



# VALIDATION REPORT

## VISH WIND INFRASTRUCTURE LLP

### VALIDATION OF THE RENEWABLE ENERGY WIND POWER PROJECT IN RAJASTHAN

REPORT NO. INDIA-VAL/366.49/2012  
REVISION No. 04

BUREAU VERITAS CERTIFICATION

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## VALIDATION REPORT

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Client: <b>Vish Wind Infrastructure LLP</b>	Client ref.: <b>Mr Yogesh Mehra</b>
<p>Summary:</p> <p>Bureau Veritas Certification has made the validation of the "Renewable Energy Wind Power Project in Rajasthan" project of Vish Wind Infrastructure LLP located in Ugawa, Korwa &amp; Kita villages of Jaiselmer District and Salodi and Jelu villages of Jodhpur District at Rajasthan on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.</p> <p>The validation scope is defined as an independent and objective review of the project design document, the project's baseline study, monitoring plan and other relevant documents, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final validation report and opinion. The overall validation, from Contract Review to Validation Report &amp; Opinion, was conducted using Bureau Veritas Certification internal procedures.</p> <p>The first output of the validation process is a list of Clarification and Corrective Actions Requests (CL and CAR), presented in Appendix A. Taking into account this output, the project proponent revised its project design document.</p> <p>In summary, it is Bureau Veritas Certification's opinion that the project correctly applies the baseline and monitoring methodology ACM 0002, Version 12.1.0 and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.</p>	

Report No.: INDIA-val/366.49/2012	Subject Group: CDM
Project title: Renewable Energy Wind Power Project in Rajasthan	
Work carried out by: R S Premkumar – Team Leader Prabir Sarkar – Team Member Sushil Budhia Associates – Financial Experts Karthikeyan & Jayaram Associates – Financial Expert	
Internal Technical Review carried out by: Sanjay S Patankar – Internal Reviewer 	
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Work approved by :

Mr Flavio Gomes

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## Abbreviations

AVVNL	Ajmer Vidyut Vitran Nigam Limited
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEA	Central Electricity Authority
CER	Certified Emission Reductions
CL	Clarification Request
CO <sub>2</sub>	Carbon Dioxide
DISCOM	Distribution Company
DOE	Designated Operational Entity
GHG	Green House Gas(es)
I	Interview
IETA	International Emissions Trading Association
INR	Indian Rupees
JMR	Joint Meter Reading
MoV	Means of Verification
NEWNE	North East West North-East
NGO	Non Government Organization
O&M	Operation and Maintenance
PCF	Prototype Carbon Fund
PDD	Project Design Document
RERC	Rajasthan Energy Regulatory Commission
RVVPNL	Rajasthan Vidyut Vitran Prasar Nigam Limited
UNFCCC	United Nations Framework Convention for Climate Change
VVM	Validation and Verification Manual
WTG	Wind Turbine Generator
PPA	Power Purchase Agreement



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## 1 INTRODUCTION

Vish Wind Infrastructure LLP has commissioned Bureau Veritas Certification to validate its CDM project 'Renewable Energy Wind Power Project in Rajasthan' (hereafter called "the project") located at Ugawa, Korwa & Kita villages of Jaisalmer District and Salodi and Jelu villages of Jodhpur District at Rajasthan, India.

This report summarizes the findings of the validation of the project, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

### 1.1 Objective

The validation serves as project design verification and is a requirement of all projects. The validation is an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design, as documented, is sound and reasonable, and meet the stated requirements and identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

### 1.2 Scope

The validation scope is defined as an independent and objective review of the project design document, the project's 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.

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.

### 1.3 Validation team

The validation team consists of the following personnel:

FUNCTION	NAME	CODE HOLDER*	TASK PERFORMED
Lead Verifier	R S Premkumar.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DR <input checked="" type="checkbox"/> SV <input type="checkbox"/> RI
Verifier	Prabir Sarkar	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI
Technical	NA	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI



<b>Specialist</b>			
<b>Financial Specialist</b>	Sushil Budhia Associates	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI
<b>Financial Specialist</b>	Karthikeyan and Jayaram Associates	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI
<b>Internal Technical Reviewer (ITR)</b>	Sanjay S Patankar	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI
<b>Specialist supporting ITR</b>	Not Applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI
<b>Report Approval</b>	Flavio Gomes	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> DR <input type="checkbox"/> SV <input checked="" type="checkbox"/> RI

\* DR – Document Review, SV – Site Visit, RI – Report Issuance

## 2 METHODOLOGY

The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a validation protocol was customized for the project, according to the version 01.2 of the Clean Development Mechanism Validation and Verification Manual, issued by the Executive Board at its 55<sup>th</sup> meeting on 30/07/2010. The protocol shows, in a transparent manner, criteria (requirements), means of validation and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organizes, details and clarifies the requirements a CDM project is expected to meet;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

The completed validation protocol is enclosed in Appendix A to this report.

### 2.1 Review of Documents

The Project Design Document (PDD) submitted by Vish Wind Infrastructure LLP and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for Completing the Project Design Document (CDM-PDD), Approved methodology, Kyoto Protocol, Clarifications on Validation Requirements to be Checked by a Designated Operational Entity were reviewed.

To address Bureau Veritas Certification corrective action and clarification requests, Vish Wind Infrastructure LLP revised the PDD and resubmitted it in November 2011.



The validation findings presented in this report relate to the project as described in the PDD version 5.0.

## **2.2 Follow-up Interviews**

On 10/02/2011, 11/02/2011 & 12/02/2011, Bureau Veritas Certification conducted the site visit and performed interviews with project stakeholders to confirm selected information and to discuss issues identified in the preliminary document review. Representatives of Vish Wind Infrastructure LLP were interviewed (see References). The main topics of the interviews are summarized in Table 1.



**Table 1 Interview topics**

Interviewed organization	Interview topics
Vish Wind Infrastructure LLP	<ul style="list-style-type: none"> <li>➤ CDM Consideration</li> <li>➤ Methodology applicability</li> <li>➤ Baseline determination</li> <li>➤ Additionality</li> <li>➤ Local stakeholder consultation and resolution of their concerns</li> <li>➤ Supporting data and documentation</li> <li>➤ Resolution of CAR's and CL's</li> </ul>
Local Stakeholder	<ul style="list-style-type: none"> <li>➤ Views and concerns about the Project Activity</li> <li>➤ Confirmation of the local stakeholder meeting conducted by the Project Participant.</li> </ul>
PriceWater House Coopers (Project Consultant)	<ul style="list-style-type: none"> <li>➤ Methodology application</li> <li>➤ Baseline determination &amp; emission factor</li> <li>➤ Additionality</li> <li>➤ Monitoring Plan</li> <li>➤ GHG Calculations</li> <li>➤ Supporting data, evidences and documentation</li> <li>➤ Resolution of CAR's and CL's</li> </ul>
Enercon (India) Limited (O&M of the wind mill site)	<ul style="list-style-type: none"> <li>➤ Monitoring System at site</li> <li>➤ Metering system at site</li> </ul>

## 2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the project design.

Corrective Action Requests (CAR) is issued, where:



- (a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
- (b) The CDM requirements have not been met;
- (c) There is a risk that emission reductions cannot be monitored or calculated.

The validation team may also use the term Clarification Request (CL), if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol in Appendix A.

## **2.4 Internal Technical Review**

The validation report underwent a Internal Technical Review (ITR) before requesting registration of the project activity.

The ITR is an independent process performed to examine thoroughly that the process of validation has been carried out in conformance with the requirements of the validation scheme as well as internal Bureau Veritas Certification procedures.

The Lead Verifier provides a copy of the validation report to the reviewer, including any necessary validation documentation. The reviewer reviews the submitted documentation for conformance with the validation scheme. This will be a comprehensive review of all documentation generated during the validation process.

When performing an Internal Technical Review, the reviewer ensures that:

The validation activity has been performed by the team by exercising utmost diligence and complete adherence to the CDM rules and requirements.

The review encompasses all aspects related to the project which includes project design, baseline, additionality, monitoring plans and emission reduction calculations, internal quality assurance systems of the project participant as well as the project activity, review of the stakeholder comments and responses, closure of CARs, CLs and FARs during the validation exercise, review of sample documents.

The reviewer compiles clarification questions for the Lead Verifier and Validation Team and discusses these matters with Lead Verifier.



After the agreement of the responses on the 'Clarification Request' from the Lead Verifier as well as the PP(s) the finalized validation report is accepted for further processing such as uploading on the UNFCCC webpage.

### 3 VALIDATION CONCLUSIONS

In the following sections, the conclusions of the validation are stated.

The findings from the desk review of the original project design documents and the findings from interviews during the follow up visit are described in the Validation Protocol in Appendix A.

The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in Appendix A. The validation of the Project resulted in 10 Corrective Action Requests (CARs) and 15 Clarification Requests (CLs).

The CARs and CLs were closed based on adequate responses from the Project Participant(s) which meet the applicable requirements. They have been reassessed before their formal acceptance and closure.

The number between brackets at the end of each section correspond to the VVM paragraph

#### 3.1 Approval (49-50)

India is the only party involved in the project activity at this stage and is the host party. Project participants, M/s Vish Wind Infrastructure LLP have obtained approval from DNA of India and have provided a copy of the DNA approval letter (Ref /3/) to the validation team. The letter of approval clearly states that India has ratified the Kyoto Protocol and the approval is for voluntary participation in CDM project activity. The DNA approval mentions the project title as mentioned in PDD. Also, the letter of approval mentions that project contributes to sustainable development. The letter is unconditional with respect to party to the Kyoto Protocol, voluntary participation, contribution to sustainable development and title of project activity. The HCA approval refers to same project activity title as stated in the PDD. The validation team confirms that this letter is in accordance with paragraphs 45 – 48 of VVM version 1.2.

Bureau Veritas Certification received this letter from the project participant and does not doubt its authenticity since the validation team verified the original copy of the HCA approval.



The title and contents of the letter of approval refer to the precise proposed CDM project activity title in the PDD being submitted for registration.

### **3.2 Participation (54)**

The participation for the project participant has been approved by India, which is a Party of the Kyoto Protocol. This was checked from UNFCCC website <http://maindb.unfccc.int/public/country.pl?country=IN>.

The participation is approved by DNA of India and is accepted. The participation for project participant has been approved by a Party of the Kyoto Protocol. The validation team concluded this by reviewing the original Host Country Approval (HCA) (Ref /3/) which describes the participation of M/s Vish Wind Infrastructure LLP being approved by the Government of India, which is a party of the Kyoto Protocol.

The project was webhosted on the UNFCCC for global stakeholder's comments as per CDM requirements. The project was webhosted from 05<sup>th</sup> January 2011 to 03<sup>rd</sup> February 2011. Comments were received from 2 global stakeholders for the project activity, which has been discussed in Appendix B of this report.

### **3.3 Project design document (57)**

The validation team confirms that the PDD complies with the latest forms and guidance documents for completion of PDD. The PDD is as per Guidelines for Completing the Project Design Document (CDM-PDD) (EB 41 Annex 12)

### **3.4 Changes in the project activity**

The final PDD, Version 5.0 has the following changes with respect to version 1.0 which was webhosted.

1. Description in section A.2 has been updated to provide information on the prior experience of the Project Participant in renewable energy projects.
2. Description of names of villages and the longitude value for some of the WTG has been corrected.
3. The CER estimates have been revised.
4. IRR calculations have been revised in order to comply with the latest EB guidelines.
5. The chronology of events with respect to the project implementation and the CDM implementation steps has been added.
6. Monitoring plan has been revised to transparently describe the process of monitoring at site.



CAR 1 was raised since the names of the villages wherein the project activity wind turbines are located in Section A.4.1.3 & Section A.4.1.4 did not match with each other. Also the longitude values of WTG, indicated in Sections A.4.1.4 & in Appendix 1 of the webhosted PDD did not match with each other. The project participant has corrected the names of the villages and also the longitude value for the WTG which were not matching with each other in the revised PDD and hence CAR 1 was closed.

The validation team hereby confirms that the PDD complies with the latest PDD format (Ref /49/) and PDD Completeness Guidelines (Ref /48/) for completion of PDD.

### **3.5 Project description (64)**

The process undertaken to validate the accuracy and completeness of the project description is as follows;

The project activity involves the installation of 37 numbers Wind Turbine Generator's (WTG) of capacity 0.8 MW each, of which 17 WTG are in Jaisalmer District and remaining 20 WTG are in Jodhpur district, State of Rajasthan, India. The total capacity of the project activity is 29.6 MW and the entire power generated by the project activity will be exported to the NEWNE grid with a firm power purchase agreement with the respective DISCOM (Ref /4/ to /8/). All the 37 wind machines of the project activity are owned by M/s Vish Wind Infrastructure LLP (VWIL)

The project activity generates electricity using wind energy, which does not result in any greenhouse gas (GHG) emissions. Thus, this project activity will lead to a reduction in GHG emissions that would otherwise have occurred when using electricity generated from conventional fossil fuel based sources in the western regional grid.

The project is expected to be in line with host-country requirements because it –

- is approved for voluntary participation by DNA of India
- provides direct and indirect employment to the local people
- provides electricity to the deficient electricity grid of western region
- leads to reduced fossil fuel consumption
- does not release pollutants like SPM, CO<sub>2</sub>, CO, etc.

The validation team validated the accuracy of the project description through a combination of steps consisting of review of the purchase orders (Ref /9/ to /20/) related to the project activity, commissioning certificates for all the WTG (Ref /21/ to /26/), site visit and interview of



the project participant and their representatives. The confirmation that the electricity generated from the project activity will only be exported to the state grid is available through the PPA (Ref /4/ to /8/).

Based on site visit, document review and interviews conducted, the validation team hereby confirms that the project activity description in revised PDD (Ref /2/) is accurate and complete in all respects.

### **3.6 Baseline and monitoring methodology**

#### **3.6.1 General requirement (76-77)**

The steps taken to assess the relevant information contained in the PDD against each applicability condition are described below.

The proposed Project Activity “Renewable Energy Wind Power Project in Rajasthan” uses the approved methodology ACM 0002, Version 12.1.0 (Ref /50/).

1. The purchase orders (Ref /9/ to /20/) for the windmills and physical verification at site indicate that the project activity involves installation of windmill alone and therefore is a renewable energy project. The purchase orders also indicate that the windmills are new and are not transferred. Further the proposed project activity is the installation of a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity and is therefore classified as Greenfield project.
2. The Grid connectivity was verified through PPA (Ref /4/ to /8/), samples of records of monthly generation record (also known as the Joint Meter Reading) (Ref /65/) generation break-up sheets (Ref /66/) and physical connection to the grid at site. As per CEA data (Ref /53/), Rajasthan falls under the NEWNE grid, the geographic and system boundaries of which are clearly identified and information on the characteristics of the grid is available.
3. Physical verification at site indicate that it is not an add up of a renewable and non-renewable component and only windmills are involved in the project activity and the capacity is 29.6 MW, which falls above the threshold limit of 15 MW and hence classifies as large scale. The project falls under Type I Renewable energy projects, Electricity generation for a system.
4. The project activity does not involve switching from fossil fuels to renewable energy sources at the project activity site nor is a biomass fired power plant, but is only a windmill based electricity generation project.
5. The project activity is not a hydro power plant and hence the applicability condition of power density less than 4 W/m<sup>2</sup> is not applicable.



The validation team therefore agrees that the project activity meets all the applicability conditions of the selected approved methodology ACM 0002, version 12.1.0 (Ref /50/).

CL 9 was raised by the validation team since the justification of the applicability condition for the tools was not discussed transparently in the webhosted PDD. The Project Participant corrected the PDD and the revised PDD describes the justification for applicability condition of the applied tools. Hence the CL was closed.

The validation team hereby confirms that the selected baseline and monitoring methodology, ACM 0002, Version 12.1.0 is previously approved by the CDM Executive Board, and is applicable to the project activity, which complies with all the applicability conditions therein.

The validation team hereby confirms that, as a result of the implementation of the proposed CDM project activity, there are no greenhouse gas emissions occurring within the proposed CDM project activity boundary, which are expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology.

### 3.6.2 Project boundary (80)

The validation team validated the project boundary by:

a) The spatial extent of the project boundary is assessed through the description in the PDD and the grid structure in India as known from the official data available from the Central Electricity Authority (CEA) (Ref /53/). The project activity boundary therefore includes the project activity WTG and all power plants connected physically to the NEWNE electricity grid of India that the CDM project power plant is connected to.

The consideration of only CO<sub>2</sub> gas for the baseline emissions is conservative and in line with the methodology and hence appropriate. The electricity imported by the project activity is accounted in the net electricity exported by the project activity,  $EG_{\text{facility},y}$ . There are no other sources of project emissions. Hence, in line with the applied methodology, project participant has considered project emissions as zero for renewable energy projects. Further, it is also confirmed through the verification of purchase orders for the WTG (Ref /9/ to /20/) and the commissioning certificates of the WTG (Ref /21/ to /26/) that the equipments of the Project Activity are new and the project activity does not involve any transfer of equipment from or to the project activity and thus there is no leakage accountable to the project activity.

The project design is sound and the geographical (Ugawa, Korwa & Kita villages in Jaiselmer District and Salodi & Jelu villages in Jodhpur district, Rajasthan, India) and temporal (20 years) boundaries of the project activity are clearly defined. Project participant has taken a lifetime of 20





years for the WTG and the validation team confirmed the appropriateness of the technical lifetime of the WTG from the C-WET website.

CAR 2 was raised by the validation team since the name of the sub-station indicated in the metering system within the project boundary was incorrectly described in the webhosted PDD. The same has been corrected by the project participant in Section B.3 of the revised PDD and hence the CAR is closed.

The validation team confirms that the only greenhouse gas relevant to the project activity is CO<sub>2</sub>. This gas is addressed by the applied methodology. Based on the above assessment, the validation team hereby confirms that the identified boundary and the selected sources and gases are justified for the project activity.

### **3.6.3 Baseline identification (87-88)**

The steps taken to assess the requirement given in paragraph 81 and 82 of the VVM are described below:

Validation team assessed the baseline identification by the project participant using the provisions of the applied methodology. As per the applied methodology ACM 0002, version 12.1.0, the baseline for a new grid connected renewable power plant /unit (greenfield project) is defined as

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

Project participant has used the official published data viz; CEA database, on operating and build margin emission factors (Ref /53/). The version of the data used is Version 5, which was the latest version available on the start date of validation viz; webhosting date of the PDD. This data is published by Central Electricity Authority (CEA), who is the sole authority for the publication of such data in India. This data is based on Version 1.1 of the ‘Tool to calculate the emission factor for an electricity system’; whereas the latest version of the Tool at the time of validation is 2.2.0, however the project participant has chosen the option of not including the off-grid plants in the emission factor calculations (Step 2 of the Tool). Also further, the proposed project activity does not fulfil the condition as mentioned in Step I of the tool viz; the connected electricity system is not located either partially or totally in any Annex 1 countries but is located totally in the host country, India. Hence the CEA database can still be used for the calculations of emission factor. The project participant has applied weight factors for the OM and BM [75% & 25% respectively] as specified in the tool to arrive at the emission factor for the combined





margin. The years considered for OM are 2006-07, 2007-08 and 2008-09 and for the BM it is 2008-09. Accordingly, the combined margin emission factor for the NEWNE grid is 0.9225 tCO<sub>2</sub>/MWh.

Validation team agrees to this emission factor since it is based on the official background data published by CEA. The validation team further noted that the emission factor is not provided by DNA but by the competent authority. The provisions of para 64 of EB 43 in this regard therefore are not applicable.

CL 15 was raised by the validation team since the latest available version of the 'Tool to calculate the emission factor for an electricity system' is Version 2.2 whereas the version of the tool used in Version 5 of the CEA database is Version 1.1, which is used in the PDD to calculate the emission factor. The project participant has clarified that as per Step 2 of Version 2.2.0 of the Tool, the project participant can choose whether to include off-grid plants in the calculation of emission factor. The project participant has chosen not to use Option 2 of the tool. Further the project participant has stated that as per Step 1, the project electricity system is not located either partially or totally in any Annex 1 country but is located in the host country, India and hence the CEA database can still be used. The validation team accepted the same further, on the basis that the tool gives an option of using either Option 1 or Option 2 to calculate the emission factor. Hence the validation team concluded that the CEA database can be used for the determination of the emission factor for the project activity. Hence the CL was closed.

It is noted that the selected baseline scenario is in line with the selected approved methodology. Validation team therefore confirms that the selected baseline scenario reasonably represents what would happen in the absence of the project activity

Based on the above assessment, the validation team hereby confirms that:

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



### 3.6.4 Algorithms and/or formulae used to determine emission reductions (92-93)

The steps taken to assess the requirement outlined in paragraph 89 the VVM are described below:

As per ACM 0002, version 12.1, the baseline for a new grid connected renewable power plant /unit (green-field project) is defined as

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

The project participant has calculated the baseline emissions by multiplication of the net electricity supplied by the project activity to the grid and the grid emission factor. The detailed algorithms are transparently described under sections B.6.3 of the revised PDD (Ref /2/).

