	Yes	Yes	Yes
Simon Shen	Technical Reviewer (TR)	Yes (1)	Yes (1.2)	Yes	N/A	N/A

The curricula vitae of the DOE's team members are provided below:

Vivek Kumar Ahirwar is a BEE-Certified Energy Auditor by Govt of India with over eight years of relevant experience in energy efficiency, energy audit, thermal and electrical energy generation technology from renewable source and energy conservation in energy intensive industries, designated consumers and commercial buildings, implementation of energy conservation building codes, research, process and green building projects. He is a certified lead auditor for ISO 14001 EMS and 14064. He has experience under various categories of projects stating from renewable to waste to supercritical projects and WCD. He has successfully audited more than 100 GHG (CDM/VCS/GS) projects in different states across the India. He has done Mater in Technology (Energy Management) from a premier institute, School of Energy& Environmental Studies, DAVV, Indore (M.P.), India and Bachelor of Engineering (Mechanical Engineering) from Govt. Engineering college, Rewa, RGPV, India.

Ajay Singh Thakur is a certified lead auditor for ISO 14001 EMS LA. He has more than five years of work experience across Climate Change, Environmental Management & Monitoring, Health & Safety Management, and Statutory Compliance. He was involved in more than 50 CDM validation and verifications activities and Gold Standard, VER projects as a team leader/technical reviewer / validator / verifier covering the sectoral scope 1 technical area 1.2. he has experience in design and development of Environment Health & Safety Management System (EHS), ISO 14001:2004 (EMS), OHSAS 18001:2007, ISO 14064:2006, ISO 50001:2011 (EnMS) and ISO 9001:2008 (QMS). Also providing trainings on EHS (ISO 14001:2004 (EMS) & OHSAS 18001:2007) to various industries.

Meng (Simon) Shen (Master Degree in Thermal Energy Engineering, Bachelor Degree in Environmental Engineering) is a Lead Auditor appointed by Applus+ Certification for the GHG project assessment. He is based in Shanghai. He has several years of work experience in environmental protection field. Before he joined Applus+ Certification, he had been worked for TÜV SÜD as a GHG Validator/Verifier and ISO 9001/14001 Lead Auditor for 5.5 years.

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	PP	Project Design Document	Version 01, dated 11/04/2016	PP
			Version 02, dated 01/06/2018	
			Version 03, dated 19/02/2019	
			Version 04, dated 03/11/2019 (Final)	
2	PP	Investment Analysis (Project IRR and Benchmark Calculation) Sheets	Version 01, dated 11/04/2016	PP
			Version 02, dated 19/02/2019 (Final)	
3	PP	Emission reduction calculation spread sheet	Version 01, dated 01/06/2018	PP
			Version 02, dated 19/02/2019 (Final)	
4	Government of India, Ministry of Environment, Forest and Climate Change	Host Country Letter of Approval	Ref : 4/7/2016-CC Dated: 24/05/2017	PP
5	PP	Modalities of Communication (MoC)	10/12/2018	PP
6	PP	Operational and Maintenance agreement between Medicell and Suzlon for the project	2016	PP
7	Suzlon	Offer Letter from Suzlon to Medicell	2014	PP
8	Other	International Standard IEC 61400-1 (Wind Turbines) Part 1: Design Requirements for wind turbines	-	Other
9	CEA	CO2 baseline database published (in Dec 2016) by Central Electricity Authority, Govt. Of India, available at http://www.cea.nic.in/tpeandce.html	version 10	Other
10	PP	Board Resolution by EUL	09/01/2014 and 08/12/2013	PP
11	MPERC	MPERC tariff order	2014	Other
12	PP	Intimation letter to UNFCCC notifying their intention to seek CDM status for the project activity	2014	PP
13	PP	Stakeholder meeting notice and invitation letters	25/09/2014	PP
14	PP	Minutes of meeting of Local Stakeholder's consultation	15/10/2014	PP
15	PP	Attendance sheet of Local Stakeholder Consultation meeting	15/10/2014	PP
16	PP	Covering letter from EUL to NCDMA	15/10/2014	PP

17	CDM EB	Tool to calculate the emission factor for an electricity system	Version 07	Other
18	CDM EB	Tool for the demonstration and assessment of additionality	Version 12.0.0	Other
19	CDM EB	Methodological tool: Investment analysis	Version 9.0	Other
20	CDM EB	Approved methodology ACM0002 "Grid Connected Renewable Electricity Generation"	Version 18	Other
21	CDM EB	Glossary of CDM Terms	-	Other
22	CDM EB	Guidelines for the reporting and validation of plant load factors	Version 01 annex 11 of EB 48 dated 17/07/2009	Other
23	IREDA	Operational guidelines for Implementation of "Generation Based Incentive" for Grid Connected Wind Power Projects by Indian Renewable Energy Development Agency Ltd. (IREDA) – To be read with the Scheme for implementation of GBI issued by MNRE dated 04.09.2013; revised on 22/04/2015	https://mnre.gov.in/filemanager/gridwind/gbischeme.Pdf	Other
24	GOI	Indian Company Act	http://taxguru.in/company-law/rates-of-depreciation-under-the-companies-act-as-mentioned-in-schedule-xiv.html	Other
25	GOI	Income Tax of India	https://www.incometaxindia.gov.in/charts%20%20tables/depreciation%20rates.htm	Other
26	RBI	Results of 43 rd Round (Q3:2016-17) of Survey of Professional Forecasters on Macroeconomic Indicators	Dated 07/12/2016	Other
27	Central Electricity Authority	Notification for regulating the installation and operation of meters	http://www.cea.nic.in/reports/regulation/meter_reg.pdf	Other
28	PP	Declaration from the PP for no ODA	Dated 2018	Other
29	PP	Purchase Order raised by the PP	Dated 2016	PP
30	GOI	Electricity Act 2003	Dated 26/05/2003	Other
31	UNFCCC	Copy of e-mail acknowledgement received for Project from UNFCCC	May 2014	PP
32	Income tax Department, Govt. of India	Personal account number (PAN) of the PP	-	PP
33	MPPKVVCL	Commissioning certificates of the WTGs	-	PP
34	MPPMCL	Power Purchase Agreements signed by the PP with MPPMCL	-	PP
35	CDM EB	CDM VVS for PAs	Version 02.0	Other
36	CDM EB	CDM PS for PAs	Version 02.0	Other
37	CDM EB	CDM PCP for PAs	Version 02.0	Other

Appendix 4. Clarification requests, corrective action requests and forward action requests

Table 1. CLs from this validation

CL ID	01	Section no.	D.1	Date: 23/06/2016
Description of CL				
<ol style="list-style-type: none"> 1. The Project Participant is requested to provide deceleration for no public funding involve in the CDM project activity. 2. The Project Participant is requested to provide deceleration for proposed CDM project activity is not a CPA that has been excluded from a registered CDM PoA as a result of erroneous inclusion of CPAs. Also, same need to confirm in A.1 of the PDD. 				
Project participant response				Date: 01/06/2018
<ol style="list-style-type: none"> 1. A declaration letter for “no public funding involved in the CDM Project activity” has been submitted by the Project participant. 2. The deceleration letter also confirms that the proposed CDM project activity is not a CPA that has been excluded from a registered CDM PoA as a result of erroneous inclusion of CPAs. The same has been incorporated in section A.1 of the PDD. 				
Documentation provided by project participant				
<ol style="list-style-type: none"> 1. Declaration letter – for No Funding, and for not a CPA 2. Revised Version of PDD. 				
DOE assessment				Date: 18/01/2019
The PP has submitted requested documents, hence CL closed.				

CL ID	02	Section no.	D.2	Date: 23/06/2016
Description of CAR				
The PP is requested to provide the date of commissioning and confirm it with appropriate document.				
Project participant response				Date: 01/06/2018
Commissioning certificates has been submitted to confirm the dates of commissioning.				
Documentation provided by project participant				
Commissioning Certificates				
DOE assessment				Date: 18/01/2018
The PP has submitted requested documents, hence CL closed.				