As required under ACM 0002, equation 6, the baseline emissions are calculated by the algorithm

$$BE_y = EG_{PJ,y} * EF_{grid,CM,y} \text{ where,}$$

$BE_y$  = baseline emissions

$EG_{PJ,y}$  = quantity of net electricity supplied to the grid by the project activity

$EF_{grid,CM,y}$  = combined margin CO2 emission factor of the grid

The algorithm to calculate the emission reductions from the project activity are described as;

$$ER_y = BE_y - PE_y - LE_y \text{ where,}$$

$ER_y$  = emission reductions from the project activity

$PE_y$  = project emissions from the project activity

$LE_y$  = leakage emissions from the project activity

As described in ACM 0002, the leakage emissions are not to be considered. Hence leakage emissions are considered as zero.

Validation team assessed the calculations of estimated CERs as provided by project participant in a spreadsheet (Ref /60/). The assumptions in this spreadsheet were validated as follows -

Parameter, Value	Source of information	Validation justification
Project	Purchase Order &	The project capacity is as per the



Capacity, 29.60 MW	PPA	documents verified and observation at site.
Number of machines, 37 of 800kW each	Purchase Order, commissioning certificate	The number of machines is as per the documents provided and seen at site.
PLF, 20.48%	As per the PLF estimated by a third party.	PLF is considered as per the third party study report which states that the PLF is 20.48 %. The validation team accepts this PLF value since it meets the requirements as specified in EB 48, Annex 11. Refer section 3.6.3 of this report for a detailed explanation.
Baseline EF, 0.9225 for NEWNE grid	CEA database ver. 5	CEA database is an official source of data and Version 5 was the version available at the start of validation viz; webhosting of the PDD for global stakeholder comments and hence accepted.

The estimated annual average of emission reductions of approximately 48,988 tCO<sub>2</sub>e over the 10 year crediting period of emission reduction represents a reasonable estimation using the assumptions given by the project activity. All the assumptions for this estimate either come from the assumptions used for investment analysis or grid emission factor as taken from CEA website. These are already validated in section 3.6.3 of this report. The validation team confirms that the estimates of baseline emissions can be replicated using the information provided. It also can be verified using the spreadsheet (Ref /60/) for calculations of CERs.

CL 5 was raised since the webhosted PDD did not have a transparent description of whether the parameters of OM, BM & CM are fixed ex-ante. The revised PDD in Section B.6.2 now describes transparently that these parameters are fixed ex-ante for the entire crediting period. Hence the CL was satisfactorily closed.

Based on the above assessment, the validation team hereby confirms that:

- (a) All assumptions and data used by the project participants are listed in the PDD, including their references and sources;
- (b) All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD;
- (c) All values used in the PDD are considered reasonable in the context of the proposed CDM project activity;



- (d) The baseline methodology has been applied correctly to calculate project emissions, baseline emissions and emission reductions;
- (e) All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD

### **3.7 Additionality of a project activity (97)**

The steps taken by the validation team to assess the additionality of the Project Activity include review of documents indicated in the assumptions in the IRR excel sheet (Ref /61/) and common practice analysis (Ref /69/). The detailed steps are described in Sections 3.7.1 through 3.7.5 below

#### **3.7.1 Prior consideration of the clean development mechanism (104)**

The validation team validated the project activity start date provided in the PDD as follows;

Project participant provided copies of all the Purchase orders (Ref /9/ to /20/) for the project activity. Since for windmills, there cannot be any other real action before the Purchase order, the validation team accepted the corresponding date of the first purchase order placed, as the starting date for the project activity. Accordingly, 10.07.2010, which is the date of all the purchase orders raised for the project activity of 29.6 MW capacity, is accepted as the start date of the project activity.

Since the start date of the project activity was after 02 Aug 2008, the serious consideration of CDM for the project activity was assessed in line with the guidelines as specified in EB 49, Annex 22 (Ref /55/) as under;

The validation team verified the communications made by the Project Participant to the Indian DNA (Ref /27/) as well as to the UNFCCC secretariat (Ref /29/). The intimation was done to the UNFCCC Secretariat on 16/10/2010 (Ref /29/) followed by an intimation to the Indian DNA on 30/10/2010 (Ref /27/). Since the intimation to both the entities was done within 6 months of the project activity start date, the validation team concluded that CDM was seriously considered in the decision to implement the project activity. The validation team further reviewed the confirmation mail received by the Project Participant from the UNFCCC vide email dated 26/10/2010 (Ref /30/) and from the Indian DNA vide email dated 02/11/2010 (Ref /28/) confirming the receipt of the intimation. Also the validation team verified the communication made by the Project Participant to the UNFCCC on the CDM website [http://cdm.unfccc.int/Projects/PriorCDM/notifications/index\\_html](http://cdm.unfccc.int/Projects/PriorCDM/notifications/index_html) and observed that the communication was made on 16/10/2010.

Additionally, the validation team also verified the copy of the Board resolution dated 09/07/2010 (Ref /32/) which describes the discussion of investing in the wind power projects across various states of India, including the proposed project activity (29.6 MW in Rajasthan) and further



discusses the financial non-viability of the project activity without CDM revenues. The board minutes further discusses about CDM benefits and criticality of CER revenues in ensuring financial viability of the project activity.

Based on the above, the validation team confirms that CDM benefits were a decisive factor in the decision to proceed with the Project Activity.

Project participant had provided in the revised PDD, the chronology of events since the date of decision of the project activity. The validation team verified the evidences for all the events listed in the chronology under Section B.5 of the revised PDD. It is seen that the project participant had initiated real action in parallel to the implementation of the project activity and that all the activities from the start date of the project activity viz; placement of the P.O for the Wind Turbine Generator (Ref /9/ to /20/) until the date of webhosting of the PDD for global stakeholder comments dated 05/01/2011 are completed well within the time span of only 6 months and hence adequately meets the requirements as mandated by the Guidelines on the Demonstration and Assessment of Prior Consideration of the CDM, Version 04, EB 62, Annex 13 (Ref /55/).

The validation team verified the originals of all the documents as mentioned in the chronology of events in Section B.5 of the PDD and observed them to be correct.

CL 10 was raised by the validation team since the detailed chronology of events for project implementation and the CDM implementation steps were not addressed in the webhosted PDD. The revised PDD under Section B.5 describes all the events of project activity and CDM implementation and hence the CL was closed.

From the above discussions, it is observed that the benefits of CDM were a decisive factor in the decision to proceed with the project activity. Further, continuing and real actions were taken by project participant to secure CDM status in parallel with the implementation of the project activity. This is in line with para 8 of Annex 13 of EB 62 (Ref /55/).

The validation team therefore agrees that project participant has proven that CDM was seriously considered in the decision to proceed with the implementation of the project activity.

Based on the above assessment, the validation team hereby confirms that the proposed CDM project activity complies with the requirements of EB 62 Annex 13.



### 3.7.1.1 Historical information on project timeline

There is no historical information on the project activity timeline since all the activities have begun after the start date of the CDM project activity

### 3.7.2 Identification of alternatives (107)

The approved methodology ACM 0002, Version 12.1 prescribes the baseline for new grid connected renewable power plant /unit as, Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system”.

Further as per para 104 of VVM manual Version 1.2 (Ref /52/) and para 4 of the additionality tool (Ref /56/), the credible alternative to the project activity would be no project activity itself. Since the applied methodology itself prescribes a pre-defined baseline scenario, no further analysis on identification of alternatives is required.

### 3.7.3 Investment analysis (114)

The project participant has demonstrated the additionality of the project activity using the investment analysis, as stated in Step 2 of the latest version of the additionality tool (Ref /56/).

The webhosted PDD initially did not have sufficient information to conclude that the project activity was additional. CAR 9 & CL 11 were raised in this regard. Project participant made the assumptions transparent and rationalized the investment analysis including the sensitivity analysis, in response to the CAR raised. Hence the CAR was closed.

The investment decision for the project activity was taken on 09/07/2010

The validation team validated the input values used in the investment analysis as follows –

Parameter, Value	Source of information	Validation justification
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Parameter, Value	Source of information	Validation justification
Total project cost INR 1756.39 million (inclusive of land cost)	Offer letter from M/s Enercon India Limited dated 25/06/2010 (Ref /31/)	<p>The project cost is taken from proposal from M/s Enercon India Limited which reflects the project cost applicable at the time of decision making. The cost is indicated to be INR 47.47 million per Wind Turbine Generator. Therefore cost for 37 machines is INR 1756.39 million.</p> <p>This is as per para 6 of Guidelines on the Assessment of Investment Analysis (EB 62 Annex 5).</p> <p>The actual cost of the project activity was also verified and subjected to a sensitivity analysis.</p>
Project Capacity, 29.6 MW	Board Resolution (Ref /32/) and Purchase order	The project capacity is as per the discussion in the Board resolution and also the purchase order raised.
Number of machines, 37	Purchase order	The number of machines is verified from site visit, purchase orders and also from commissioning certificates.
PLF(CUF), 20.48 %	Third party PLF Study report prepared by M/s Ravi Enteck Limited dated 24/11/2010 (Ref /33/ & /34/)	<p>The validation team verified the PLF study report prepared by an independent 3<sup>rd</sup> party M/s Ravi Enteck Limited for the 2 separate sites of Jodhpur (Ref /34/) and Jaiselmer (Ref /33/) for the project participant wherein the PLF is stated to be 20.48 &amp; 20.45% respectively. Since the higher PLF value of 20.48% is conservative, the same is considered in the investment analysis and emission reduction estimations.</p> <p>Since the PLF value is determined in line with the requirements specified in EB 48, Annex 11, the validation team accepted the same.</p> <p>However the validation team also verified the PLF indicated in the</p>





Parameter, Value	Source of information	Validation justification
		<p>RERC Notification dated 23/01/2009 (Ref /35/) which was applicable at the time of investment decision and noted that the PLF indicated under para 83 (6)(b)(ii) is 21 % for Jaiselmer and Jodhpur districts, wherein the project activity WEG's are located.</p> <p>There is another order from the RERC dated 31/03/2010 (Ref /36/); however the validation team noted that this order was specifically issued for matters related to determination of tariff for sale of electricity from wind power projects in the State of Rajasthan and does not indicate anything about the CUF/PLF. Also the validation team reviewed the generation estimate provided by the WEG supplier in the initial offer and observed that the CUF indicated for both the sites is 20.46%, which is lower than the PLF value considered by the Project Participant in the investment analysis.</p> <p>Since the sensitivity analysis conducted by the Project Participant of <math>\pm 10\%</math> covers the PLF of 21 % as indicated in the RERC Tariff Order, the validation team considers that the PLF value assumed for the investment analysis is conservative.</p> <p>Hence the validation team confirms that the PLF of 20.48 % considered by the Project Participant meets the requirements of EB 48, Annex 11 guidelines (Ref /57/) and are also conservative.</p>





Parameter, Value	Source of information	Validation justification
Insurance charges@ percentage of capital cost, 0.12 %	Considered Normative	The insurance charges considered are reasonable and not material.
O&M Cost from 2 <sup>nd</sup> year onwards (excluding service tax of 10.30%) is 1.30% of capital cost	The O&M cost is based on the offer letter from M/s Enercon India Limited dated 25/06/2010 (Ref /31/)	<p>The O&amp;M cost indicated in the offer letter of M/s Enercon India Limited dated 25/06/2010 is INR 0.617 million per Wind Turbine Generator per annum from the 2<sup>nd</sup> year onwards with an annual escalation of 6% over the previous years up to the 10<sup>th</sup> year. The O&amp;M cost therefore deduces to 1.30% of the capital cost.</p> <p>The value reflects the O&amp;M cost applicable at the time of decision making.</p> <p>This is as per para 6 of Guidelines on the Assessment of Investment Analysis (EB 62 Annex 5) and hence accepted by the validation team.</p> <p>Since the O&amp;M agreement is not yet signed, the parameter of O&amp;M cost and escalation has been subjected to a sensitivity analysis of -50% and 5% respectively to demonstrate the robustness of the investment analysis.</p>



Parameter, Value	Source of information	Validation justification
Escalation in O&M cost, 6% from the 3 <sup>rd</sup> year onwards	This is based on the offer letter from M/s Enercon India Limited dated 25/06/2010	<p>The escalation in the O&amp;M cost is taken from the offer letter of M/s Enercon India Limited dated 25/06/2010 (Ref /31/) which reflects cost applicable at the time of decision making.</p> <p>This is as per para 6 of Guidelines on the Assessment of Investment Analysis (EB 51 Annex 58).</p> <p>Since the O&amp;M agreement is yet to be signed, escalation in the O&amp;M charges was subjected to a sensitivity analysis of 5 %, which is normally observed in the region. The validation team accepts this value as a conservative approach.</p>



Parameter, Value	Source of information	Validation justification
Power Tariff, INR 3.87/kWh	RERC Tariff Regulation dated 31/03/2010 (Ref /36/)	<p>This is the applicable tariff order for the state of Rajasthan at the time of the investment decision. Para 3 of the tariff order indicates the power tariff for the districts of Jaisalmer and Jodhpur as INR 3.83/kWh.</p> <p>However subsequent to the tariff order of March 2010, the Rajasthan Electricity Regulatory Commission received petitions [Petition No. RERC-220,221/10] requesting removal of difficulties in tariff regulations and review of the RERC Tariff Order dated 31/03/2010. Subsequently the commission, in its order dated 06/08/2010, revised the tariff for the Jaisalmer and Jodhpur districts from INR 3.83/kWh to INR 3.87/kWh. Even though the order dated 06/08/2010 is later than the date of the investment decision of the Project Participant for the proposed project activity, the validation team accepted the tariff as INR 3.87/kWh since this would lead to a conservative estimate of the investment analysis.</p> <p>Also the tariff indicated in the PPA signed between the Project Participant and the State Electricity Utility for the entire project activity WEG's is also INR 3.87 for the entire project life of 20 years.</p> <p>Hence the validation team confirms that the value of power tariff considered for the investment analysis is conservative. Further a sensitivity analysis of <math>\pm 10\%</math> has also been applied on the tariff.</p>



Parameter, Value	Source of information	Validation justification
Debt to Equity ratio; 0:100	Board Resolution dated 09/07/2010 (Ref /32/)	<p>The Board resolution dated 09/07/2010 indicates that the project activity would be funded by equity alone.</p> <p>However during the course of validation, it was observed that the Project Participant has taken loan from banks of an amount equivalent to INR 578.8 million and therefore the debt equity ratio now is 36:64. (The debt equity ratio is worked out by considering the actual project cost of INR 1628 million based on the purchase orders)</p> <p>Further this is the first investment of the Project Participant in renewable energy projects. Hence data related to the debt equity ratio prior to the project activity is not available.</p> <p>Since the value of the debt equity ratio was available post the investment decision, the Project Participant has subjected this parameter to a sensitivity analysis of 36:64 and confirms that equity IRR with the sensitivity analysis on the parameter of debt equity ratio does not cross the benchmark.</p>
Interest rate on loan, 10.9%	Interest rate as per loan sanction letter	Interest rate has been considered from the loan sanction letter which indicates the actual interest rate applicable for the project activity.



Parameter, Value	Source of information	Validation justification
Baseline EF, 0.9225 tCO <sub>2</sub> /MWh]	CEA database, Version 5.	CEA database is an official source of data published by the Central Electricity Authority in India and hence acceptable. (As explained in section 3.5.3 of this report). The validation team verified the values of Operating Margin and Build Margin from the CEA database, Version 5 and the Combined Margin calculations from the CER excel sheet and confirms that they are correct.

The validation team hereby confirms that project participant has applied all the statutory levies and taxes as per the then valid tax rules. Project participant has also applied incentives like accelerated depreciation of 80%, additional depreciation of 20% and provisions of section 80IA [deferred tax benefit] as per Indian Income Tax Act (Ref /58/). The validation team validated the assumptions as above and observed that they are correct. The financial expert also verified the IRR calculations and observed them to be correct. The input values are as per para 110 of VVM ver 1.2 and in line with Guidelines on the Assessment of Investment Analysis (EB 62 Annex 5).

The project participant has chosen benchmark analysis to demonstrate additionality of the project and for this purpose, has selected equity IRR as the financial indicator. As per Annex 5 of EB 62 "In cases where benchmark approach is used, the applied benchmark shall be appropriate to the type of IRR calculated. Required/expected returns on equity are appropriate benchmarks for equity IRR". Since equity IRR has been selected as the financial indicator, as per the guidance, return on equity or cost of equity has been chosen as the benchmark for the project activity. Therefore the benchmark selected is appropriate to financial indicator chosen and is also in conformity with the EB guidance provided.

The project participant had used return on equity as the benchmark for this Project Activity. Return on equity is calculated as per Capital Asset Pricing Model (CAPM). Each of the parameters used in calculation of CAPM was verified for their appropriateness. Risk free rate has been sourced from Interest rate on Central Government Securities published by Reserve Bank of India available at the time of investment decision and hence acceptable. Average risk free rate of 8.38 % is taken as per interest rate on Central Government securities from Reserve Bank of India



Market risk premium is calculated as the difference between the market return and the risk free rate. The market return is arrived at based on the BSE 200 data. The market return based on BSE 200 data is 15.77% and the market risk premium comes out to be 7.39 %. The validation team confirms that the market return considered, based on BSE 200 data (15.77%) is conservative as it was also compared with the market return values derived from the BSE Sensex data (18.00%), BSE-100 data (18.15%) and BSE-500 data (18.72%). Hence the validation team accepted the value of 15.77% for market return from the BSE 200 data as conservative.

As explained in the PDD, the beta value for the project type is based on Beta values of 5 power generating companies in India and listed on the stock exchange at the time of investment decision. The raw beta values has been sourced from the Bloomberg snap-shots whereas the unlevered beta value has been calculated using the data from the Bloomberg database and also from the web-link [www.moneycontrol.com](http://www.moneycontrol.com). The average beta value of 1.09 from 5 power generating companies for a period of 3 years is considered in the benchmark calculation. Since beta is of listed power generating companies and sourced from the Bloomberg data and from a web link available on the public domain, this was accepted.

The validation team, along-with the financial expert engaged, also verified the correctness and authenticity of the data used for the benchmark calculation and found them to be correct and publicly available. This is also in line with the guidelines for benchmark selection stipulated in the Guidance on the Assessment of Investment Analysis, EB 62 Annex 5 and hence the validation team has accepted the same. The validation team therefore concluded that the benchmark adopted by the Project participant to establish the additionality is 16.40% and consequently the project's additionality, is correct and valid.

The validation team, in consultation with the financial expert engaged, confirms that the equity IRR for the project activity works out to be 7.25 % which is lower than the benchmark of 16.40%.

The only variables, which are more than 20% of the project cost or the project revenue, are PLF, tariff and the O&M cost. However the Project participant has conducted sensitivity analysis for the PLF, O&M cost along with escalation on O&M cost, project capital cost, tariff and also the actual debt equity ratio, without CDM revenues, with  $\pm$  of differing variations with respect to the base values.

The equity IRR values with  $\pm$  10% sensitivity for PLF are 8.80 % (+10% PLF) and 5.59 % (-10% PLF). It is seen that the equity IRR with sensitivity on PLF is below the benchmark value, without CDM.



The validation team agrees with the  $\pm 10$  % variation subjected on PLF since the PLF stated by the applicable RERC Tariff order is also 21 % and the + 10 % variation in sensitivity analysis covers this value from the base value of 20.48%.

The Project Participant has also conducted a sensitivity analysis on the parameter of Operation and Maintenance cost, since the O&M agreement between the Project Participant and the O&M contractor (viz; Enercon India Ltd) is not yet executed. In order to ensure conservativeness, a combined sensitivity analysis of -50% on the O&M cost and the escalation value of 5% has been conducted and it is observed that the equity IRR comes out to be 8.74% without CDM revenues, which is below the benchmark.

The actual cost of the project activity based on the purchase order was lower than the cost indicated in the initial offer by the WEG supplier by 7.30%. The project cost per Wind Turbine Generator indicated in the initial offer by M/s Enercon India Limited (which was available at the time of decision making) was INR 474.70 million whereas the actual project cost (based on the purchase orders raised) worked out to be INR 440.00 million only per Wind Turbine Generator, which is around 7.30% lower than the offer project cost. Hence the sensitivity analysis was conducted at the rate of -10% and the equity IRR was observed to be 9.24% which is lower than the benchmark.

Project Proponent has conducted a sensitivity analysis on the debt equity ratio of 36:64 as the project activity was initially envisaged as an equity funded project alone. However the Project Participant took a loan to a tune of 578.8 million which deduces to a debt equity ratio of 36:64 based on the actual project cost of INR 1628 million.

The equity IRR based on the sensitivity analysis on the actual debt equity ratio lowers the IRR to 6.50% without CDM revenue, which is below the benchmark.

The Project Proponent has conducted a sensitivity analysis on the power tariff even though the power tariff, as described in the PPA, is fixed for the entire life of the project activity. The equity IRR based on the sensitivity analysis of +10% on the tariff works out to be 8.80% without CDM revenue, which is below the benchmark.