CL ID	03	Section no.	Prior Consideration form	Date: 04/11/2019
Description of CAR				
The PP is requested to clarify why project technology name is solar in Prior Consideration form whereas in project details it's wind project. Confirm it with appropriate document.				
Project participant response				Date: 16/11/2019
By mistake PP has mentioned Solar project in project title, DOE can refer project co-ordinates and project description which clarifies that project activity is a wind power project. DOE can also check GPS co-ordinates of WTGs.				
Documentation provided by project participant				
Kmz file of WTG GPS co-ordinate.				
DOE assessment				Date: 25/11/2019

PP has submitted prior consideration form on 12th May 2014 and project start date was 09/01/2014 which fulfil requirement of PDD publication within 180 days of project start date. The PP has sent prior consideration with project name "1.25 MW Solar Power Project by Enviromentfirst Energy Services (P) Limited" whereas geographical location and capacity was mentioned for Wind Power project. Assessment team verify GPS co-ordinates of WTGs mentioned in prior consideration form which is inline with current project activity.

CDM: Prior Consideration of the CDM

Your location: Home > Project Search > Prior Consideration

Prior Consideration of the CDM

Search Criteria

Date Received from: to: * format DD/MM/YYYY

Host Party: - no selection -

Project Title: 1.25 Solar Power

Search Reset Query

1

Displaying 1-2 of 2 notifications.

Project Title	Entity Name	Host Party	Date Received
1.25 MW Solar Power Project by Environmentfirst Energy Services (P) Limited	Environmentfirst Energy Services (P) Limited	India	12 May 2014
Solar power plant of 1.25 Mega watt capacity	M/s Centex Fabrics Export Unit	India	03 Apr 2013

Activate Windows
Go to Settings to activate Windows.

The Assessment team checked prior consideration form, UNFCCC confirmation email and kmz file of WTGs GPS co-ordinates which clarifies that it's a Wind power project prior consideration form. Which is acceptable. Hence CL3 closed

Table 2. CARs from this validation

CAR ID	01	Section no.	D.2.	Date:	23/06/2016
Description of CAR					
The PP is requested to submit a letter of approval provided by the DNA; National CDM Authority (NCDMA) Ministry of Environment & Forests for the Party involved in the proposed Project Activity. Also, the PP is requested to updated section F of the PDD					
Project participant response					Date: 01/06/2018
The Letter of approval by the National CDM Authority, has been submitted to the DOE. And appropriate changes has been made in section F of the PDD accordingly.					
Documentation provided by project participant					
1. Host Country Approval Letter. 2. Revised Version of PDD.					
DOE assessment					Date: 18/01/2019
The PP has submitted requested documents , hence CAR#1 closed.					

CAR ID	02	Section no.	D.5.	Date:	23/06/2016
Description of CAR					
The PP is requested to submit Modalities of Communication (MoC) statement for the project activity.					
Project participant response					Date: 01/06/2018
The Modalities of Communication statement for the project activity, has been submitted to the DOE.					
Documentation provided by project participant					
Modalities of Communication					
DOE assessment					Date: 18/01/2019
The PP has submitted requested documents, hence CAR#2 closed.					

CAR ID	03	Section no.	D.7.	Date:	20/07/2015
Description of CAR					

<ol style="list-style-type: none"> 1. Latest available version for the SSC PDD form available in UNFCCC website is version 7. The PP is requested to use the latest available version. 2. As per instruction for filling out PDD, the description for the physical/geographical location of the project activity should not exceed one page. 3. Provide supporting document to confirm the geographic co-ordinates. 4. The PP is requested to provide document to verify the technical specification provided under A.3 of the PDD. 5. The PP is requested to clarify why Southern grid is mentioned on page 15 of the PDD. 	
Project participant response	Date: 01.06.2018
<ol style="list-style-type: none"> 1. The latest available version for the SSC PDD is "CDM-PDD-FORM Version 10.1". The Project Participant has now switched to the new and latest version available. 2. As per instruction for filling out PDD, the description for the physical/geographical location of the project activity has been described within one page, and update in the revised version of PDD. 3. Geographic co-ordinates has been confirmed during site-visit, and a snap-shot of google-earth has been submitted to the DOE. 4. A technical-specification document has been received by the technology provider, and the same has been submitted to the DOE. 5. The reference of Southern Grid has been removed from the PDD, as the proposed project activity is coming under NEWNE grid. PDD has now been made consistent with the same. 	
Documentation provided by project participant	
<ol style="list-style-type: none"> 1. Revised version of PDD. 2. Google-earth snap-shot. 3. Technical Specification document 	
DOE assessment	Date: 18/01/2019
The PP has submitted requested documents, hence CAR#3 closed.	