The validation team raised CAR 8 since the webhosted PDD, under Section B.5 did not describe as to why sub-steps 2a & 2b are not considered. In response to the CAR, the Project Participant has explained reasons for not considering Option I and Option II, as mandated by sub-step 2b. However the Project Participant has used Option III – Benchmark analysis to demonstrate investment analysis. Hence the CAR was closed.





CAR 9 was raised by the validation team since the supporting document viz; RERC Tariff Order dated 06/08/2010 (for the parameter of tariff) was available after the investment decision date. The Project Participant has responded by describing that the tariff as per the RERC Tariff Order dated 31/02/2010, which was available at the time of investment decision, indicated the tariff to be INR 3.83/kWh. However subsequently there has been a revision in the tariff in the State based on a petition filed by different entities. In response to this petition, the State Electricity Regulatory Commission (viz; RERC) revised the tariff to INR 3.87/kWh vide its notification dated 06/08/2010. The validation team further observed that the tariff indicated in the Power Purchase Agreement (PPA) for all the wind turbines of the project activity are also INR 3.87/kWh, based on the revised tariff order of RERC. Since the tariff of INR 3.87/kWh would lead to a more conservative calculation of the IRR, the validation team accepted the same.

CL 11 was raised by the validation team since the Project Participant did not provide adequate justification for subjecting the parameters of capital cost and O&M cost to only 10% sensitivity analysis and also for not subjecting the parameter of tariff to any sensitivity analysis. The Project Participant has responded to state that the actual project cost based on the purchase orders was observed to be 7.30% lower than the project cost indicated in the initial offer. Hence the sensitivity analysis of 10% is accepted by the validation team. Since the O&M agreement is yet to be signed between the Project Participant and the Wind Turbine Generator supplier, the Project Participant has subjected the parameter to a sensitivity analysis of -50% as a conservative approach. The validation team accepts this since the team is aware and confirms that the reduction in O&M cost up to 50% is not a realistic scenario.

The Project Participant has subjected the parameter of tariff to a sensitivity analysis of  $\pm 10\%$  even though the applicable tariff order mentions that the tariff is fixed for the entire lifetime of the project activity. Further the validation team also reviewed the PPA signed between the Project Participant and the State Electricity Utility and noted that the tariff is fixed for the entire 20 years of the project lifetime.

The revised PDD and the revised IRR excel sheet describes all the assumptions along with the source of the information and also have conducted sensitivity analysis on parameters of PLF, project cost, O&M cost, tariff and the debt equity ratio. Hence CAR 8, 9 & CL 11 was satisfactorily closed.





The validation team, based on the assessment result by the financial expert engaged, hereby confirms that the underlying assumptions are appropriate and the financial calculations are correct.

It is observed that the equity IRR increases with CER revenues, thereby reducing the gap in viability. The investment risk is also reduced correspondingly. The CER prices fluctuate over time and the prices are market driven. Therefore the extent to which they increase the viability also varies, however CER revenues will definitely improve the viability of the project activity and decrease the investment risk of the project.

The validation team therefore confirms that the equity IRR for the project activity without CDM revenue is 7.25% and even with sensitivity analysis, the values does not cross the benchmark.

Based on the above discussions and on the assessment result by the financial expert engaged (Ref /62/), the validation team hereby confirms that the underlying assumptions are appropriate and the financial calculations are correct.

#### **3.7.4 Barrier analysis (118)**

Project participant has not opted to prove additionality through barrier analysis.

#### **3.7.5 Common practice analysis (121)**

The geographical scope of the common practice analysis is limited to the state of Rajasthan. Validation team agrees with this because the regulatory and tariff policies in India with respect to the windmills change from state to state. Each state has its own regulatory tariff orders and offers different incentives to wind mill developers. Therefore, the regulatory environment for the investment in windmills would be comparable only at the state level.

The Project participant has provided the following key information for common practice analysis –

1. Under sub-step 4a, the Project participant has defined the criteria for considering similar scale projects by identifying and comparing wind farm projects in Rajasthan
  - a. of capacity more than 15 MW and
  - b. by a private investor.
  - c. Small scale projects bundled to form large scale project

The validation team accepts the first criteria defined above, since common practice analysis, as per the additionality tool is required to be conducted only for large scale projects and hence only projects with capacity above 15 MW are compared. Further the validation team accepts the second criteria as the scale of investment in small



- scale projects, which are bundled together to form a large scale project, is different from a single large scale investment. Also wind power projects that are developed by a private entity are prone to higher investment and other risks as compared to government investments. The analysis of data is limited till the date of the investment decision date viz; 09/07/2010. Hence the above criterion ensures that the comparison is done with wind projects of similar scale and nature. There were 10 such projects which were functional at the time of investment decision on the project activity.
2. Project participant then analyzed these 10 projects for CDM status. It was observed that all the projects, except one (viz; 20 MW wind power project by IDFC), have availed / applied for availing CDM benefits.
  3. Sub-step 4 (b) of the PDD provides the description of the wind project by M/s IDFC and adequate justification for exclusion of the same. The wind power project of 20 MW set up by M/s IDFC Limited could not be analyzed further due to lack of information available in the public domain. The validation team reviewed the website of CDM pipeline and also reviewed the website of the organization, but could not locate any information regarding to the wind power project. However the review of the website of the organization indicated\* that IDFC is primarily a banking institution and also there is more than 20 % stake under the Government of India's control. Hence this project can be classified into the criteria (b) above, of considering only private investments for common practice analysis

The information on similar large scale projects was validated using the Indian Wind Power Directory 2009 (Ref /69/).

The DOE hereby confirms that the proposed CDM project activity is not common practice.

### 3.8 Monitoring plan (124)

The Project activity uses the approved consolidated monitoring methodology ACM 0002 Version 12.1. Please refer discussions on the applicability of the methodology at section 3.6.1 above. The steps taken to assess whether the monitoring arrangements described in the monitoring plan are feasible within the project design are described below.

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\* [www.idfc.com/pdf/shareholding\\_pattern/dec\\_31\\_2009/IDFCC3531122009\\_Web.pdf](http://www.idfc.com/pdf/shareholding_pattern/dec_31_2009/IDFCC3531122009_Web.pdf)



Validation team considers the monitoring plan to be complying with the requirements of the methodology for the following reasons –

1. According to the methodology, there is only one variable that a windmill project needs to monitor, i.e.,  $EG_{facility, y}$ , the net electricity supplied to the grid by the proposed Project Activity.
2.  $EF_{grid, CM, y}$ , the emission factor is fixed ex-ante based on CEA database, Version 5. This is in line with the EF tool as required by the methodology.
3. Project participant has provided provision for monitoring these parameters and for electronic as well as hard copy archiving of the monitored data. This is stated in Section B.7.1 of the revised PDD.
4. Project participant has provided for archiving the data for 2 years beyond the crediting period or last issuance whichever is later.
5. The monitoring plan includes requirements for calibration of the energy meters, used for monitoring the project activity variable,  $EG_{facility, y}$ , annually. The calibration is conducted by the State Electricity Authority and/or DISCOM. In case during the annual calibration, the meter(s) is found to be outside the permissible limits of error, then the meter(s) would be replaced immediately by the DISCOM. The error identified in the energy meter during the annual calibration would be applied to all the monitored data since the date of the last calibration, in case the meter has been used in the preparation of the monthly Joint Meter reading.
6. The monitoring frequency for  $EG_{facility, y}$  matches with that of the applied methodology, viz. continuous measurement and monthly recording. The cross checking will be carried out with sales receipts (invoices/bank statements), which indicates the payment made by the Rajasthan Discom to the Project Participant for the net electricity delivered by the Project Activity to the grid.
7. Project Participant has included the parameters of  $EG_{JM, export}$  and  $EG_{JM, import}$ , which provides the details of the electricity exported and electricity imported by the project as well as non-project activity WEG's respectively. These parameters are measured continuously but recorded monthly by the representatives of the SEB and the Project Participant at the Electricity Board sub-station and are used in the apportioning of the net electricity to the individual investor. Further the Project Participant has also included the parameters of  $EG_{controller, i}$ , which indicates the net electricity generation value (Export – Import) by the project as well as non project activity WEG's as recorded at the LCS of the individual WEG's,  $\sum EG_{controller, i}$ , which indicates the summation of the net electricity generation value by the project as well as non project activity WEG's as recorded at the LCS of the individual WEG's and  $\sum EG_{controller, j}$  which indicates summation of the net electricity generation value by the project activity WEG's as recorded at the LCS of the individual WEG's. The validation team noted that even though the LCS meters internally measures the electricity export and electricity imports values separately but continuously displays only



the net electricity generation values of the individual WEG's. Therefore in the 2 cases of apportioning as described in the PDD, the apportioning ratio deduced from the LCS controller readings would be based on the net electricity generation values as recorded at the LCS of the individual WEG's. The apportioning ratio so deduced shall be applied to both, the electricity export as well as the electricity import values as recorded at the trivector energy meter at the State Electricity sub-station. The validation team confirmed through interviews that this is the procedure followed by the State Electricity Utility officials to deduce the quantity of net electricity generation supplied to the grid by the WEG's. Thus the validation team confirms that the monitoring plan described in the PDD is complete.

8. Under section B.7.2 of the PDD, project participant has provided the detailed metering system, measurement procedure, procedures to deal with data uncertainty, procedure for apportioning of the measured data, organizational structure etc.

9. The validation team validated the metering system at site as follows viz;

**Jodhpur Site:**

- a. Out of total 37 WTGs of the project activity, 20 WTGs are located in Jodhpur district totaling to 16 MW installed capacity in Jodhpur district
- b. The 20 WTGs have been located at feeder no. 4 (16 WTGs), feeder no. 3 (2 WTGs) and feeder no. 2 (2 WTGs) at Salodhi sub-station. However the validation team confirms that the connection of the project activity Wind Turbine Generator could change based on the connected load on a particular feeder and the Project Participant has no control on the same.
- c. The metering system consists of billing meters (main and check billing meter) connected on the feeder located at 132 kV sub-station at Pumping Station VIII Narwa (DISCOM substation) and back-up meters (main and check back-up meter) located at the Salodi sub-station (Enercon substation). All the meters are of accuracy class 0.2s.
- d. There are other wind mills, apart from the project activity wind mills that are connected to the metering system at both, the Salodi as well as the PS VIII Narwa sub-station.
- e. Both the meters, billing as well as back-up meters, are under the control and jurisdiction of the Discom and are sealed by Discom representatives.
- f. The monthly Joint Monthly recording (Ref /65/) of the electricity exported and the electricity imported by all the wind turbines (project activity as well as non-project activity) is done at both, the Salodi sub-station as well as at the PS VIII Narwa substation. However it is the reading taken at the PS VIII Narwa sub-station which is used for billing purpose. The recording is done by the



- representatives of the Project Participant and one or more of RVVPNL/Discom. The JMR sheet is prepared and signed by all the personnel involved in the meter recording.
- g. Based on this JMR sheet, the Project Participant representative prepares the monthly break-up generation sheets (Ref /66/), which indicates the net electricity supplied to the grid by the individual investors. The monthly break-up generation sheets are prepared by the Project Participant representative by considering the net electricity generation value [calculated as Electricity Export – Electricity Import] as recorded at the main/back-up meters at the sub-station and the net energy generated values at the LCS of individual WEG's. The Project Participant representative submits one copy of this break-up generation sheet to the Project Participant and another copy to the State Electricity Utility/DISCOM.
  - h. The Project Participant, based on this monthly break-up generation sheet, prepares the invoice (Ref /67/) and submits it to Discom for release of payment. Discom conducts an audit, based on the JMR sheet, break-up of generation sheet submitted by the Project Participant representative and the invoice raised by the Project Participant and only if the values in these 3 documents are matching is the payments released to the Project Participant.
  - i. The payment is made by the Discom to the Project Participant either in the form of a cheque or online transfer (RTGS transfer).
  - j. The cross checking will be carried out with sales receipts (invoices/bank statements) (Ref /67/), which indicates the payment made by the Discom to the Project Participant for the net electricity delivered by the Project Activity to the grid.

**Jaiselmer Site:**

- a. Out of total 37 WTGs of the project activity, 17 WTGs are located in Jaiselmer district totaling to 13.6 MW installed capacity.
- b. The 17 WTGs are connected at feeder no. 11 (05 WTGs) and feeder no. 8 (12 WTGs) at 33kV Bhu sub-station (Enercon sub-station) which is further connected to the Amar-Sagar substation (DISCOM sub-station) wherein the electricity is stepped up to 220kV However the validation team confirms that the connection of the project activity Wind Turbine Generator to a particular feeder could change based on the connected load on that feeder and the Project Participant has no control on the same.
- c. The metering system consists of a billing meter at the 220 kV Amar Sagar substation and a check meter at the 33kV Bhu sub-station. Both the meters are of accuracy class 0.2s.
- d. There are other wind mills, apart from the project activity wind mills that are connected to the metering system at both, the Bhu as well as the Amar Sagar sub-station.



- e. Both the meters, billing as well as check meter, are under the control and jurisdiction of the Discom and are sealed by Discom representatives.
- f. All the other steps are exactly the same as explained in points f to j above.

The validation team physically verified the metering system installed at the site of the project activity. Monitoring plan was not correctly described in the webhosted PDD and hence CAR 3, 4, 10 were raised. Project participant revised the monitoring plan in the PDD and has now described the metering and monitoring system in details in section B.7.1 & B.7.2 of the revised PDD. Validation team confirms that the description now correctly represents the metering system available at the project activity site. Hence the CAR 3, 4 & 10 were satisfactorily closed.

The validation team also interacted with the team of the O&M service provider; M/s. Enercon India Limited, who is the windmill supplier itself. The agency is experienced in the monitoring system and is managing O&M of numerous other wind farm CDM projects.

The validation team therefore is of the opinion that the project participant through the O&M agency is capable of implementing the monitoring plan in the context of the project activity.

The validation team hereby confirms that the monitoring plan described in the revised PDD complies with the requirements of the methodology.

### **3.9 Sustainable development (127)**

The host Party's DNA confirmed the contribution of the project to the sustainable development of the host Party. Refer to section 3.1 of this report. The project participant described contribution to sustainable developed as per four indicators of sustainable development stipulated by Ministry of Environment & Forests in India.

The host country legislation does not require any environmental impact assessment to be carried out for wind energy projects. Project participant has obtained approval from DNA of India (Ref /3/) and it is confirmed by the Authority that the project contributes to sustainable development in India. The project activity is in compliance with all current applicable legislations. As the project activity does not lead to generation of liquid or gaseous effluents and it will displace fossil fuel based electricity generation, there are only benefits derived out of the project and no adverse effects are envisaged. Moreover, the location of the project activity is in remote and economically backward region and hence largely contributes to the social well being of the region.





During site visit it was noticed that the project provided employment to local people. The host Party's DNA confirmed the contribution of the project to the sustainable development of the host Party.

### **3.10 Local stakeholder consultation (130)**

The steps taken to assess the adequacy of the local stakeholder consultation are described below.

Local stakeholder consultation meeting to discuss stakeholder concerns on the Project Activity was conducted by the Project Participant on 25/10/2010 at Jaiselmer site (Ref /37/) at the Bhu sub-station and on 27/10/2010 at the Jodhpur site (Ref /38/). The method of invitation to the local stakeholders was by a public advertisement in the local newspaper Nafa Nuksan dated 12/10/2010 (Ref /39/). There was also an opportunity to local stakeholders to provide their comments through email, in case some of the local stakeholders were not able to attend the meeting until 07/11/2010.

The validation team feels that the time provided [13 days] to the local stakeholders for providing comments on the Project Activity is adequate. The same was verified by the validation team during the personal interaction with some of the local stakeholders during the validation site visit.

The list of participants, copy of the newspaper advertisement inviting participation of interested local stakeholders, and minutes of the stakeholder meeting proceedings, including photographs maintained by the project participants (Ref /37/ & /38/) were verified by the validation team. The stakeholders viewed this project as contributing to local environmental benefits and socio-economy. Overall, there was agreement that the project activity was a beneficial project from the local sustainable development.

During the validation site visit, the validation team also interviewed few of the local stakeholders for their views about the project activity. The villagers confirmed that the stakeholder consultation meeting was held at Jaiselmer and Jodhpur. The villagers expressed satisfaction over the windmill project activity in the region and confirmed that the project activity gives employment opportunity to the local public and thus contributes to the economical growth of the region.

CAR 6 was raised since the webhosted PDD did not transparently describe the identity of the local stakeholders that made comments under Section E.2. The Project Participant has now included the identity of each of the local stakeholder who has made comments under Section E.2 of the revised PDD. Hence the CAR was closed.



CL 6 was raised by the validation team since the description of the local stakeholder consultation process as mandated by the PDD Completeness guideline was not indicated in Section E.1 of the webhosted PDD. The Project Participant has now described the entire local stakeholder consultation process more clearly in Section E.1 of the revised PDD and the CL was closed based on the corrections made by the Project Proponent in the revised PDD.

The validation team hereby confirms that the process of local stakeholder consultation is observed to be adequate.

### **3.11 Environmental impacts (133)**

As per the Schedule of the EIA notification (Ref /59/), given by the Ministry of Environment and Forests (Government of India) EIA is not a regulatory requirement in India for wind energy projects. Thus the project activity doesn't require EIA. The project activity does not involve any negative environmental impacts, as the Wind Turbine Generator's are installed for generation of power using wind which is a clean source of energy.

Project participant has obtained HCA approval (Ref /3/) from DNA of India and it is confirmed by the Authority that the project contributes to sustainable development in India. The project activity is in compliance with all current applicable legislations.

## **4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS**

The PDD using methodology ACM 0002 was webhosted on the UNFCCC for global stakeholder's comments as per CDM requirements. The project was webhosted from 05/01/2011 to 03/02/2011

Comments were received from 02 global stakeholders. The project participant provided response to these comments. Validation team took due account of these comments and the respective responses while making the validation opinion. The details of the comments received, responses by the project participant/s and the explanation of how due account of these is taken by the validation team are attached as Appendix B with this validation report.

## **5 VALIDATION OPINION**

Bureau Veritas Certification has performed a validation of the 'Renewable Energy Wind Power Project in Rajasthan' Project in India. The validation was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.





The validation consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final validation report and opinion.

Project participant/s used the latest tool for demonstration of the additionality. In line with this tool, the PDD provides analysis of investment barriers to determine that the project activity itself is not the baseline scenario.

By synthetic description of the project, the project is likely to result in reductions of GHG emissions partially. An analysis of the investment analysis demonstrates that the proposed project activity 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. Given that the project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

The review of the project design documentation (Ref /2/) and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project correctly applies and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria. Bureau Veritas Certification thus requests registration of 'Renewable Energy Wind Power Project in Rajasthan' as CDM project activity.

## 6 REFERENCES

### Category 1 Documents:

Documents provided by Type the name of the company that relates directly to the GHG components of the project.

- /1/ Webhosted PDD, Version 1.0 dated 15/12/2010
- /2/ Final PDD, Version 6.0, dated 21/02/2012
- /3/ Host Country Approval vide No 4/12/2011-CCC dated 24/05/2011
- /4/ Power Purchase Agreement between M/s Vish Wind Infrastructure LLP and AVVNL dated 24/09/2010 for 4 MW at Kita village, Jaisalmer District.
- /5/ Power Purchase Agreement between M/s Vish Wind Infrastructure LLP and AVVNL dated 24/09/2010 for 13.6 MW at Jelu village, Jodhpur District.
- /6/ Power Purchase Agreement between M/s Vish Wind Infrastructure LLP and AVVNL dated 16/09/2010 for 4.8 MW at Korwa & Ugawa villages, Jaisalmer District.
- /7/ Power Purchase Agreement between M/s Vish Wind Infrastructure LLP and AVVNL dated 16/09/2010 for 4.8 MW at Ugawa village, Jaisalmer District.
- /8/ Power Purchase Agreement between M/s Vish Wind Infrastructure LLP and



- AVVNL dated 12/01/2011 for 3.2 MW at Salodi village, Jodhpur District.
- /9/ Purchase Order with reference VWILLP/EIL/10-11/07-A issued by the Project Participant on WEG supplier M/s Enercon (India) Limited dated 10/07/2010 for supply of 3 nos of 800 kW each WEG's (2.4 MW). Also for Concrete Tower supply and Other Equipment Supply.
  - /10/ Purchase Order with reference VWILLP/EIL/10-11/07-1A issued by the Project Participant on WEG supplier M/s Enercon (India) Limited dated 10/07/2010 for Civil Works and Erection, testing and Commissioning for 3 nos of 800 kW each WEG's (2.4 MW).
  - /11/ Purchase Order with reference VWILLP/EIL/10-11/07-2A issued by the Project Participant on WEG supplier M/s Enercon (India) Limited dated 10/07/2010 for land and transportation charges towards supply of materials for 3 nos of 800 kW each WEG's (2.4 MW).
  - /12/ Purchase Order with reference VWILLP/EIL/10-11/06 issued by the Project Participant on WEG supplier M/s Enercon (India) Limited dated 10/07/2010 for supply of 5 nos of 800 kW each WEG's (4.0 MW). Also for Concrete Tower supply and Other Equipment Supply
  - /13/ Purchase Order with reference VWILLP/EIL/10-11/06-1 issued by the Project Participant on WEG supplier M/s Enercon (India) Limited dated 10/07/2010 for Civil Works and Erection, testing and Commissioning for 5 nos of 800 kW each WEG's (4.0 MW).
  - /14/ Purchase Order with reference VWILLP/EIL/10-11/06-2 issued by the Project Participant on WEG supplier M/s Enercon (India) Limited dated 10/07/2010 for land and transportation charges towards supply of materials for 5 nos of 800 kW each WEG's (4.0 MW).
  - /15/ Purchase Order with reference VWILLP/EIL/10-11/03 issued by the Project Participant on WEG supplier M/s Enercon (India) Limited dated 10/07/2010 for supply of 12 nos of 800 kW each WEG's (9.6 MW). Also for Concrete Tower supply and Other Equipment Supply
  - /16/ Purchase Order with reference VWILLP/EIL/10-11/03-1 issued by the Project Participant on WEG supplier M/s Enercon (India) Limited dated 10/07/2010 for Civil Works and Erection, testing and Commissioning for 12 nos of 800 kW each WEG's (9.6 MW).
  - /17/ Purchase Order with reference VWILLP/EIL/10-11/03-2 issued by the Project Participant on WEG supplier M/s Enercon (India) Limited dated 10/07/2010 for land and transportation charges towards supply of materials for 12 nos of 800 kW each WEG's (9.6 MW).
  - /18/ Purchase Order with reference VWILLP/EIL/10-11/07 issued by the Project Participant on WEG supplier M/s Enercon (India) Limited dated 10/07/2010 for supply of 17 nos of 800 kW each WEG's (13.6 MW). Also for Concrete Tower supply and Other Equipment Supply
  - /19/ Purchase Order with reference VWILLP/EIL/10-11/07-1 issued by the Project Participant on WEG supplier M/s Enercon (India) Limited dated 10/07/2010 for Civil Works and Erection, testing and Commissioning for 17 nos of 800 kW each WEG's (13.6 MW).
  - /20/ Purchase Order with reference VWILLP/EIL/10-11/07-2 issued by the Project Participant on WEG supplier M/s Enercon (India) Limited dated 10/07/2010 for



- land and transportation charges towards supply of materials for 17 nos of 800 kW each WEG's (13.6 MW).
- /21/ Commissioning certificate for 02 nos of 800 kW each WEG's (1.6 MW) on 17/11/2010 vide letter no. SE (RDPPC)/XEN(C&R)/D-1459 dated 07/12/2010
  - /22/ Commissioning certificate for 14 nos of 800 kW each WEG's (11.2 MW) on 30/09/2010 vide letter no. SE (RDPPC)/XEN(C&R)/D-1195 dated 25/10/2010
  - /23/ Commissioning certificate for 05 nos of 800 kW each WEG's (4.0 MW) on 30/09/2010 vide letter no. SE (RDPPC)/XEN(C&R)/D-1119 dated 11/10/2010
  - /24/ Commissioning certificate for 06 nos of 800 kW each WEG's (4.8 MW) on 23/09/2010 vide letter no. D -1388 dated 26/10/2010
  - /25/ Commissioning certificate for 06 nos of 800 kW each WEG's (4.8 MW) on 23/09/2010 vide letter no. D -1389 dated 26/10/2010
  - /26/ Commissioning certificate for 04 nos of 800 kW each WEG's (3.2 MW) on 26/01/2011 vide letter no. SE (RDPPC)/XEN(C&R)/D-1862 dated 15/02/2011
  - /27/ Email from Project Participant to Indian DNA dated 30/10/2010 informing the DNA regarding the project activity – To prove CDM consideration as per EB 48, Annex 62
  - /28/ Email dated 02/11/2010 from Indian DNA to Project Participant confirming receipt of the intimation of the project activity.
  - /29/ Email from Project Participant to UNFCCC dated 16/10/2010 informing the UNFCCC regarding the project activity – To prove CDM consideration as per EB 48, Annex 62
  - /30/ Email dated 26/10/2010 from UNFCCC to Project Participant confirming receipt of the intimation of the project activity
  - /31/ Proposal for supply of wind turbines for 29.6 MW wind power project from M/s Enercon dated 25/06/2010
  - /32/ Certified true copy of the Board resolution of M/s Vish Wind Infrastructure LLP for the project activity, dated 09/07/2010
  - /33/ Third Party PLF report by M/s Ravi Enteck Limited, Chennai for the project activity located in Jaiselmer District dated 24/11/2010.
  - /34/ Third Party PLF report by M/s Ravi Enteck Limited, Chennai for the project activity located in Jodhpur District dated 24/11/2010.
  - /35/ RERC Tariff Order 2009 dated 23/01/2009
  - /36/ RERC Commission Order No 9 dated 31/03/2010
  - /37/ Minutes of local stakeholder meeting, photographs of the meeting, attendance sheet dated 25/10/2010 at Jaiselmer site
  - /38/ Minutes of local stakeholder meeting, photographs of the meeting, attendance sheet dated 27/10/2010 at Jodhpur site
  - /39/ Advertisement in local newspaper 'Nafa-Nuksan' dated 12/10/2010 inviting local stakeholder comments.
  - /40/ Approval from the Electrical Inspectorate for energisation of 10 nos Wind Turbine Generator with reference no. 2477 dated 04/03/2010
  - /41/ Approval from the Electrical Inspectorate for energisation of another 10 nos Wind Turbine Generator with reference no. 2472 dated 04/03/2010
  - /42/ Approval from the Electrical Inspectorate for energisation of the remaining 10 nos Wind Turbine Generator with reference no. 2467 dated 04/03/2010
  - /43/ Permission for interconnection of the Wind Turbine Generator's of the project



- activity to the grid by Rajasthan Rajya Vidhyut Prasaran Nigam Limited with reference no RVPN/SE(NPP-R)/P-2/D.227 dated 03/03/2010
- /44/ Land lease deed dated 17/11/2006 between M/s Enercon (India) Ltd and Governor of State of Rajasthan.
  - /45/ Sub-lease of land from M/s Enercon (India) Limited and M/s Kohinoor Planet Constructions Pvt Ltd
  - /46/ Loan application made by Project Participant to State Bank of India dated 18/11/2009 for the project activity.
  - /47/ Loan sanction letter for the project activity from State Bank of India to Project Participant with reference no. IFBM:RM-I:2009-10:506 dated 01/02/2010

### Category 2 Documents:

Background documents related to the design and/or methodologies employed in the design or other reference documents.

- /48/ PDD completion guidance - Guidelines for completing the simplified project design document (CDM-PDD) and the proposed new baseline and monitoring methodology (CDM-NM), version 07, Annex 12 of EB 41
- /49/ PDD Form, CDM-PDD, Version 03
- /50/ ACM 0002, Version 12.1 - Consolidated baseline methodology for grid-connected electricity generation from renewable sources
- /51/ Emission Factor tool - Tool to calculate the emission factor for an electricity system, version 2.2.0
- /52/ Validation and Verification Manual, version 1.2, EB 55; [VVM]
- /53/ CEA baseline database, version 05 dated November 2009 [<http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm>]
- /54/ Guidance on the Assessment of Investment Analysis, Version 05, Annex 5, EB 62
- /55/ Guidelines on the Demonstration and Assessment of Prior Consideration of the CDM, Version 04, EB 62, Annex 13
- /56/ Tool for the demonstration and assessment of additionality, version 05.2, EB 39, Annex 10.
- /57/ Guidelines for the reporting and validation of PLF's, EB 48 Annex 11
- /58/ Income Tax Act, Government of India [<http://law.incometaxindia.gov.in/TaxmannDit/DisplayPage/dpage1.aspx>]
- /59/ EIA notification, S.O. 1533 dated 14th September, 2006
- /60/ CER Excel Sheet
- /61/ IRR Excel sheet
- /62/ IRR Certificate by the financial expert
- /63/ Benchmark excel sheet
- /64/ Sample copies of meter calibration certificates
- /65/ Sample copies of the 'Monthly Generation Record' / (JMR) issued by the AVVNL to the project participant for the monthly recording of electricity recorded.
- /66/ Sample copies of the 'Break-up of generation sheet' issued by M/s Enercon to



- the project participant and also to AVVNL
- /67/ Sample copy of the invoice raised by the Project participant on JVVNL and the sales receipt (bank statement)
  - /68/ Snapshots from Bloomberg database for Beta values
  - /69/ Wind Power Directory 2009 & CDM website – For Common Practice Analysis

**Persons interviewed:**

List persons interviewed during the validation or persons that contributed with other information that are not included in the documents listed above.

- /1/ Mr Puneet Katyal, Head CDM, Enercon (India) Limited
- /2/ Mr Saujanya Kumar, Enercon (India) Limited
- /3/ Mr Neeraj Gupta, PriceWaterHouse Coopers
- /4/ Mr Srikanth Vairalkar, Assistant Engineer (Service), Enercon (India) Limited
- /5/ Mr Nitin Sridhar, Site In Charge, Jaiselmer, Enercon India Ltd
- /6/ Mr Ibrahim Khan, Local stakeholder

## 7. CURRICULA VITAE OF THE DOE'S VALIDATION TEAM MEMBERS

**R S Prem Kumar: (Team Leader)**

Lead auditor in Bureau Veritas Certification for Environment Management System, Quality Management System and Occupational Health and Safety Management System. Graduate in the field of Environmental Engineering and has more than 12 years of Industrial work experience in the field of environmental and occupational safety management systems. He has undergone training on Clean Development Mechanism. He is involved in the Validation/verification for more than 35 CDM/VCS/POA projects

**Prabir Sarkar (Team Member)**

Post Graduate in Environmental Science with over 6.5 years of Industry experience in the field of Environmental Management. He has worked in Iron and Steel Industry in Environmental Management System and Energy Management with special emphasis on CDM Project Development. He also worked in Environmental Monitoring, Management and consultancy jobs in different industries. He has successfully completed IRCA approved EMS Lead Auditor Training Course. He has undergone intensive training on Clean Development Mechanism and presently involved in Validation and Verification of CDM Project Activities

**Sushil Budhia Associates (Financial Expert – For IRR Validation)**

Services from Sushil Budhia Associates were delivered by Mr. Sushil Budhia and Ms. Usha Gopalan who are both Chartered Accountants. Mr. Sushil Budhia has been practicing as Chartered Accountant for 25 years and he has very wide experience on project finance, taxation and financial auditing. Ms Usha Gopalan has over 15 years of experience in Project finance, taxation and auditing. Mr. Sushil Budhia and Ms. Usha



Gopalan have undergone training on Clean Development Mechanism They have conducted verification of financial indicators like IRR for more than 70 CDM projects

**Karthikeyan and Jayaram Associates (Financial Expert – For Benchmark Validation)**

Services from Jayaram & Karthikeyan Associates was delivered by Mr. Jayaram, who is a Chartered Accountant, for the validation of the benchmark calculations. He possesses in depth understanding and experience in Assurance services relating to financial appraisals & analyses, those specially related to CDM projects. He is empanelled with other DOE's for scrutinizing the financial additionality aspects of the CDM projects handled by them and expressing opinions on the financials of the project participant. Has appraised over 50 CDM projects for financial additionality on behalf of CDM validators of repute.

**Sanjay S Patankar**

**Bureau Veritas Certification, Internal Reviewer**

Educational qualifications: B.E. (Mech.) M.E. (Mech.)

He has over 20 years of experience in engineering manufacturing industry covering various functions like enterprise management, product design, engineering, tool & die design, improvements in the production shop, quality assurance & control and systems planning and implementation, including ISO 9001 based quality management systems. Working for the last 2 years in Bureau Veritas Certification (India) Pvt. Ltd. as Lead Auditor for ISO 9001, 14001 and OHSAS 18001 standards/specifications. Has undergone training related to Clean Development Mechanism and is currently involved in validation and verification of CDM project activities.





## VALIDATION PROTOCOL

**Table 1 Validation requirements based on the Clean Development Mechanism Validation and Verification Manual (Version 01.2) and methodology ACM0002 (Version 12.1) – “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”**

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
<b>1. Approval</b>			<b>COUNTRY A</b> (insert the country name)	<b>COUNTRY B</b> (insert the country name)		
a. Have all Parties involved approved the project activity?	VVM	44	There is only one party involved in the project activity as per the webhosted PDD viz; India. Project participant to provide the copy of the HCA issued by the Indian DNA.	--	CL 1	OK
b. Has the DNA of each Party indicated as being involved in the proposed CDM project activity in section A.3 of the PDD provided a written letter of approval? (If yes, provide the reference of the letter of approval, any supporting documentation, and specify if the letter was received from the project participant or directly from the DNA)	VVM	45	The project participant has applied to the DNA for an HCA. The copy of the HCA, when received from the Indian DNA, to be provided to the validation team.	--	--	OK
c. Does the letter of approval from DNA of each	VVM	45				





## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Party involved:					
i. confirm that the Party is a Party of the Kyoto Protocol?	VVM	45.a	The HCA from the Indian DNA is yet to be received by the project participant.	--	OK
ii. confirm that participation is voluntary?	VVM	45.b	The HCA from the Indian DNA is yet to be received by the project participant.	--	OK
iii. confirm that, in the case of the host Party, the proposed CDM project activity contributes to the sustainable development of the country?	VVM	45.c	The HCA from the Indian DNA is yet to be received by the project participant.	--	OK
iv. Refers to the precise proposed CDM project activity title in the PDD being submitted for registration?	VVM	45.d	The HCA from the Indian DNA is yet to be received by the project participant.	--	OK
d. Is(are) the letter(s) of approval unconditional with respect to (i) to (iv) above?	VVM	46	The HCA from the Indian DNA is yet to be received by the project participant.	--	OK
e. Has(ve) the letter(s) of approval been issued by the respective Party's designated national authority (DNA) and is valid for the CDM project activity under validation?	VVM	47	To be reviewed after the receipt of the HCA from the project participant.	--	OK
f. Is there doubt with respect to the authenticity of the letter of approval?	VVM	48	To be reviewed after the receipt of the HCA from the project participant.	--	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
g. If yes, was verified with the DNA that the letter of approval is authentic?	VVM	48	To be reviewed after the receipt of the HCA from the project participant.	--	OK
<b>2. Participation</b>			<i>PP1 (insert PP1 name)</i>	<i>PP2 (insert PP2 name)</i>	
a. Have all project participants been listed in a consistent manner in the project documentation?	VVM	51	The project participant listed in Section A.3 of the webhosted PDD is M/s Vish Wind Infrastructure LLP and is described as private party. The same name is also indicated in Annex 1 of the PDD.	--	OK
b. Has the participation of the project participants in the project activity been approved by a Party to the Kyoto Protocol?	VVM	51	The Project Participant has applied for an HCA to the Indian DNA. Project Participant to provide a copy of the HCA, once received from the DNA.	--	OK
c. Are the project participants listed in tabular form in section A.3 of the PDD?	VVM	52	Yes, the Project Participant is listed in a tabular form in Section A.3 of the	--	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
d. Is the information in section A.3 consistent with the contact details provided in annex 1 of the PDD?	VVM	52	PDD. Yes, the information provided in Section A.3 and in Annex 1 is consistent with each other.	--	OK
e. Has the participation of each of the project participants been approved by at least one Party involved, either in a letter of approval or in a separate letter specifically to approve participation? (Provide reference of the approval document for each of the project participants)	VVM	52	To be verified after receipt of the HCA from the Indian DNA.	--	OK
f. Are any entities other than those approved as project participants included in these sections of the PDD?	VVM	52	No, there is only one Project Participant listed in Sections A.3 and Annex 1 of the PDD.	OK	OK
g. Has the approval of participation issued from the relevant DNA?	VVM	53	Yes, the approval of participation is issued by the Indian DNA.	--	OK
h. Is there doubt with respect to (g) above?	VVM	53	To be verified after receipt of the HCA from the Indian DNA.	--	OK
i. If yes, was verified with the DNA that the approval of participation is valid for the proposed CDM project participant?	VVM	53	To be verified after receipt of the HCA from the Indian DNA.	--	OK
<b>3. Project design document</b>					
a. Is the PDD used as a basis for validation prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website?	VVM	55	Yes, the PDD used as the basis for validation is prepared with the latest version of the template viz; Version 3 of the PDD template.	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
b. Is the PDD in accordance with the applicable CDM requirements for completing the PDD?	VVM	56	Yes, the PDD is in accordance with the latest applicable CDM guidelines.	OK	OK
c. In CDM-PDD section A.1 are the following provided?	EB 41	Ann 12			
i. Title of project	EB 41	Ann 12	Yes, the title of the project activity is indicated in the webhosted PDD as "Renewable Energy Wind Power Project in Rajasthan" in the webhosted PDD.	OK	OK
ii. Current version number and date of document	EB 41	Ann 12	Yes, the current version number of the PDD is 01 and the date of the document is 15/12/2010.	OK	OK
d. In CDM-PDD section A.2 are following provided (max. one page)?	EB 41	Ann 12			
i. A brief description of the project activity covering purpose which includes the scenario existing prior to the start of project, present scenario and baseline scenario	EB 41	Ann 12	The brief description of the project activity along with the purpose of the proposed project activity is described in Section A.2 of the webhosted PDD.	OK	OK
ii. Explanation on how the GHG emission reductions are effected	EB 41	Ann 12	Yes, it is explained that the proposed project activity utilizes renewable wind energy to generate electricity which would have been generated by the operation of fossil fuel power plants.	OK	OK
iii. The PP's vies on the contribution of project activity to sustainable development	EB 41	Ann 12	The Project Participant views on the 4 sustainable parameters as specified by the Indian DNA viz; social, environmental, technological & and economic well being are described in Section A.2 of the webhosted PDD.	OK	OK
iv. Are there any changes/modifications compared to the webhosted PDD?	EB 41	Ann 12	There are no changes expected as compared to the webhosted PDD.	OK	OK
e. In CDM-PDD section A.3 are following provided	EB	Ann			



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
in the tabular format?	41	12			
i. List of project participants and parties	EB 41	Ann 12	Yes, Vish Wind Infrastructure LLP is identified as the Project Participant.	OK	OK
ii. Identification of Host Party			Yes, India is identified as the host party.	OK	OK
iii. Indication whethre the Party wishes to be considered as project participant	EB 41	Ann 12	The party does not wish to be considered as the Project Participant for the project activity.	OK	OK
f. In CDM-PDD section A.4.1 are following provided?	EB 41	Ann 12			
i. Technical description, location, host party(ies) and address as required	EB 41	Ann 12	Yes	OK	OK
ii. Detailed physical location with unique identification of the project activity (eg. Longitude/latitude) – not to exceed one page	EB 41	Ann 12	Yes, the physical location of the project activity is indicated in the webhosted PDD.  1. However the names of the villages indicated in Section A.4.1.3 and Section A.4.1.4 for Jodhpur district do not match with other. Please clarify along with supporting evidences. 2. The longitude value indicated in Section A.4.1.4 and in Appendix 1 of the webhosted PDD do not match for 70°56'13.0"	CAR 1	OK
iii. Are there any changes/modifications compared to the webhosted PDD?	EB 41	Ann 12	Yes, there would be changes based on the Project Participant response to the CAR identified above.	--	OK
g. In CDM-PDD section A.4.2 is the list of cateoreis of project activities provided?	EB 41	Ann 12	Yes. the category of the project activity is classified as "Energy Industries (Renewable / Non renewable sources) in Section A.4.2.	OK	OK
h. In CDM-PDD section A.4.3 are following provided?	EB 41	Ann 12			



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. A description of how environmentally safe and sound technology, and know-how, is transferred to the Host Party(ies)	EB 41	Ann 12	Yes, it is described that since the project utilizes clean wind power to generate power, the technology can be described as environmentally safe. Further it is stated that there is a technology transfer from Enercon GmbH to Enercon. Project Participant to clarify the same.	CL 2	OK
ii. Explanation of purpose of project activity with scenario existing prior to the start of project, scope or present activities and the baseline scenario	EB 41	Ann 12	Yes, the purpose of the project activity and the scenario existing prior to the start of the project activity is explained.	OK	OK
iii. List and arrangement of the main manufacturing/production technologies, systems and equipments involved	EB 41	Ann 12	Not applicable	OK	OK
iv. The emissions sources and GHGs involved	EB 41	Ann 12	Not applicable	OK	OK
v. Are there any changes/modifications compared to the webhosted PDD?	EB 41	Ann 12	Yes, there would be changes based on the Project Participant response to the CAR identified above.	--	OK
i. In CDM-PDD section A.4.4 is the estimation of emission reductions provided as requested in a tabular format?	EB 41	Ann 12	Yes, the estimation of emission reductions is provided in a tabular format. Please provide a copy of the CER excel sheet.	CL 3	OK
j. In CDM-PDD section A.4.5 is Information regarding Public funding provided?	EB 41	Ann 12	Yes, it is stated that there is no public funding for the project activity. Please provide an undertaking to this effect. Also provide copies of the annual reports of the Project Participant for the last 3 years.	OK	OK
k. In CDM-PDD section B.1 are following provided?	EB 41	Ann 12			