CAR ID	04	Section no.	D.8.1.	Date: 23/06/2016
Description of CAR				
<ol style="list-style-type: none"> 1. Latest available version for the tool to calculate the emission factor for an electricity system is version 05. The PP is requested to clarify why the older version is used. 2. CEA link is not working throughout the PDD. 3. ER calculation sheet is not provided by the PP. 				
Project participant response				Date: 01/06/2018
<ol style="list-style-type: none"> 1. Latest available version for the tool to calculate the emission factor for an electricity system is version 07, and the PP has updated the PDD now, with the latest available tool. 2. CEA database link has been updated throughout the PDD. 3. ER Calculation sheet has now been submitted to the DOE. 				
Documentation provided by project participant				
<ol style="list-style-type: none"> 1. Revised version of PDD 2. ER-Calculation Sheet. 				
DOE assessment				Date: 18/01/2019
The PP has submitted requested documents, hence CAR#4 closed.				

CAR ID	05	Section no.	D.8.6.	Date: 23/06/2016
Description of CAR				
<ol style="list-style-type: none"> 1. Latest available version for the demonstration of additionality is version 10. The PP is requested to clarify why the older version is used. 2. The Project Participant is requested to provide all input data used in calculation of IRR along with details of all references as same is not mentioned in the section B.5 of the PDD, also provide supporting document for each value. 3. IRR values are not matching with respective IRR calculation sheet please clarify? Also benchmark value is not correctly mentioned in the PDD on page 14. 4. The PP is requested to explain why threshold limit is not possible to achieve by the PP. Please clarify? 				
Project participant response				Date: 01/06/2018

<ol style="list-style-type: none"> 1. The latest available version for the demonstration of additionality has now been referred in the revised version of the PDD. 2. The revised-version of PDD incorporates all the input-data for the calculation of IRR along with references. 3. IRR values as well as Benchmark values has been made consistent throughout the PDD; as per IRR-calculation sheet 4. The wind-Turbines have been installed, and State-Board permissions along with Power Purchase Agreement have been in place for 3MW capacity only. Hence, the proposed project activity will remain of maximum output capacity of 3 MW only, during the whole crediting period. 	
Documentation provided by project participant	
1. Revised version of PDD.	
DOE assessment	Date: 18/11/2019
The PP is requested to clarify the followings:	
<ol style="list-style-type: none"> 1. The PDD shall list all relevant assumptions and parameters used in the investment analysis. The PDD indicates that the IRR values are 9.79% for WTG1 and 5.23% for WTG2. However, these values are not consistent with the values calculated as per the submitted spreadsheets (9.24% and 8.58 %) or used in the sensitivity analysis (9.79% and 6.18%) 2. The PP is requested to justify the suitability of the financial indicator selected by the project participants and conduct a thorough assessment of all parameters and assumptions used in calculating such financial indicators (VVS v02 para 99 (a)) The validation report confirms that the IRR of the included projects are 9.79 and 5.23 %. However, these values are not consistent with the values calculated as per the submitted spreadsheets (9.24% and 8.58 %) or used in the sensitivity analysis (9.79% and 6.18%). 	
Project participant response	Date: 19/11/2019
<ol style="list-style-type: none"> 1. All assumption and parameter used for investment analysis included in revised PDD and IRR value are corrected accordingly 2. The IRR sheet and sensitivity analysis value not corrected. 	
Documentation provided by project participant	
<ol style="list-style-type: none"> 1. IRR sheets 2. Revised PDD 	
DOE assessment	Date: 25/11/2019
The PP has submitted requested documents with appropriate corrections. Assessment team confirm that PP has corrected IRR and sensitivity analysis value consistent with spreadsheet, hence CAR#5 closed.	