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. The approved methodology and version number	EB 41	Ann 12	Yes, reference to ACM 0002, Version 12.1.0 is provided in Section B.1 of the webhosted PDD.	OK	OK
ii. Any methodologies or tools which the above approved methodology draws upon and their version number	EB 41	Ann 12	Yes, the reference to the Tool to calculate emission factor, Version 2 and Tool to demonstrate and assess Additionality, Version 05.2 is referred in Section B.1 of the PDD.	OK	OK
I. In CDM-PDD section B.2 are following provided?	EB 41	Ann 12			
i. Justification of the choice of methodology that the project activity meets each of the applicability conditions	EB 41	Ann 12	The project activity is justified to be green field project and not a capacity addition. Project Participant to justify as to why the project activity is not considered as a capacity addition as the Project Participant has another wind project in the State of Tamil Nadu (which is also under CDM)	CL 4	OK
ii. Documentations with references that had been used. This can be provided in Annex 3 instead	EB 41	Ann 12	Not applicable	OK	OK
m. In CDM-PDD section B.3 are following provided?	EB 41	Ann 12			
i. Description of all sources and gases included in the project boundary in the table	EB 41	Ann 12	Yes	OK	OK
ii. A flow diagram of the project boundary physically delineating the project activity	EB 41	Ann 12	Yes, a flow diagram of the project boundary delineating the project activity is provided. However the explanation provided in the flow diagram of the project boundary is not correct w.r.t the sub-station at Jodhpur since the sub-station name was not Tinwari, as observed at site.	CAR 2	OK
iii. The flow diagram with all equipments, systems	EB	Ann	Yes	OK	OK





## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
and flows of mass and energy etc	41	12			
n. In CDM-PDD section B.4 are following provided?	EB 41	Ann 12			
i. Explanation how the most plausible baseline scenario is identified in accordance with the selected baseline methodology	EB 41	Ann 12	Yes, the applied methodology prescribes grid as the pre-defined baseline for green-field projects. The same is described in Section B.4 of the webhosted PDD.  However Project Participant to justify the baseline further, based on the query related to capacity addition (Please refer CL 4 above)	--	OK
ii. Justification of key assumptions and rationales	EB 41	Ann 12	Not applicable	OK	OK
iii. Transparent illustration of all data used to determine the baseline scenario (variables, parameters, data sources, etc.)	EB 41	Ann 12	Yes	OK	OK
iv. A transparent and detailed description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed project activity	EB 41	Ann 12	Yes, the applied methodology prescribes grid as the pre-defined baseline for green-field projects. The same is described in Section B.4 of the webhosted PDD.	OK	OK
v. Are there any changes/modifications compared to the webhosted PDD?	EB 41	Ann 12	Yes, there would be changes based on the Project Participant response to the CAR/CL identified above.	--	OK
o. In CDM-PDD section B.5 are following provided?	EB 41	Ann 12			
i. Explanation of how and why this project activity is additional and therefore not the baseline	EB 41	Ann 12	Yes	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
scenario in accordance with the selected baseline methodology					
ii. Justification of key assumptions and rationales	EB 41	Ann 12	Yes	OK	OK
iii. Evidence that the incentive from the CDM was seriously considered in the decision to proceed with the project activity, if the starting date of the project activity is before the date of validation	EB 41	Ann 12	Yes, the project activity is a new project in line with the EB guidance in EB 48. The Project Participant has communicated to the Indian DNA and the UNFCCC within 6 months of the project activity start date.	OK	OK
p. In CDM-PDD section B.6.1 are following provided?	EB 41	Ann 12			
i. Explanation as to how the procedures, in the approved methodology to calculate project emissions, baseline emissions, leakage emissions and emission reductions are applied to the proposed project activity	EB 41	Ann 12	Yes, an explanation of how the baseline emissions, project emissions and leakage emissions are calculated is provided in Section B.6.1	OK	OK
ii. Equations used in calculating emission reductions	EB 41	Ann 12	Yes, the equation used for calculating the emission reductions is indicated as $ER_y = BE_y - PE_y - LE_y$ in the webhosted PDD.	OK	OK
iii. Explanation and justification for all relevant methodological choices, including different scenarios or cases, options and default values	EB 41	Ann 12	Not applicable	OK	OK
q. In CDM-PDD section B.6.2 are following provided?	EB 41	Ann 12			
i. A compilation of information on the data and parameters that are not monitored throughout the crediting period but that are determined only once and thus remains fixed throughout the crediting period AND that are available	EB 41	Ann 12	Yes, the information of the parameters of operating margin, build margin and the combined margin are provided in Section B.6.2.  However it is not clear whether the parameters	CL 5	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
when validation is undertaken			of OM, BM and CM are fixed ex-ante, throughout the crediting period.		
ii. The actual value period	EB 41	Ann 12	Yes, the actual values are provided.	OK	OK
iii. Explanation and justification for the choice of the source of data	EB 41	Ann 12	Yes, the data of the emission factor is considered from the CEA database, Version 5 which is based on reliable government source.	OK	OK
iv. Clear and transparent references or additional documentation in Annex 3	EB 41	Ann 12	Yes, additional documentation is provided in Annex 3 of the webhosted PDD.	OK	OK
v. Where values have been measured, a description of the measurement methods and procedures (e.g. which standards have been used), indicated the responsible person/entity having undertaken the measurement, the date of measurement(s) and the measurement results	EB 41	Ann 12	Values are not measured, but are directly taken from the CEA database, Version 5	OK	OK
r. In CDM-PDD section B.6.3 are following provided?	EB 41	Ann 12			
i. A transparent <i>ex ante</i> calculation of project emissions, baseline emissions (or, where applicable, direct calculation of emission reductions) and leakage emissions expected during the crediting period, applying all relevant equations provided in the approved methodology	EB 41	Ann 12	Yes, a transparent ex-ante calculation of the baseline emissions is provided. Project emissions and leakage emissions are considered as zero for wind projects, in line with the applied methodology.	OK	OK
ii. Documentation how each equation is applied, in a manner that enables the reader to reproduce the calculation	EB 41	Ann 12	Yes	OK	OK
iii. Additional background information and or data	EB	Ann	The calculation of the baseline emissions have	--	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
in Annex 3, including relevant electronic files (i.e. spreadsheets)	41	12	been provided in Annex 3 of the PDD. Project Participant to provide the copy of the CER excel sheet.		
s. In CDM-PDD section B.6.4 are the results of the <i>ex ante</i> estimation of emission reductions for all years of the crediting period, provided in a tabular format?	EB 41	Ann 12	Yes	OK	OK
t. In CDM-PDD section B.7.1 are following provided?	EB 41	Ann 12			
i. Specific information on how the data and parameters that need to be monitored would actually be collected during monitoring for the project activity	EB 41	Ann 12	Yes	OK	OK
ii. For each parameter the following below information, using the table provided:	EB 41	Ann 12			
a. The source(s) of data that will be actually used for the proposed project activity (e.g. which exact national statistics). Where several sources may be used, explain and justify which data sources should be preferred.	EB 41	Ann 12	Yes, the source of data that will actually be used for the proposed project activity is described.	OK	OK
b. Where data or parameters are supposed to be measured, specify the measurement methods and procedures, including a specification which accepted industry standards or national or international standards will be applied, which measurement equipment is used, how the measurement is undertaken, which	EB 41	Ann 12	1. The metering system is described in common for both the sites viz Jodhpur and Jaiselmer. However during the site visit, it was observed that the meterig system at Jodhpur is different than the metering system at Jaiselmer. 2. Also the name of one of the sub-station is indicated as Tinwari, however it was observed during the site visit, that the sub-	CAR 3	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
calibration procedures are applied, what is the accuracy of the measurement method, who is the responsible person/entity that should undertake the measurements and what is the measurement interval; (i) A description of the QA/QC procedures (if any) that should be applied; (ii) Where relevant: any further comment. Provide any relevant further background documentation in Annex 4.			station name is different at Jodhpur.		
u. In CDM-PDD section B.7.2 are following provided?	EB 41	Ann 12			
i. A detailed description of the monitoring plan	EB 41	Ann 12	The description of the metering system is not described separately for the Jodhpur and Jaiselmer sites as it was observed that the metering system at these 2 sites are slightly different from each other.	CAR 4	OK
ii. The operational and management structure that the project operator will implement in order to monitor emission reductions and any leakage effects generated by the project activity	EB 41	Ann 12	Yes, the operational and management structure of the project participant is described in the webhosted PDD.	OK	OK
iii. The responsibilities for and institutional arrangements for data collection and archiving	EB 41	Ann 12	Yes, the responsibilities for data collection and data archiving are provided in the webhosted PDD.	OK	OK
iv. Indication that the monitoring plan reflect good monitoring practice appropriate to the type of project activity	EB 41	Ann 12	The monitoring plan needs to be revised as per the CAR/CL raised.	--	OK
v. Relevant further background information in Annex 4	EB 41	Ann 12	No information is provided in Annex 4 of the PDD	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
v. In CDM-PDD section B.8 are following provided?	EB 41	Ann 12			
i. Date of completion of the application of the methodology to the project activity study in DD/MM/YYYY	EB 41	Ann 12	Yes, the date is provided as 05/11/2010	OK	OK
ii. Contact information of the person(s)/entity(ies) responsible for the application of the baseline and monitoring methodology to the project activity	EB 41	Ann 12	Yes, the contact information of the project participant is included in Annex 1	OK	OK
iii. Indication if the person/entity is also a project participant listed in Annex 1	EB 41	Ann 12	Yes, it is indicated that the person/entity is also a project participant as listed in Annex 1`	OK	OK
w. In CDM-PDD section C.1.1 are following provided?	EB 41	Ann 12			
i. The starting date of a CDM project activity, which is the earliest of the date(s) on which the implementation or construction or real action of a project activity begins/has begun (EB33, Para 76/CDM Glossary of terms/EB41, Para 67)	EB 41	Ann 12	Yes, the starting date of the project activity is indicated as 10/07/2009.	OK	OK
ii. A description of how this start date has been determined, and a description of the evidence available to support this start date	EB 41	Ann 12	No, description of how the start date has been determined and the description of the evidence to support the start date is not provided.	CAR 5	OK
iii. If this starting date is earlier than the date of publication of the CDM-PDD for global stakeholder consultation by a DOE, description in Section B.5 contain a of how the benefits of the CDM were seriously considered prior to the starting date (EB41, Para 68).	EB 41	Ann 12	Yes	OK	OK
x. In CDM-PDD section C.1.2 is the expected operational lifetime of the project activity in years	EB 41	Ann 12	Yes, the operational lifetime of the project activity is stated as 20 years and 00 months	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
and months provided?					
y. In CDM-PDD section C.2 is it stated whether the project activity will use a renewable or a fixed crediting period and is C.2.1 or C.2.2 completed accordingly?	EB 41	Ann 12	Yes, it is stated that the project activity would use a fixed crediting period of 10 years.	OK	OK
z. In CDM-PDD section C.2.1 is it indicated that each crediting period shall be at most 7 years and may be renewed at most two times, provided that, for each renewal, a designated operational entity determines and informs the Executive Board that the original project baseline is still valid or has been updated taking account of new data where applicable?	EB 41	Ann 12	Not applicable	OK	OK
aa. In CDM-PDD section C.2.1.1 are dates in the following format: (DD/MM/YYYY) provided?	EB 41	Ann 12	Not applicable	OK	OK
bb. In CDM-PDD section C.2.1.2 is the length of the first crediting period in years and months provided?	EB 41	Ann 12	Not applicable	OK	OK
cc. In CDM-PDD section C.2.2 is the fixed crediting period at most ten (10) years provided?	EB 41	Ann 12	Yes	OK	OK
dd. In CDM-PDD section C.2.2.1 are the dates provided in the following format: (DD/MM/YYYY)?	EB 41	Ann 12	Yes, the date is provided as 01/07/2011 or date of registration with UNFCCC whichever is later	OK	OK
ee. In CDM-PDD section C.2.2.2 is the length of the crediting period in years and months Provided?	EB 41	Ann 12	Yes, the length of the crediting period is provided as 10 years 00 months	OK	OK
ff. In CDM-PDD section D.2 are the conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the Host Party, if environmental impacts are	EB 41	Ann 12	The analysis of environmental impacts due to the wind project activity is not required to be conducted as per Indian legislation. The same is described in the PDD.	OK	OK





## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
considered significant by the project participants or the Host, provided?					
gg. In CDM-PDD section E.1 are the following provided?	EB 41	Ann 12			
i. The process by which comments by local stakeholders have been invited and compiled. An invitation for comments by local stakeholders shall be made in an open and transparent manner, in a way that facilitates comments to be received from local stakeholders and allows for a reasonable time for comments to be submitted.	EB 41	Ann 12	Yes, the local stakeholders were invited by means of a newspaper advertisement placed in the local newspaper dated 12/10/2010 and the meeting was conducted on 25 & 27/10/2010 respectively at the 2 locations.  However it is not clear when the meeting took place at Jodhpur and when was it conducted at Jaiselmer.	CL 6	OK
ii. The project activity is described in a manner, which allows the local stakeholders to understand the project activity, taking into account confidentiality provisions of the CDM modalities and procedures.	EB 41	Ann 12	Yes	OK	OK
iii. The local stakeholder process has been completed before submitting the proposed project activity to the DOE for validation.	EB 41	Ann 12	Yes, the local stakeholder process was completed in the year 2010 which is prior to the webhosting of the PDD for global stakeholder consultation.	OK	OK
hh. In CDM-PDD section E.2 are following provided?	EB 41	Ann 12			
i. Identification of local stakeholders that have made comments	EB 41	Ann 12	No, identity of the local stakeholders that have made comments is not presented in Section E.2 of the PDD rather it is incorrectly indicated in Section E.3 of the PDD.	CAR 6	OK
ii. A summary of this comments.	EB	Ann	Yes, a summary of the comments are provided	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
	41	12	in Section E.2 of the PDD		
ii. In CDM-PDD section E.3 is the explanation of how due account have been taken of comments received from local stakeholders provided?	EB 41	Ann 12	Yes, the project participant response to each of the query raised by the local stakeholder is provided in Section E.3 of the PDD.	OK	OK
jj. In CDM-PDD Annex 1 are the following provided?	EB 41	Ann 12			
i. Contact information of project participants	EB 41	Ann 12	Yes	OK	OK
ii. For each organisation listed in section A.3 the following mandatory fields: Organization, Name of contact person, Street, City, Postfix/ZIP, Country, Telephone and Fax or e-mail	EB 41	Ann 12	There is only one organization listed in Section A.3 of the PDD. The contact details and all other details of this organization is provided in Annex 1.	OK	OK
kk. In CDM-PDD Annex 2 is information from Parties included in Annex 1 on sources of public funding for the project activity which shall provide an affirmation that such funding does not result in a diversion of official development assistance and is separate from and is not counted towards the financial obligations of those Parties provided?	EB 41	Ann 12	Yes, it is described that there is no public funding from parties included in Annex 1.  Please provide an undertaking to this effect.	--	OK
ll. In CDM-PDD Annex 3 is the background information used in the application of the baseline methodology provided?	EB 41	Ann 12	Yes, background information on the calculation of the emission factor is provided in Annex 3. However the version of the CEA database is not indicated in Annex 3.	CL 7	OK
mm. In CDM-PDD Annex 4 is the background information used in the application of the monitoring methodology provided?	EB 41	Ann 12	No additional information is provided in Annex 4.	OK	OK
<b>4. Project description</b>					
a. Does the PDD contain a clear description of the project activity that provides the reader with a	VVM	58	Yes, the clear description of the project activity is provided in Section A.2 of the webhosted	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
clear understanding of the precise nature of the project activity and the technical aspects of its implementation?			PDD. It is stated that the project activity involves the installation of 37 machines of Enercon make totalling 29.6 MW in the State of Rajasthan, India. The entire electricity generated from the project activity would be sold to the State Electricity Utility.		
b. Is the description of the proposed CDM project activity as contained in the PDD:	VVM	59			
i. sufficiently covering all relevant elements?	VVM	59	Yes	OK	OK
ii. accurate?	VVM	59	Yes	OK	OK
iii. providing the reader with a clear understanding of the nature of the proposed CDM project activity?	VVM	59	Yes	OK	OK
iv. Are there any changes/modifications compared to the webhosted PDD?	VVM	59	No there would be no changes as compared in the webhosted PDD.	OK	OK
c. Is the proposed CDM project activity in existing facilities or or utilizing existing equipments?	VVM	60	No, the proposed project activity is not in existing facilities or utilizing existing equipments.	OK	OK
d. Is the CDM project activity one of the following types:	VVM	60			
i. Large scale?	VVM	60	Yes, the project activity is a large scale project with an installed capacity of 29.6 MW.	OK	OK
ii. Non-bundled small scale projects with emission reductions exceeding 15,000 tonnes per year?	VVM	60	Not applicable	OK	OK
iii. Bundled small scale projects, each with emission reductions not exceeding 15,000 tonnes?	VVM	60	Not applicable	OK	OK
e. If yes to (c) and (d) above, was a physical site	VVM	60	Yes, a site visit was conducted by the DOE on	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
inspection conducted to confirm that the description in the PDD reflects the proposed CDM project activity, unless other means are specified in the methodology?			10, 11 & 12 <sup>th</sup> February 2011.		
f. If yes to (d.iii) above, was the number of physical site visits base on sampling?	VVM	60	Not applicable	OK	OK
g. If yes is the sampling size appropriately justified through statistical analysis?	VVM	60	Not applicable	OK	OK
h. For other individual proposed small scale CDM project activities with emission reductions not exceeding 15,000 tonnes per year, was a physical site inspection conducted?	VVM	61	Not applicable	OK	OK
i. For all other proposed CDM project activities not referred to in paragraphs 59 – 61, was a physical site inspection conducted?	VVM	62	Not applicable	OK	OK
j. If no, was it appropriately justified?	VVM	62	Not applicable	OK	OK
k. Does the proposed CDM project activity involve the alteration of an existing installation or process?	VVM	63	No, the proposed CDM project activity is the installation of a greenfield wind power plant.	OK	OK
l. If yes, does the project description clearly state the differences resulting from the project activity compared to the pre-project situation?	VVM	63	Not applicable	OK	OK
<b>5. Baseline and monitoring methodology</b>					
<b>a. General requirement</b>					
a. Do the the baseline and monitoring methodologies selected by the project participants comply with the methodologies previously approved by the CDM Executive	VVM	65	Yes, the baseline and moinitoring methodology appllied to the proposed project activity is ACM 0002, Version 12.1.0, which is previously approved by the CDM Executive Board	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Board?					
b. Is the selected methodology applicable to the project activity?	VVM	66	Refer to (5.b.a) below	-	OK
c. Had the PP correctly applied the selected methodology?	VVM	66	Refer to (5.b.d) below	-	OK
d. Had the selected methodology been correctly applied with respect to project boundary?	VVM	67	Refer to (5.c) below	-	OK
e. Had the selected methodology been correctly applied with respect to baseline identification?	VVM	67	Refer to (5.d) below	-	OK
f. Had the selected methodology been correctly applied with respect to Algorithms and/or formulae used to determine emission reductions?	VVM	67	Refer to (5.e) below	-	OK
g. Had the selected methodology been correctly applied with respect to additionality?	VVM	67			
i. Has the additionality of the project activity been demonstrated and assessed using the latest version of the "Tool for the demonstration and assessment of additionality" agreed by the Board, which is available on the UNFCCC website?	ACM	0002 v.12.1	Yes, the additionality of the project activity has been demonstrated by Version 05.2 of the "Tool for the demonstration and assessment of additionality"	OK	OK
h. Had the selected methodology been correctly applied with respect to monitoring methodology?	VVM	67	Refer to (7.g), (7.h), (7.i), (7.j) and (7.k) below	OK	OK
<b><i>b. Applicability of the selected methodology to the project activity</i></b>					
a. Is the selected baseline and monitoring methodology, previously approved by the CDM Executive Board, applicable to the project activity? Is the used version valid?	VVM	68	Yes, the baseline and monitoring methodology applied to the proposed project activity is ACM 0002, Version 12.1.0, which is previously approved by the CDM Executive Board. The	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			version used is the latest available on the UNFCCC website.		
i. This methodology is applicable to grid-connected renewable power generation project activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plants); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).	ACM	0002 v.12.1	The project activity is the installation of a grid connected wind power plant in the State of Rajasthan. The entire electricity generated from the proposed project activity will be sold to the State Electricity Utility. The PDD further states that the project activity is the first installation of the Project Participant in renewable energy projects. Project Participant to provide the copies of the annual reports of the last 3 years and further provide an undertaking on the company letterhead regarding the same.	CL 8	OK
b. Has the DOE applied specific guidance provided by the CDM Executive Board in respect to the applicable approved methodology?	VVM	69	No	OK	OK
c. Is the methodology correctly quoted?	VVM	70	Yes, the methodology ACM 0002, version 12.1.0 is correctly quoted in the PDD.	OK	OK
d. Are the applicability conditions of the methodology met?	VVM	71	Yes		
i. The project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit	ACM	0002 v.12.1	The project activity is the installation of a grid connected wind power plant in the State of Rajasthan. The entire electricity generated from the proposed project activity will be sold to the State Electricity Utility. The PDD further states that the project activity is the first installation of the Project Participant in renewable energy projects.	--	OK



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			Project Participant to provide the copies of the annual reports of the last 3 years and further provide an undertaking on the company letterhead regarding the same.		
ii. In the case of capacity additions, retrofits or replacements (except for wind, solar, wave or tidal power capacity addition projects which use Option 2: on page 10 to calculate the parameter $EG_{PJ,y}$ ): the existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.	ACM	0002 v.12.1	To be verified based on the review of the annual reports of the Project Participant as requested in above query.	--	OK
iii. In case of hydro power plants, one of the following conditions must apply: - The project activity is implemented in an existing reservoir, with no change in the volume of reservoir; or - 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/m <sup>2</sup> ; or	ACM	0002 v.12.1	The proposed project activity is a wind project totaling 29.6 MW, hence this condition is not applicable.	OK	OK





## VALIDATION REPORT

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- 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/m <sup>2</sup> .					
iv. The methodology is not applicable to the following conditions. Please confirm - Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity - Biomass fired power plants; - Hydro power plants that result in new reservoirs or in the increase in existing reservoirs where the power density of the power plant is less than 4 W/m <sup>2</sup> .	ACM	0002 v.12.1	This applicability condition is not applicable as the proposed project activity is the installation of wind power project.	OK	OK
v. In the case of retrofits, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, i.e. to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance".	ACM	0002 v.12.1	It is not clear why the project activity is not considered as a capacity addition since the Project Participant has another wind power installation in the State of TamilNadu.	--	OK
e. Is the project activity expected to result in emissions other than those allowed by the methodology?	VVM	71	No	OK	OK
f. Is the choice of the methodology justified?	VVM	71	Yes, the applied methodology is applicable to the proposed project activity	OK	OK



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g. Have the project participants shown that the project activity meets each of the applicability conditions or the approved methodology?	VVM	71	Refer to (5.b.d) above	-	OK
h. Have the project participants shown that the project activity meets each of the applicability conditions of any tool or other methodology component referred to the methodology?	VVM	71	No, the Project Participant has not justified the applicability to the tool applied for calculating the emission factor and also the tool for demonstration of additionality	CL 9	OK
i. Are each of the applicability conditions of the "Tool to calculate the emission factor for an electricity system" met?	EB 50	Ann 40	The justification of the applicability condition of the Tool is not provided in the PDD.  Please refer CL 9 above	--	OK
ii. Are each of the applicability conditions of the "Tool for the demonstration and assessment of additionality" met?	EB 39	Ann 10	The justification of the applicability condition of the Tool is not provided in the PDD.  Please refer CL 9 above	--	OK
iii. Are each of the applicability conditions of the "Combined tool to identify the baseline scenario and demonstrate additionality" met?	EB 28	Ann 14	Not applicable as the project activity is not a retrofit or replacement of an existing project.	OK	OK
iv. Are each of the applicability conditions of the "Tool to calculate project or leakage CO <sub>2</sub> emissions from fossil fuel combustion" met?	EB 41	Ann 11	Not applicable	OK	OK
i. Is the DOE, based on local and sectoral knowledge, aware that comparable information is available from sources other than that used in the PDD?	VVM	71	No	OK	OK
j. If yes, was the PDD cross checked against the other sources to confirm that the project activity meets the applicability conditions of the methodology? (provide the reference to these	VVM	71	Not applicable	OK	OK



## VALIDATION REPORT

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choices)					
k. Can a determination regarding the applicability of the selected methodology to the proposed CDM project activity be made?	VVM	72	Yes, all the applicability conditions of the selected methodology has been justified appropriately.	OK	OK
l. If no, clarification of the methodology was requested, in accordance with the guidance provided by the CDM Executive Board?	VVM	72	Not applicable	OK	OK
m. If answer to (5.b.d) above is “no”, revision or deviation from the methodology was requested, in accordance with the guidance provided by the CDM Executive Board?	VVM	73	Not applicable	OK	OK
n. If yes to (5.b.l) and (5.b.m) above, a request for registration was submitted before the CDM Executive Board has approved the proposed deviation or revision?	VVM	74	Not applicable	OK	OK
<b>c. Project boundary</b>					
a. Does the PDD correctly describe the project boundary, including the physical delineation of the proposed CDM project activity included within the project boundary for the purpose of calculating project and baseline emissions for the proposed CDM project activity?	VVM	78	No. The explanation provided is not correct w.r.t the sub-station at Jodhpur since the sub-station name was not Tinwari, as observed at site.  Refer CAR 2 above	--	OK
i. Does the extent of the project boundary, as described in the PDD, includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to?	ACM	0002 v.12.1	Yes, the project boundary includes the project activity and all the power plants connected physically to the NEWNE grid to which the project activity is connected to.	OK	OK
ii. Are the greenhouse gases and emission sources that are included in or excluded from	ACM	0002 v 12.1	Yes, the GHG and emission sources are shown in a tabular format, in line with the applied	OK	OK



## VALIDATION REPORT

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the project boundary shown in a table format as per applicable methodology?			methodology.		
b. Is the delineation in the PDD of the project boundary correct and include identification of all locations, processes and equipment including secondary equipment and associated processes such as logistics etc.?	VVM	79	No, the metering system at Jodhpur and Jaiselmer are different from each other. The same is not described transparently in the project boundary. Refer CAR 2 above	--	OK
c. Does the delineation in the PDD of the project boundary meet the requirements of the selected baseline?	VVM	79	Please refer CAR 2 above	--	OK
d. Have changes been made to the project boundary in comparison to the webhosted PDD. If yes please comment on the reason for the changes.	VVM	79	Yes, there would be changes in the description of the project boundary as compared to the webhosted PDD.	--	OK
e. Have all sources and GHGs required by the methodology been included within the project boundary?	VVM	79	Yes, all the GHG and emission sources has been included within the project boundary.	OK	OK
f. Does the methodology allow project participant to choose whether a source or gas is to be included within the project boundary	VVM	79	No	OK	OK
g. If yes, have the project participants justified that choice?	VVM	79	Not applicable	OK	OK
h. If yes, is the justification provided reasonable? (provide reference to the supporting documented evidence provided by the project participants)	VVM	79	Not applicable	OK	OK
<b>d. Baseline identification</b>					
a. Does the PDD identify the baseline for the proposed CDM project activity, defined as the scenario that reasonably represents the	VVM	81	Yes, the PDD identifies the baseline in line with the requirements specified under the applied methodology.	OK	OK



## VALIDATION REPORT

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anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed CDM project activity?					
b. Has any procedure contained in the methodology to identify the most reasonable baseline scenario, been correctly applied?	VVM	82	Yes	OK	OK
i. If the project activity is the install a new grid-connected renewable power plant/unit (greenfield plant), is the baseline scenario identified appropriately in accordance with the ACM0002 ver.12.1?	ACM	0002 v12.1	Yes, the project participant has described the baseline in line with the methodological requirement for the installation of a new grid connected renewable power plant.  However project participant to clarify whether the project participant has any other renewable power plant with evidences. Please refer CL 4 above	--	OK
ii. If the project activity is a capacity addition to existing grid-connected renewable power plant/unit, is the baseline scenario identified appropriately in accordance with the ACM0002 ver. 12.1? And is the point of time at which the generation facility would likely be replaced or retrofitted (DATE Baseline Retrofit) reasonably defined?	ACM	0002 v12.1	Please refer CL 4 above, regarding query on capacity addition.	--	OK
iii. If the project activity is the retrofit or replacement of existing grid-connected renewable power plant/unit, is the baseline scenario identified following the step-wise procedure in accordance with the ACM0002 ver.12.1?	ACM	0002 v12.1	No, the project activity is not a retrofit or replacement of an existing power plant, hence the baseline scenario is not identified in a step-wise manner, in line with the "Combined Tool to identify the baseline and demonstrate additionalty"	OK	OK



## VALIDATION REPORT

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iv. Are the realistic and credible alternative baseline scenarios for power generation appropriately identified following the Step 1 of the "Combined tool to identify the baseline scenario and demonstrate additionality"? (Step 1)	ACM	0002 v12.1	Not applicable as the project activity is not a replacement or retrofit of an existing power plant.	OK	OK
v. Are the realistic and credible alternative baseline scenarios i.e. P1, P2 and P3 appropriately applied <b>Barrier analysis</b> following the Step 2 of the "Combined tool to identify the baseline scenario and demonstrate additionality"? (Step 2)	ACM	0002 v12.1	Not applicable	OK	OK
vi. If more than one alternative is remaining after Step 2, is <b>Investment analysis</b> appropriately applied (apply an Investment Comparison as per step 3 of the "Combined tool to identify the baseline scenario and demonstrate additionality" or a Benchmark Analysis as per step 2b of the "Tool for the demonstration and assessment of additionality")? (Step 3)	ACM	0002 v12.1	The applied methodology prescribes a pre-defined baseline for Greenfield projects. The project participant has used the same baseline for the project activity which states QUOTE "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."UNQUOTE However the project participant has identified alternatives and then used an investment analysis to demonstrate additionality.	OK	OK
c. Does the selected methodology require use of tools (such as the "Tool for the demonstration	VVM	82	No, for green-field projects, the applied methodology prescribes a pre-defined baseline	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
and assessment of additionality” and the “Combined tool to identify the baseline scenario and demonstrate additionality”) to establish the baseline scenario?			for Greenfield projects. The project participant has used the same baseline for the project activity which states QUOTE “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.” UNQUOTE		
d. If yes, was the methodology consulted on the application of these tools? (In such cases, the guidance in the methodology shall supersede the tool.)	VVM	82	Not applicable.	OK	OK
e. Does the methodology require several alternative scenarios to be considered in the identification of the most reasonable baseline scenario?	VVM	83	No, for green-field projects, the applied methodology prescribes a pre-defined baseline.	OK	OK
f. If yes, are all scenarios that are considered by the project participants and are supplementary to those required by the methodology reasonable in the context of the proposed CDM project activity?	VVM	83	Not applicable	OK	OK
g. Has any reasonable alternative scenario been excluded?	VVM	83	Not applicable	OK	OK
h. Is the baseline scenario identified reasonably supported by:	VVM	84			
i. Assumptions?	VVM	84	Yes	OK	OK
ii. Calculations?	VVM	84	Not applicable	OK	OK
iii. Rationales?	VVM	84	Yes, since the applied methodology prescribes a pre-defined baseline scenario, the project	OK	OK





## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			participant has described the same in the PDD		
i. Are the documents and sources referred to in the PDD correctly quoted and interpreted?	VVM	84	Yes	OK	OK
j. Was the information provided in the PDD cross checked with other verifiable and credible sources, such as local expert opinion, if available? (identify the sources)	VVM	84	No	OK	OK
k. Have all applicable CDM requirements been taken into account in the identification of the baseline scenario for the proposed CDM project activity?	VVM	85	Yes	OK	OK
l. Have all relevant policies and circumstances been identified and correctly considered in the PDD, in accordance with the guidance by the CDM Executive Board?	VVM	85	No, description of the various policies and circumstances relevant to the baseline has not been identified in the PDD	CAR 7	OK
m. Does the PDD provide a verifiable description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed CDM project activity?	VVM	86	Yes, the PDD describes the baseline scenario as an equivalent amount of electricity would be generated in the fossil fuel dominated grid power plants, in the absence of the project activity.	OK	OK
<b>e. Algorithms and/or formulae used to determine emission reductions</b>					
a. Do the steps taken and equations applied to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected baseline and monitoring?	VVM	89	Yes, the equations applied for the calculation of baseline emission, emission reduction, project emission and leakage emissions are in compliance with the applied methodology.	OK	OK
b. Have the equations and parameters in the PDD	VVM	90	Yes	OK	OK



## VALIDATION REPORT

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been correctly applied with respect those in the select approved methodology?					
i. Are the Project emissions appropriately calculated?	ACM	0002 v.12.1	Project emissions for wind power projects, PEy are considered as zero, as per the methodology.	OK	OK
ii. Are the Baseline emissions appropriately calculated specifically for (a) greenfield plants or (b) retrofit and replacements or (c) capacity additions?	ACM	0002 v.12.1	The baseline emissions are calculated for Greenfield projects in the PDD. To be confirmed based on the response to the query on capacity addition.	--	OK
iii. Are the Leakage appropriately calculated?	ACM	0002 v.12.1	Leakage emissions for wind power projects are considered to be zero, as per the methodology.	OK	OK
iv. Are the Emission reductions appropriately calculated?	ACM	0002 v.12.1	Yes	OK	OK
c. Have project participants prepared as part of the CDM-PDD an estimate of likely emission reductions for the proposed crediting period? This estimate should, in principle, employ the same methodology as selected for the calculation of emission reductions. Where the grid emission factor (EFCM,grid,y) is determined ex post during monitoring, project participants may use models or other tools to estimate the emission reductions prior to validation.	ACM	0002 v.12.1	Yes, the Project Participant has prepared the CER excel sheet for the proposed crediting period. The estimation of grid emission factor is based on the CEA database, version 5 and is fixed ex-ante.  The latest available version of the 'Tool to calculate the emission factor for an electricity system' is Version 2.2 whereas the version of the tool used in Version 5 of the CEA database is Version 1.1 Kindly clarify as to how the CEA database could be used in determination of the emission factor for the CDM project activity.	CL 15	OK
d. Does the methodology provide for selection between different options for equations or parameters?	VVM	90	No, all equations and parameters are mandatory and no options are provided.	OK	OK
e. If yes, has adequate justification been provided	VVM	90	Not applicable	OK	OK



## VALIDATION REPORT

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(based on the choice of the baseline scenario, context of the proposed CDM project activity and other evidence provided)?					
f. If yes, have correct equations and parameters been used, in accordance with the methodology selected?	VVM	90	Refer to (5.e.b) above	-	OK
g. Will data and parameters be monitored throughout the crediting period of the proposed CDM project activity?	VVM	91	The data for net electricity exported by the project activity to the grid would be monitored ex-post during the entire crediting period. However the parameter of emission factor would be monitored ex-ante and shall remain fixed throughout the crediting period.	OK	OK
h. If no, and these data and parameters will remain fixed throughout the crediting period, are all data sources and assumptions:	VVM	91	The emission factor for the grid shall remain fixed throughout the crediting period.	OK	OK
i. Appropriate and correct?	VVM	91	Yes, the emission factor calculations are correct and are based on the CEA database, which is from a reliable source.	OK	OK
ii. Applicable to the proposed CDM project activity?	VVM	91	Yes	OK	OK
iii. Resulting in a conservative estimate of the emission reductions?	VVM	91	Yes	OK	OK
i. Will data and parameters be monitored on implementation and hence become available only after validation of the project activity?	VVM	91	The net electricity exported to the grid by the project activity would be monitored ex-post.	OK	OK
j. If yes, are the estimates provided in the PDD for these data and parameters reasonable?	VVM	91	Yes, the estimates provided in the PDD are reasonable	OK	OK
<b>6. Additionality of a project activity</b>					
a. Does the PDD describe how a proposed CDM	VVM	94	Yes	OK	OK



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projet activity is additional?					
b. Does the CDM-PDD state the latest version of the additionality tool being used?	ACM	0002 v.12.1	Yes, the latest version of the additionality tool, Version 05.2 is used in the PDD.	OK	OK
c. Were the following steps of the tool to assess additionality used:	EB 39	Ann 10			
i. Identification of alternatives to the project activity?	EB 39	Ann 10	Identification of alternatives is not required to be done, as the applied methodology prescribes a pre-defined baseline scenario for Greenfield projects.	OK	OK
ii. Investment analysis to determine that the proposed project activity is either: 1) not the most economically or financially attractive, or 2) not economically or financially feasible?	EB 39	Ann 10	Yes, the Project Participant has used investment analysis (benchmark analysis) to prove additionality.	OK	OK
iii. Barriers analysis?	EB 39	Ann 10	Barrier analysis is not opted for.	OK	OK
iv. Common practice analysis?	EB 39	Ann 10	Yes, common practice analysis is conducted by the Project Participant	OK	OK
d. In step 1 (i) have all the sub-steps as below been followed?	EB 39	Ann 10			
i. Sub-step 1a: Define alternatives to the project activity	EB 39	Ann 10	The alternatives to the project activity has been identified by the Project Participant in the PDD.	OK	OK
ii. Sub-step 1b: Consistency with mandatory laws and regulations	EB 39	Ann 10	Yes, description of how the alternatives are consistent with the regulatory requirements is provided in Section B.5 of the PDD	OK	OK
e. Have the following alternatives been included while defining alternatives as per sub-step 1a?	EB 39	Ann 10			
i. (a) The proposed project activity undertaken without being registered as a CDM project activity;	EB 39	Ann 10	Yes	OK	OK



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ii. (b) Other realistic and credible alternative scenario(s) to the proposed CDM project activity scenario that deliver outputs services or services with comparable quality, properties and application areas, taking into account, where relevant, examples of scenarios identified in the underlying methodology;	EB 39	Ann 10	No, the Project Participant has not identified other realistic and credible alternatives as the applied methodology itself describes the baseline scenario and no further analysis is required. Further para 4 of the additionality tool states that for project using ACM 0002, the Project Participant need to identify that there is atleast one credible alternative to the project activity that is more attractive than the proposed project activity.	OK	OK
iii. (c) If applicable, continuation of the current situation (no project activity or other alternatives undertaken).	EB 39	Ann 10	Yes, continuation of the current situation is identified as an alternative.	OK	OK
f. Has the project participant included the technologies or practices that provide outputs or services with comparable quality, properties and application areas as the proposed CDM project activity and that have been implemented previously or are currently being introduced in the relevant country/region?	EB 39	Ann 10	Not applicable	OK	OK
g. Has the outcome of Step 1a: Identified realistic and credible alternative scenario(s) to the project activity done correctly? Please briefly mention the outcome.	EB 39	Ann 10	Yes	OK	OK
h. Is the alternative(s) in compliance with all mandatory applicable legal and regulatory requirements, even if these laws and regulations have objectives other than GHG reductions, e.g. to mitigate local air pollution.?	EB 39	Ann 10	Yes, the alternatives identified is in compliance with all regulatory requirements.	OK	OK



## VALIDATION REPORT

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i. If an alternative does not comply with all mandatory applicable legislation and regulations, has it been shown that, based on an examination of current practice in the country or region in which the law or regulation applies, those applicable legal or regulatory requirements are systematically not enforced and that noncompliance with those requirements is widespread in the country?	EB 39	Ann 10	Not applicable	OK	OK
j. Has the outcome of Step 1b: Identified realistic and credible alternative scenario(s) to the project activity that are in compliance with mandatory legislation and regulations taking into account the enforcement in the region or country and EB decisions on national and/or sectoral policies and regulations done correctly? Please state the outcome.	EB 39	Ann 10	Yes	OK	OK
k. Has PP selected Step 2 (Investment analysis) or Step 3 (Barrier analysis) or both Steps 2 and 3?	EB 39	Ann 10	The Project Participant has selected investment analysis to demonstrate additionality	OK	OK
l. In step 2, have all the sub-steps as below been followed?	EB 39	Ann 10			
i. Sub-step 2a: Determine appropriate analysis method;	EB 39	Ann 10	The PDD does not describe why Sub-step 2a and sub-step 2b is not chosen.	CAR 8	OK
ii. Sub-step 2b: Option I. Apply simple cost analysis;	EB 39	Ann 10	Refer above CAR 8	--	OK
iii. Sub-step 2b: Option II. Apply investment comparison analysis;	EB 39	Ann 10	Refer above CAR 8	--	OK
iv. Sub-step 2b: Option III. Apply benchmark analysis;	EB 39	Ann 10	Refer above CAR 8	--	OK



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v. Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III);	EB 39	Ann 10	Sub-step 2c has been used in the PDD. The Project Participant has used benchmark analysis to demonstrate investment analysis.	OK	OK
vi. Sub-step 2d: Sensitivity analysis (only applicable to Options II and III).	EB 39	Ann 10	Yes, the Project Participant has conducted sensitivity analysis in the PDD	OK	OK
m. In sub-step 2a has the determination of appropriate method of analysis done as per the guidance as below?	EB 39	Ann 10			
i. Simple cost analysis if the CDM project activity and the alternatives identified in Step 1 generate no financial or economic benefits other than CDM related income (Option I).	EB 39	Ann 10	No, Project Participant has not used simple cost analysis for the project activity. However the same is not described in the PDD and is not adequately justified.  Refer CAR 8 above	--	OK
ii. Otherwise, use the investment comparison analysis (Option II) or the benchmark analysis (Option III). Specify option used with justification.	EB 39	Ann 10	Yes, the Project Participant has used Option III, benchmark analysis to demonstrate additionality	OK	OK
n. Has the below guideline followed for sub-step 2b Option I. Apply simple cost analysis? Document the costs associated with the CDM project activity and the alternatives identified in Step1 and demonstrate that there is at least one alternative which is less costly than the project activity.	EB 39	Ann 10	Sub-step 2b, Option I is not used. However the same is not transparently described in the PDD.  Refer CAR 8 above.	--	OK
o. Has the below guideline followed for sub-step 2b Option II. Apply investment comparison analysis? Identify the financial indicator, such as IRR, NPV, cost benefit ratio, or unit cost of service most suitable for the project type and decision-making	EB 39	Ann 10	Sub-step 2b, Option II has not been described in the webhosted PDD.  Please refer CAR 8 above	--	OK