CAR ID	06	Section no.	D.8.8.	Date: 23/06/2016
Description of CAR				
<ol style="list-style-type: none"> 1. The PP is requested to describe how the compliance of the monitoring plan with the applied methodology(ies) as per VVS. The PDD (pg.7) has provided an indicative metering diagram which shows that common metering (i.e. project and non-project WTGs) will be done at the substation. The monitoring plan has listed only single parameter (EG facility,). However, during site visit was observed that the parameter are calculated based on the apportioning procedure which indicates that the involvement of some other parameters for calculating the EGPJ,facility,y. The PP is requested to provide a monitoring plan which shows a clear description of all the monitored parameters and how they will be monitored. In doing so, please include a metering diagram which shows all the metering points. 2. The PP is requested to use an estimated value in section valued applied of parameter EG facility, mentioned in section B.7.1 of the PDD 3. It is not exclusively mentioned who is responsible for data collection and archiving. The PP is requested to clarify the same. 4. As per instruction for filling out the PDD form, the PP is requested to include whether it is first, second or third crediting period in section C.2.1 				
Project participant response				Date: 01/06/2018

1. The revised-version of PDD incorporates all the monitoring parameters, along with their measuring procedures. A metering diagram has also been incorporated in the PDD.
2. The revised-version of PDD incorporates an estimated value in section B.7.1 of the PDD, as suggested.
3. The revised-version of PDD has incorporated the responsibility of data-collection and archiving.
4. It is the first crediting-period, and the section C.3.1 of the PDD has been revised accordingly.

Documentation provided by project participant

Revised Version of PDD.

DOE assessment**Date:** 18/01/2019

The PP has submitted requested documents, hence CAR#6 closed.

CAR ID	07	Section no.	E.1.	Date: 23/06/2016
Description of CAR				
The PP is requested to provide supporting document for local stakeholder consultation as invitation / public notice, Personal invitation letters, Feedback forms, attendance list.				
Project participant response				Date: 01/06/2018
PP has submitted the supporting documents for local stakeholders' consultation to the validating DOE.				
Documentation provided by project participant				
Local Stakeholder Consultation Documents such as Invitation, attendance list, and minutes of meeting.				
DOE assessment				Date: 18/01/2019
The PP has submitted requested documents, hence CAR#7 closed.				

CAR ID	08	Section no.	E.1.	Date: 19/02/2019
Description of CAR				
The PP is requested to update the PDD as per latest guidelines for "Additionality Tool", "Investment Tool" and "emission reduction factor tool".				
Project participant response				Date: 19/02/2019
The PDD and supporting documents are updated as per latest tools.				
Documentation provided by project participant				
PDD version 03 IRR sheets ER sheet				
DOE assessment				Date: 20/02/2019
The PP has submitted corrected documents, hence CAR#8 closed.				

Table 3. FARs from this validation

FAR ID	xx	Section no.		Date: DD/MM/YYYY
Description of FAR				
<i>Not applicable</i>				
Project participant response				Date: DD/MM/YYYY
<i>Not applicable</i>				
Documentation provided by project participant				
<i>Not applicable</i>				
DOE assessment				Date: DD/MM/YYYY
<i>Not applicable</i>				

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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
04.0	31 May 2019	Revision to: <ul style="list-style-type: none"> • Ensure consistency with version 02.0 of the “CDM validation and verification standard for project activities” (CDM-EB93-A05-STAN); • Make editorial improvements.
03.1	11 January 2018	Editorial revision to remove an erroneously included instruction paragraph in section D.2 (Identification of project type).
03.0	31 October 2017	Revision to align with the requirements of the “CDM validation and verification standard for project activities” (version 01.0).
02.0	22 July 2016	EB 90, Annex 3 Revision to include provisions related to automatically additional project activities.
01.0	23 March 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Registration Keywords: project activities, validation report		