## VALIDATION REPORT

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context. Please specify					
p. Has the below guideline followed for Sub-step 2b: Option III. Apply benchmark analysis?	EB 39	Ann 10			
i. Identify the financial/economic indicator, such as IRR, most suitable for the project type and decision context.	EB 39	Ann 10	Yes, the Project Participant has identified equity IRR as the financial indicator for the project activity.	OK	OK
ii. When applying Option II or Option III, the financial/economic analysis shall be based on parameters that are standard in the market, considering the specific characteristics of the project type, but not linked to the subjective profitability expectation or risk profile of a particular project developer. Only in the particular case where the project activity can be implemented by the project participant, the specific financial/economic situation of the company undertaking the project activity can be considered.	EB 39	Ann 10	The equity IRR is applied by considering parameters that are standard in the market.	OK	OK
iii. Discount rates and benchmarks shall be derived from: (a) Government bond rates, increased by a suitable risk premium to reflect private investment and/or the project type, as substantiated by an independent (financial) expert or documented by official publicly available financial data; (b) Estimates of the cost of financing and required return on capital (e.g. commercial lending rates and guarantees required for the country and the type of project activity concerned), based on bankers views	EB 39	Ann 10	The equity benchmark has been based on the return on equity (ROE) analysis.	OK	OK



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and private equity investors/funds' required return on comparable projects; (c) A company internal benchmark (weighted average capital cost of the company), only in the particular case referred to above in 2. The project developers shall demonstrate that this benchmark has been consistently used in the past, i.e. that project activities under similar conditions developed by the same company used the same benchmark; (d) Government/official approved benchmark where such benchmarks are used for investment decisions; (e) Any other indicators, if the project participants can demonstrate that the above Options are not applicable and their indicator is appropriately justified. Please specify benchmark and justify.					
q. Has the below guideline followed for Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III)?	EB 39	Ann 10			
i. Calculate the suitable financial indicator for the proposed CDM project activity and, in the case of Option II above, for the other alternatives. Include all relevant costs (including, for example, the investment cost, the operations and maintenance costs), and revenues (excluding CER revenues, but possibly including inter alia subsidies/fiscal incentives, ODA, etc, where applicable), and, as appropriate, non-market cost and benefits in	EB 39	Ann 10	Option III has been used by the Project Participant and benchmark analysis has been considered.	OK	OK



## VALIDATION REPORT

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the case of public investors if this is standard practice for the selection of public investments in the host country.					
ii. Present the investment analysis in a transparent manner and provide all the relevant assumptions, preferably in the CDM-PDD, or in separate annexes to the CDM-PDD.	EB 39	Ann 10	Yes, the investment analysis of the project activity is presented in the IRR excel sheet. Also the benchmark analysis is provided in a separate excel sheet.	OK	OK
iii. Justify and/or cite assumptions.	EB 39	Ann 10	Yes	OK	OK
iv. In calculating the financial/economic indicator, the project's risks can be included through the cash flow pattern, subject to project-specific expectations and assumptions.	EB 39	Ann 10	Not applicable	OK	OK
v. Assumptions and input data for the investment analysis shall not differ across the project activity and its alternatives, unless differences can be well substantiated.	EB 39	Ann 10	No	OK	OK
vi. Present in the CDM-PDD a clear comparison of the financial indicator for the proposed CDM activity. Please specify details for above.	EB 39	Ann 10	Yes, the financial indicator is explained in detail in Section B.5 of the PDD	OK	OK
r. Has the below guideline followed for Sub-step 2d: Sensitivity analysis (only applicable to Options II and III)? Include a sensitivity analysis that shows whether the conclusion regarding the financial/economic attractiveness is robust to reasonable variations in the critical assumptions.	EB 39	Ann 10	Yes, a sensitivity analysis has been provided in the webhosted PDD.	OK	OK
s. Has the outcome of Step 2 clearly mentioned with justification?	EB 39	Ann 10	Yes	OK	OK
t. In step 3: Barrier analysis have all the sub-steps	EB	Ann	Barrier analysis is not opted for by the Project	OK	OK



## VALIDATION REPORT

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as below been followed?	39	10	Participant for the project activity		
i. Sub-step 3a: Identify barriers that would prevent the implementation of the proposed CDM project activity;	EB 39	Ann 10	Not applicable	OK	OK
ii. Sub-step 3 b: Show that the identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed project activity).	EB 39	Ann 10	Not applicable	OK	OK
u. Has the below guideline followed for Sub-step 3a: Identify barriers that would prevent the implementation of the proposed CDM project?	EB 39	Ann 10	Not applicable	OK	OK
i. (a) Investment barriers: For alternatives undertaken and operated by private entities: Similar activities have only been implemented with grants or other non-commercial finance terms. No private capital is available from domestic or international capital markets due to real or perceived risks associated with investment in the country where the proposed CDM project activity is to be implemented, as demonstrated by the credit rating of the country or other country investments reports of reputed origin.	EB 39	Ann 10	Not applicable	OK	OK
ii. (b) Technological barriers: Skilled and/or properly trained labour to operate and maintain the technology is not available in the relevant country/region, which leads to an unacceptably high risk of equipment disrepair and malfunctioning or other underperformance;	EB 39	Ann 10	Not applicable	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Lack of infrastructure for implementation and logistics for maintenance of the technology, Risk of technological failure: the process/technology failure risk in the local circumstances is significantly greater than for other technologies that provide services or outputs comparable to those of the proposed CDM project activity, as demonstrated by relevant scientific literature or technology manufacturer information, The particular technology used in the proposed project activity is not available in the relevant region.					
iii. (c) Barriers due to prevailing practice: The project activity is the “first of its kind”.	EB 39	Ann 10	Not applicable	OK	OK
iv. (d) Other barriers, preferably specified in the underlying methodology as examples.	EB 39	Ann 10	Not applicable	OK	OK
v. Has the outcome from Step 3a clearly mentioned in PDD?	EB 39	Ann 10	Not applicable	OK	OK
w. Has the below guideline followed for Sub-step 3 b: Show that the identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed project activity)?	EB 39	Ann 10	Not applicable	OK	OK
i. If the identified barriers also affect other alternatives, explain how they are affected less strongly than they affect the proposed CDM project activity. In other words, demonstrate that the identified barriers do not prevent the implementation of at least one of the	EB 39	Ann 10	Not applicable	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
alternatives. Any alternative that would be prevented by the barriers identified in Sub-step 3a is not a viable alternative, and shall be eliminated from consideration.					
ii. Provide transparent and documented evidence, and offer conservative interpretations of this documented evidence, as to how it demonstrates the existence and significance of the identified barriers and whether alternatives are prevented by these barriers.	EB 39	Ann 10	Not applicable	OK	OK
iii. The type of evidence to be provided should include at least one of the following: (a) Relevant legislation, regulatory information or industry norms; (b) Relevant (sectoral) studies or surveys (e.g. market surveys, technology studies, etc) undertaken by universities, research institutions, industry associations, companies, bilateral/multilateral institutions, etc; (c) Relevant statistical data from national or international statistics; (d) Documentation of relevant market data (e.g. market prices, tariffs, rules); (e) Written documentation of independent expert judgments from industry, educational institutions (e.g. universities, technical schools, training centres), industry associations and others. Please specify.	EB 39	Ann 10	Not applicable	OK	OK
x. Has the outcome from Step 3 clearly mentioned in PDD?	EB 39	Ann 10	Not applicable	OK	OK
y. In step 4: Common practise analysis have all the	EB	Ann			



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
sub-steps as below followed?	39	10			
i. Sub-step 4a: Analyze other activities similar to the proposed project activity;	EB 39	Ann 10	Yes, in sub-step 4a, the Project Participant has described the criteria for similar type of project activity for comparison with the proposed CDM project activity.	OK	OK
ii. Sub-step 4b: Discuss any similar Options that are occurring.	EB 39	Ann 10	In sub-step 4b, the Project Participant has analyzed similar projects to the CDM project activity.	OK	OK
z. Has the below guideline followed for Sub-step 4a: Analyze other activities similar to the proposed project activity? Provide an analysis of any other activities that are operational and that are similar to the proposed project activity. Other CDM project activities are not to be included in this analysis. Provide documented evidence and, where relevant, quantitative information. On the basis of that analysis, describe whether and to which extent similar activities have already diffused in the relevant region.	EB 39	Ann 10	Yes, in sub-step 4a, the Project Participant has provided an analysis of other projects which are similar to the proposed CDM project activity. The data is sourced from the Indian Wind Power Directory 2010, which is considered to be a reliable source.	OK	OK
aa. Has the below guideline followed for Sub-step 4b: Discuss any similar Options that are occurring? If similar activities are identified, then it is necessary to demonstrate why the existence of these activities does not contradict the claim that the proposed project activity is financially/economically unattractive or subject to barriers. This can be done by comparing the proposed project activity to the other similar activities, and pointing out and explaining	EB 39	Ann 10	Yes, similar projects as that of the project activity have been identified and then it has been demonstrated that all the identified projects were either registered or under validation as CDM projects.	OK	OK





## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
essential distinctions between them that explain why the similar activities enjoyed certain benefits that rendered it financially/economically attractive (e.g., subsidies or other financial flows) and which the proposed project activity cannot use or did not face the barriers to which the proposed project activity is subject. In case similar projects are not accessible, the PDD should include justification about non-accessibility of data/information.					
bb. Has the outcome from Step 4 clearly mentioned in PDD?	EB 39	Ann 10	Yes	OK	OK
cc. Has it been proved that the project is additional?	EB 39	Ann 10	Yes	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
<b><i>a. Prior consideration of the clean development mechanism</i></b>					
a. Is the project activity start date prior to the date of publication of the PDD for stakeholder comments?	VVM	98	Yes	OK	OK
b. If yes, were the CDM benefits considered necessary in the decision to undertake the project as a proposed CDM project activity?	VVM	98	Yes, CDM benefits were considered in the decision to undertake the project activity as a CDM project activity. The validation team reviewed the copy of extract of the Board resolution of the project participant dated 09/07/2010 wherein it was indicated that the project activity is not viable only through sale of electricity to grid. It further states the such kind of projects are eligible for CDM revenues and the financial risks associated with the project activity could be mitigated through revenues from CER's.	OK	OK
c. Is the start date of the project activity, reported in the PDD, in accordance with the "Glossary of CDM terms", which states that "The starting date of a CDM project activity is the earliest date at which either the implementation or construction or real action of a project activity begins."?	VVM	99	Yes, the start date of the project activity is in line with the CDM glossary of terms. The start date is indicated to be the date of purchase order for the WEG.	OK	OK
d. Does the project activity require construction, retrofit or other modifications?	VVM	99	Yes, the project activity requires construction.	OK	OK
e. If yes, is it ensured that the date of commissioning cannot be considered as the project activity start date?	VVM	99	Yes, the project activity start date is taken as the date of purchase order for the WEG's.	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
f. Is it a new project activity (a project activity with a start date on or after 02 August 2008) or an existing project activity (a project activity with a start date before 02 August 2008)?	VVM	100	Yes, the project activity is a new project with a start date of 10/07/2009 which is after the 2 <sup>nd</sup> August 2008.	OK	OK
g. For a new project, for which PDD has not been published for global stakeholder consultation or a new methodology proposed to the CDM Executive Board before the project activity start date, had PPs informed the host Party DNA and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status? (Provide reference to such confirmation from host Party DNA and UNFCCC secretariat).	VVM	101	<p>Yes, the project participant has informed the Indian DNA and the UNFCCC in writing of the commencement of the project activity and their intention to seek CDM status.</p> <p>The project participant has informed the DNA through email dated 30/10/2010 which was confirmed by the Indian DNA through return email dated 02/11/2010.</p> <p>The project participant has informed the UNFCCC on 16/10/2010 which has been acknowledged by the UNFCCC through return email dated 26/10/2010. The same was also verified by the validation team from the UNFCCC website.</p>	OK	OK
h. For an existing project activity, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation, are the following evidences provided:	VVM	102	Not applicable	OK	OK
ii. evidence that must indicate that awareness of the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project, including, inter alia:	VVM	102	Not applicable	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
a. minutes and/or notes related to the consideration of the decision by the Board of Directors, or equivalent, of the project participant, to undertake the project as a proposed CDM project activity?	VVM	102	Not applicable	OK	OK
iii. reliable evidence from project participants that must indicate that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation, including, inter alia:	VVM	102	Not applicable	OK	OK
a. contract with consultants for CDM/PDD/methodology services?	VVM	102	Not applicable	OK	OK
b. Emission Reduction Purchase Agreements or other documentation related to the sale of the potential CERs (including correspondence with multilateral financial institutions or carbon funds)?	VVM	102	Not applicable	OK	OK
c. evidence of agreements or negotiations with a DOE for validation services?	VVM	102	Not applicable	OK	OK
d. submission of a new methodology to the CDM Executive Board?	VVM	102	Not applicable	OK	OK
e. publication in newspaper?	VVM	102	Not applicable	OK	OK
f. interviews with DNA?	VVM	102	Not applicable	OK	OK
g. earlier correspondence on the project with the DNA or the UNFCCC secretariat?	VVM	102	Not applicable	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
h. Has the chronology of events including time lines been appropriately captured and explained/detailed in the PDD?	VVM	102	The chronology of events since the date of investment decision is not provided in the PDD. Please provide the same.	CL 10	OK
<b>b. Identification of alternatives</b>					
a. Does the approved methodology that is selected by the proposed CDM project activity prescribe the baseline scenario and hence no further analysis is required?	VVM	105	Yes, the approved methodology, ACM 0002, version 12.1.0, that is selected by the proposed CDM project activity prescribe the baseline scenario and hence no further analysis is required.	OK	OK
b. If no, does the PDD identify credible alternatives to the project activity in order to determine the most realistic baseline scenario?	VVM	105	Not applicable	OK	OK
c. Does the list of alternatives given in the PDD ensure that:	VVM	106			
i. the list of alternatives includes as one of the options that the project activity is undertaken without being registered as a proposed CDM project activity?	VVM	106	Not applicable	OK	OK
ii. the list contains all plausible alternatives that the DOE, on the basis of its local and sectoral knowledge, considers to be viable means of supplying the outputs or services that are to be supplied by the proposed CDM project activity?	VVM	106	Not applicable	OK	OK
iii. the alternatives comply with all applicable and enforced legislation?	VVM	106	Not applicable	OK	OK
<b>c. Investment analysis</b>					
a. Has investment analysis been used to	VVM	108	Yes, investment analysis has been used to	OK	OK



## VALIDATION REPORT

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demonstrate the additionality of the proposed CDM project activity?			demonstrate additionality of the proposed project activity.		
b. If yes, does the PDD provide evidence that the proposed CDM project activity would not be:	VVM	108			
i. the most economically or financially attractive alternative?	VVM	108	Yes	OK	OK
ii. economically or financially feasible, without the revenue from the sale of certified emission reductions (CERs)?	VVM	108	Yes	OK	OK
c. Was this shown by one of the following approaches?	VVM	109			
i. The proposed CDM project activity would produce no financial or economic benefits other than CDM-related income. Document the costs associated with the proposed CDM project activity and the alternatives identified and demonstrate that there is at least one alternative which is less costly than the proposed CDM project activity.	VVM	109	No, this approach is not selected because the project activity would produce economic benefits, other than CDM revenues, viz; revenues through sale of power to the State Electricity Utility.	OK	OK
ii. The proposed CDM project activity is less economically or financially attractive than at least one other credible and realistic alternative.	VVM	109	No	OK	OK
iii. The financial returns of the proposed CDM project activity would be insufficient to justify the required investment.	VVM	109	Yes, it is shown that the financial returns from the proposed project activity would be insufficient to justify the required investment	OK	OK
d. Is the period of assessment limited to the proposed crediting period of the CDM project activity?	EB 51	Ann 58	No, the period of assessment covers the lifetime of the project activity viz 20 years.	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
e. Does the project IRR and equity IRR calculations reflect the period of expected operation of the underlying project activity (technical lifetime), or - if a shorter period is chosen - include the fair value of the project activity assets at the end of the assessment period?	EB 51	Ann 58	The equity IRR calculations are conducted over the lifetime of the project activity viz 20 years.	OK	OK
f. Does the IRR calculation include the cost of major maintenance and/or rehabilitation if these are expected to be incurred during the period of assessment?	EB 51	Ann 58	The routine Operation and Maintenance costs associated with the project activity wind turbines are considered in the IRR working	OK	OK
g. Do the project participants justify the appropriateness of the period of assessment in the context of the underlying project activity, without reference to the proposed CDM crediting period?	EB 51	Ann 58	Yes, the appropriateness of 20 years for period of assessment is justified as it is the life of the project activity itself.	OK	OK
h. Does the cash flow in the final year include a fair value of the project activity assets at the end of the assessment period?	EB 51	Ann 58	Yes, the salvage value of land and that of the WEG's are taken into consideration at the end of the assessment period in the IRR working	OK	OK
i. Has the fair value been calculated in accordance with local accounting regulations where available, or international best practice?	EB 51	Ann 58	Yes, the salvage value for land is considered as the same as of date whereas the salvage value for the WEG is assumed as 10% of the project cost at the end of 20 years. This is an accepted value according to Indian accounting regulations	OK	OK
j. Does the fair value calculations include both the book value of the asset and the reasonable expectation of the potential profit or loss on the realization of the assets?	EB 51	Ann 58	Yes	OK	OK
k. Was depreciation, and other non-cash items related to the project activity, which have been	EB 51	Ann 58	Yes, depreciation has been added back to net profits for the purpose of calculating the IRR.	OK	OK





## VALIDATION REPORT

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deducted in estimating gross profits on which tax is calculated, added back to net profits for the purpose of calculating the financial indicator (e.g. IRR, NPV)?					
l. Has taxation been included as an expense in the IRR/NPV calculation in cases where the benchmark or other comparator is intended for post-tax comparisons?	EB 51	Ann 58	Yes, taxation has been included as an expense in IRR calculations	OK	OK
m. Are the input values used in all investment analysis valid and applicable at the time of the investment decision taken by the project participant?	EB 51	Ann 58	Yes, the input values are sourced from the offer of the WEG supplier dated 25/06/2010 which was prior to the decision date and hence was available to the project participant at the time of taking the investment decision.  However the parameter of tariff is considered from the revised RERC Tariff Order dated 06/08/2010. This is after the decision date. Project participant to provide detailed justification of why and how this document can be considered for determining the tariff of the project activity for IRR calculations.	CAR 9	OK
n. Is the timing of the investment decision consistent and appropriate with the input values?	EB 51	Ann 58	Please refer to above CAR.	--	OK
o. Are all the listed input values been consistently applied in all calculations?	EB 51	Ann 58	Yes	OK	OK
p. Does the investment analysis reflect the economic decision making context at point of the decision to recommence the project in the case of project activities for which implementation ceases	EB 51	Ann 58	Not applicable since the project activity is not a recommencement of an earlier project activity.	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
after the commencement and where implementation is recommended due to consideration of the CDM?					
q. Have project participants supplied the spreadsheet versions of all investment analysis?	EB 51	Ann 58	Yes, an IRR excel sheet has been provided	OK	OK
r. Are all formulas used in this analysis readable and all relevant cells be viewable and unprotected?	EB 51	Ann 58	Yes	OK	OK
s. In cases where the project participant does not wish to make such a spreadsheet available to the public has the PP provided an exact read-only or PDF copy for general publication?	EB 51	Ann 58	Not applicable	OK	OK
t. In case the PP wishes to black-out certain elements of the publicly available version, is it justifiable?	EB 51	Ann 58	Not applicable	OK	OK
u. Was the cost of financing expenditures (i.e. loan repayments and interest) included in the calculation of project IRR?	EB 51	Ann 58	Not applicable as the project activity uses an equity IRR for financial analysis	OK	OK
v. In the calculation of equity IRR, has only the portion of investment costs which is financed by equity been considered as the net cash outflow?	EB 51	Ann 58	Yes, the project activity is funded by 100 % equity.	OK	OK
w. Has the portion of the investment costs which is financed by debt been considered a cash outflow in the calculation of equity IRR? (this is not allowed)	EB 51	Ann 58	The project activity is completely funded by equity.	OK	OK
x. Was a pre-tax benchmark be applied?	EB 51	Ann 58	No	OK	OK
y. In cases where a post-tax benchmark is applied, is actual interest payable taken into account in	EB 51	Ann 58	Not applicable	OK	OK



## VALIDATION REPORT

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the calculation of income tax?					
z. In such situations, was interest calculated according to the prevailing commercial interest rates in the region, preferably by assessing the cost of other debt recently acquired by the project developer and by applying a debt-equity ratio used by the project developer for investments taken in the previous three years?	EB 51	Ann 58	The project activity is not having a debt component and is completely funded by equity.	OK	OK
aa. In cases where a benchmark approach is used is the applied benchmark appropriate to the type of IRR calculated?	EB 51	Ann 58	Yes, return of equity (ROE) has been used as the benchmark for an equity IRR.	OK	OK
bb. Has local commercial lending rates or weighted average costs of capital (WACC) selected as appropriate benchmarks for a project IRR?	EB 51	Ann 58	No	OK	OK
cc. Has required/expected returns on equity selected as appropriate benchmark for an equity IRR?	EB 51	Ann 58	Yes, return of equity (ROE) has been used as the benchmark for an equity IRR.		
dd. In case benchmarks supplied by relevant national authorities selected is it applicable to the project activity and the type of IRR calculation presented?	EB 51	Ann 58	Not applicable	OK	OK
ee. In the cases of projects which could be developed by an entity other than the project participant is the benchmark applied based on publicly available data sources which can be clearly validated?	EB 51	Ann 58	Yes, the benchmark is applied based on publicly available data sources like Government bond rates, risk premium, beta values etc.	OK	OK
ff. Have internal company benchmarks/expected returns (including those used as the expected return on equity in the calculation of a weighted average cost of capital - WACC) been applied in	EB 51	Ann 58	Not applicable	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
cases where there is only one possible project developer?					
gg. In such cases, have these values been used for similar projects with similar risks, developed by the same company or, if the company is brand new, would have been used for similar projects in the same sector in the country/region?	EB 51	Ann 58	Not applicable	OK	OK
hh. Has a minimum clear evidence of the resolution by the company's Board and/or shareholders been provided to the effect as above?	EB 51	Ann 58	Not applicable	OK	OK
ii. Has a thorough assessment of the financial statements of the project developer - including the proposed WACC - to assess the past financial behavior of the entity during at least the last 3 years in relation to similar projects been conducted?	EB 51	Ann 58	Not applicable	OK	OK
jj. Does the risk premiums applied in the determination of required returns on equity reflect the risk profile of the project activity being assessed, established according to national/international accounting principles? (It is not considered reasonable to apply the rate general stock market returns as a risk premium for project activities that face a different risk profile than an investment in such indices.)	EB 51	Ann 58	Yes	OK	OK
kk. Has an investment comparison analysis and not a benchmark analysis used when the proposed baseline scenario leaves the project participant no other choice than to make an investment to	EB 51	Ann 58	The project activity has applied a benchmark analysis since the proposed project activity has other alternatives than the project activity itself.	OK	OK



## VALIDATION REPORT

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supply the same (or substitute) products or services?					
II. Have variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues been subjected to reasonable variation (positive and negative) and the results of this variation been presented in the PDD and be reproducible in the associated spreadsheets?	EB 51	Ann 58	<p>Yes, the parameters of project capital cost, tariff, PLF, O&amp;M cost and debt to equity ratio has been described to be subjected to a sensitivity analysis.</p> <p>However project participant to clarify the following viz;</p> <ol style="list-style-type: none"> <li>1. Why is the parameter of debt equity ratio been considered in the first place for a sensitivity analysis is not clear since the project activity does not have a debt component?</li> <li>2. Reasons for subjecting the capital cost to only 10 % sensitivity is not clear ?</li> <li>3. Similarly reason for subjecting the O&amp;M cost to only 10 % variations is not clear.</li> <li>4. Even though the tariff is described to be fixed for the entire lifetime of the project activity, it has been observed that other wind projects in the region enjoy a higher tariff as compared to the tariff at the time of commissioning. Hence adequate justification is required for not subjecting the tariff to a sensitivity analysis.</li> </ol>	CL 11	OK
mm. Have a corrective action been raised for a variable to be included in the sensitivity analysis which constitute less than 20% and have a material impact on the analysis ?	EB 51	Ann 58	Yes, refer to above CL 11	--	OK



## VALIDATION REPORT

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nn. Is the range of variations selected is reasonable in the project context?	EB 51	Ann 58	Refer CL 11 above	--	OK
oo. Dos the variations in the sensitivity analysis at least cover a range of +10% and -10%, unless this is not deemed appropriate in the context of the specific project circumstances?	EB 51	Ann 58	Yes, however justification of why some of the parameters like capital cost, O&M cost etc are only subjected to + 10% is not provided in the PDD. Refer CL 11 above	--	OK
pp. In cases where a scenario will result in the project activity passing the benchmark or becoming the most financially attractive alternative, is an assessment done of the probability of the occurrence of this scenario in comparison to the likelihood of the assumptions in the presented investment analysis, taking into consideration correlations between the variables as well as the specific socio-economic and policy context of the project activity?	EB 51	Ann 58	Not applicable	OK	OK
qq. Was the plant load factor defined ex-ante in the CDM-PDD according to one of the following options:	EB 48	Ann 11			
i. The plant load factor provided to banks and/or equity financiers while applying the project activity for project financing, or to the government while applying the project activity for implementation approval?	EB 48	Ann 11	The project activity is funded by 100% equity, hence not applicable	OK	OK
ii. The plant load factor determined by a third party contracted by the project participants (e.g. an engineering company)?	EB 48	Ann 11	Yes, PLF determined by a thrid party has been used in the IRR calculations	OK	OK
rr. Was a thorough assessment of all parameters	VVM	111	Yes	OK	OK



## VALIDATION REPORT

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and assumptions used in calculating the relevant financial indicator, and determine the accuracy and suitability of these parameters using the available evidence and expertise in relevant accounting practices conducted?					
ss. Were the parameters cross-checked against third-party or publicly available sources, such as invoices or price indices?	VVM	111	Yes, the parameter of tariff and PLF has been cross-checked with the RERC Tariff Order 2010, which is available in a public domain	OK	OK
tt. Were feasibility reports, public announcements and annual financial reports related to the proposed CDM project activity and the project participants reviewed?	VVM	111	Project participant to provide the copies of the annual financial reports of the last 3 years.	CL 12	OK
uu. Was the correctness of computations carried out and documented by the project participants assessed?	VVM	111	Yes, the IRR and benchmark calculations were assessed by the financial experts of the DOE	OK	OK
vv. Was the sensitivity analysis by the project participants to determine under what conditions variations in the result would occur, and the likelihood of these conditions assessed?	VVM	111	No, project participant has not provided the sensitivity analysis to determine the conditions when the variations in the values would occur, in the PDD.	CL 13	OK
ww. Is the type of benchmark applied is suitable for the type of financial indicator presented?	VVM	112	Yes, ROE is a suitable benchmark for the equity IRR	OK	OK
xx. Do any risk premiums applied determining the benchmark reflect the risks associated with the project type or activity?	VVM	112	Yes	OK	OK
yy. To determine this, was it assessed whether it is reasonable to assume that no investment would be made at a rate of return lower than the benchmark by:	VVM	112			





## VALIDATION REPORT

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i. assessing previous investment decisions by the project participants involved?	VVM	112	Project participant to provide the details of the previous investment decisions (last 3 years) with supporting evidences. Project participant to further clarify whether the same benchmark as that for the project activity has been applied	CL 14	OK
ii. determining whether the same benchmark has been applied?	VVM	112	Project participant to clarify whether the same benchmark as that for the project activity has been applied	--	OK
iii. determining if there are verifiable circumstances that have led to a change in the benchmark?	VVM	112	To be verified	--	OK
zz. Did the project participants rely on values from Feasibility Study Reports (FSR) that are approved by national authorities for proposed CDM project activities?	VVM	113	No, the project participant relied on the offer from M/s Enercon, WEG supplier to the project activity and not FSR.	OK	OK
xx. If yes:	VVM	113	Not applicable	OK	OK
i. has the FSR been the basis of the decision to proceed with the investment in the project, i.e. that the period of time between the finalization of the FSR and the investment decision is sufficiently short for the DOE to confirm that it is unlikely in the context of the underlying project activity that the input values would have materially changed?	VVM	113	Not applicable	OK	OK
ii. Are the values used in the PDD and associated annexes fully consistent with the FSR?	VVM	113	Not applicable	OK	OK
iii. If not, was the appropriateness of the	VVM	113	Not applicable	OK	OK



## VALIDATION REPORT

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values validated?					
iv. On the basis of its specific local and sectoral expertise, is confirmation provided, by cross-checking or other appropriate manner, that the input values from the FSR are valid and applicable at the time of the investment decision?	VVM	113	Not applicable	OK	OK
<b>d. Barrier analysis</b>					
a. Has barrier analysis been used to demonstrated the additionality of the proposed CDM project activity?	VVM	115	Barrier analysis is not opted for by the Project Participant to demonstrate additionality	OK	OK
b. If yes, does the PDD demonstrate that the proposed CDM project activity faces barriers that:	VVM	115	Not applicable	OK	OK
i. prevent the implementation of this type of proposed CMD project activity?	VVM	115	Not applicable	OK	OK
ii. do not prevent the implementation of at least one of the alternatives?	VVM	115	Not applicable	OK	OK
c. Are there any issues that have a clear direct impact on the financial returns of the project activity, other than: risk related barriers, for example risk of technical failure, that could have negative effects on the financial performance; or barriers related to the unavailability of sources of finance for the project activity? {If yes, these issues cannot be considered barriers and shall be assessed by investment analysis. [Refer to (6.c) above]}	VVM	116	Not applicable	OK	OK
d. Were the barriers determined as real by:	VVM	117	Not applicable	OK	OK
i. assssing the available evidence and/or	VVM	117			



## VALIDATION REPORT

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undertaking interviews with relevant individuals (including members of industry associations, government officials or local experts if necessary) to determine whether the barriers listed in the PDD exist?					
ii. ensuring that existence of barriers is substantiated by independent sources of data such as relevant national legislation, surveys of local conditions and national or international statistics?	VVM	117	Not applicable	OK	OK
iii. Is existence of a barrier substantiated only by the opinions of the project participants? (If yes, this barrier cannot be considered as adequately substantiated)	VVM	117	Not applicable	OK	OK
e. Were the barriers determined as preventing the implementation of the project activity but not the implementation of at least one of the possible alternatives by applying local and sectoral expertise to judge whether a barrier or set of barriers would prevent the implementation of the proposed CDM project activity and would not equally prevent implementation of <i>at least one of</i> the possible alternatives, in particular the identified baseline scenario?	VVM	117	Not applicable	OK	OK
<b>e. Common practice analysis</b>					
a. Is this a proposed large-scale, or first-of-its kind small-scale project activity?	VVM	119	Yes, the project activity is a large scale project situated in the State of Rajasthan	OK	OK
b. If yes, was common practice analysis carried out as a credibility check of the other available	VVM	119	Yes, common practice analysis is carried out	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
evidence used by the project participants to demonstrate additionality?					
c. Was it assessed whether the geographical scope (e.g. defined region) of the common practice analysis is appropriate for the assessment of common practice related to the project activity's technology or industry type? (For certain technologies the relevant region for assessment will be local and for others it may be transnational/global.	VVM	120	Yes, the geographical scope of the common practice analysis is limited to the State of Rajasthan, where the project activity is located.	OK	OK
d. Was a region other than the entire host country chosen?	VVM	120	Yes, the state of Rajasthan where the project activity is located is considered for common practice analysis.	OK	OK
e. If yes, was the explanation why this region is more appropriate assessed?	VVM	120	Yes. In India, various states have their own electricity regulatory agencies for implementing and deciding tariff for the various projects in the State. The regulatory policies for these states are different from each other viz; benefits provided to the investors by way of sales tax benefits, other tax benefits etc and the tariff policy which includes the tariff for the power purchased by the State Electricity Utilities are different from each other. Hence the validation team agreed that the justification provided for considering the State of Rajasthan as the region for conducting the common practice is accepted.	OK	OK
f. Using official sources and local and industry expertise, was it determined to what extent similar and operational projects (e.g., using	VVM	120	Yes, project participant has specified the criteria for defining similar projects as that of the project activity. There are similar projects observed as	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
similar technology or practice), other than CDM project activities, have been undertaken in the defined region?			that of the project activity but it was observed that all these projects are also under CDM. The data was verified using the Indian Wind Power Directory, 2010		
g. Are similar and operational projects, other than CDM project activities, already "widely observed and commonly carried out" in the defined region?	VVM	120	Yes, similar projects are found in operation in the region.	OK	OK
h. If yes, was it assessed whether there are essential distinctions between the proposed CDM project activity and the other similar activities?	VVM	120	Yes, all the similar projects identified are also under CDM.	OK	OK
<b>7. Monitoring plan</b>					
a. Does the PDD include a monitoring plan?	VVM	122	Yes, the monitoring plan is described in Sections B.7.1 & B.7.2 of the webhosted PDD.	OK	OK
b. Is this monitoring plan based on the approved monitoring methodology applied to the proposed CDM project activity?	VVM	122	Yes, the monitoring plan is based on the approved monitoring methodology ACM 0002, version 12.1.0	OK	OK
c. Were the list of parameters required by the selected methodology identified?	VVM	123	Yes, as per the applied methodology, the net electricity supplied to the grid by the project activity in year y needs to be monitored. The same is described in Section B.7.1 of the PDD	OK	OK
d. Does the monitoring plan contains all necessary parameters?	VVM	123	No. 1. The name of one of the sub-station viz Tinwari, indicated in Section B.7.1 is incorrect, as was observed during the site visit 2. The metering system at the Enercon pooling station is incorrectly described. 3. It is not clear as to how the parameter of EGJMR, export & EGJMR, import is used in	CAR 10	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<p>the overall emission reduction calculations.</p> <p>4. In Section B.7.2, it is indicated that the net electricity supplied to the grid by the project activity is metered. Project Participant to clarify whether the net electricity can be metered or is it a calculated value.</p> <p>5. The method of cross-checking is indicated to be from the invoices, however the same is required to be done with the sales receipts from the State Electricity Utility.</p> <p>6. It is not clear as to who is the responsible entity for conducting the Case 1 &amp; Case 2 methods of apportioning as described in Section B.7.2 of the PDD.</p>		
e. Are the parameters clearly described?	VVM	123	Please refer to CAR above	--	OK
f. Does the means of monitoring described in the plan comply with the requirements of the methodology?	VVM	123	Yes, the means of monitoring described in the PDD complies with the requirements of the applied methodology	OK	OK
g. Are all data and parameters monitored as per monitoring methodology?	ACM	0002 v.12.1	Yes	OK	OK
h. Are all data collected as part of monitoring archived electronically and kept at least for 2 years after the end of the last crediting period?	ACM	0002 v.12.1	Yes	OK	OK
i. Are 100% of the data monitored, if not indicated otherwise?	ACM	0002 v.12.1	Yes	OK	OK
j. Are measurements conducted with calibrated measurement equipment according to relevant industry standards?	ACM	0002 v.12.1	Yes, the main and back-meters of the project activity are indicated to be calibrated once in a year.	OK	OK
k. Are the monitoring provisions in the tools referred	ACM	0002	Not applicable	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
to in the methodology correctly applied?		v.12.1			
l. Are the monitoring arrangements described in the monitoring plan feasible within the project design?	VVM	123	Yes	OK	OK
m. Are the following means of implementation of the monitoring plan sufficient to ensure that the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex post and verified:	VVM	123			
i. data management procedures?	VVM	123	All the data from the project activity is described to be archived in paper and electronic form for 2 years beyond the crediting period.	OK	OK
ii. quality assurance procedures?	VVM	123	Refer CAR 10 above	--	OK
iii. quality control procedures?	VVM	123	Refer CAR 10 above	--	OK
<b>8. Sustainable development</b>					
a. Does the CDM project activity assists Parties not included in Annex I to the Convention in achieving sustainable development?	VVM	125	Yes, the CDM project activity assists parties not included in Annex 1 to achieve sustainable development	OK	OK
b. Does the letter of approval by the DNA of the host Party confirm the contribution of the proposed CDM project activity to the sustainable development of the host Party?	VVM	126	Project Participant to provide a copy of the HCA received from Indian DNA	--	OK
<b>9. Local stakeholder consultation</b>					
a. Were local stakeholders (public, including individuals, groups or communities affected, of likely to be affected, by the proposed CDM project activity or actions leading to the implementation of such an activity) invited by the	VVM	128	Yes, the local stakeholders were invited through an advertisement in the local newspaper dated 12/10/2010 inviting comments. They were further given time till 07/11/2010 to send their comments to the project participant.	--	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
PPs to comment on the proposed CDM project activity prior to the publication of the PDD on the UNFCCC website?			The local stakeholder meeting was conducted by the project participant on 25 & 27/10/2010, however it is not clear as when the meeting took place at Jaiselmer and at Jodhpur.		
b. Have comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity been invited?	VVM	129	Yes, the representation of local stakeholders from the nearby villages is considered relevant for the project activity.	OK	OK
c. Is the summary of the comments received as provided in the PDD complete?	VVM	129	Yes, however the identity of the stakeholders who have made comments is not indicated in Section E.2, rather they are described in Section E.3.	--	OK
d. Have the project participants taken due account of any comments received and described this process in the PDD?	VVM	129	There were no negative comments received from the local stakeholders.	OK	OK
<b>10. Environmental impacts</b>					
a. Have the project participants submitted documentation on the analysis of the environmental impacts of the project activity?	VVM	131	As per the Indian environmental legislations, an analysis on the environmental impacts of the project activity is not necessary to be submitted.	OK	OK
b. Have the project participants undertaken an analysis of environmental impacts?	VVM	132	No	OK	OK
c. Does the host Party require an environmental impact assessment?	VVM	132	No	OK	OK
d. If yes, have the project participants undertaken an environmental impact assessment?	VVM	132	Not applicable	OK	OK





## VALIDATION REPORT

**TABLE 2: RESOLUTION OF CORRECTIVE ACTION AND CLARIFICATION REQUESTS**

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
<b>CL 1</b> There is only one party involved in the project activity as per the webhosted PDD viz; India. Project participant to provide the copy of the HCA issued by the Indian DNA.	Refer 1.a of Table 1 above	PP has applied for HCA approval and copy of same will be provided to DOE on receiving the approval.	The copy of the HCA vide reference no. 4/12/2011-CCC dated 24/05/2011 for the project activity issued by the Indian DNA has been provided to the validation team.  Hence the clarification request is closed.



## VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
<p><b>CAR 1</b></p> <p>The names of the villages indicated in Section A.4.1.3 and Section A.4.1.4 for Jodhpur district do not match with other. Please clarify along with supporting evidences.</p> <p>The longitude value indicated in Section A.4.1.4 and in Appendix 1 of the webhosted PDD do not match for 70°56'13.0"</p>	<p>Refer 3.f.ii of Table 1 above</p>	<p>Correction has been made in PDD and name of villages can be cross checked from commissioning certificates which has been submitted to DOE.</p> <p>Typo error in lat –log has been rectified in Appendix 1 of revised PDD.</p>	<p>The commissioning certificates of all the WTG of the project activity has been submitted to the validation team. The review of the commissioning certificate indicates the names of the villages as Ugawa, Kita and Korwa in Jaiselmer District and villages Salodi and Jelu in Jodhpur district. The same has been corrected in Section A.4.1.4 of the revised PDD.</p> <p>The typological error in the longitude value in Appendix 1 of the webhosted PDD has been corrected.</p> <p>Based on the above observations, the CAR is closed.</p>
<p><b>CL 2</b></p> <p>Further it is stated that there is a technology transfer from Enercon GmbH to Enercon. Project Participant to clarify the same.</p>	<p>Refer 3.h.i of Table 1 above</p>	<p>We would like to clarify to DOE that technology of E-53 is being owned by Enercon GMBH which is the parent company and technology of E-53 has been transferred by Enercon GMBH to Enercon (India) Limited to manufacture E-</p>	<p>The validation team noted that technology employed in the WEG's of the project activity has been transferred from the parent company of M/s Enercon.</p>



## VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		53 WEGs in India. Enercon (India) Limited is WEG manufacturer and supplier in India for project activity.	Based on the above, the clarification request is closed.
<b>CL 3</b> Please provide a copy of the CER excel sheet	Refer 3.i of Table 1 above	CER excel sheet is attached herewith the DVR reply.	The copy of the CER sheet is provided to the validation team. Hence the clarification request is closed.
<b>CL 4</b> The project activity is justified to be green field project and not a capacity addition. Project Participant to justify as to why the project activity is not considered as a capacity addition as the Project Participant has another wind project in the State of Tamil Nadu (which is also under CDM)	Refer 3.I.i of Table 1 above	<p>As per ACM0002 version 12.1.0. "A capacity addition is an increase in the installed power generation capacity of an existing power plant through: (i) the installation of a new power plant beside the existing power plant/units, or (ii) the installation of new power units, additional to the existing power plant/units. The existing power plant/units continue to operate after the implementation of the project activity".</p> <p>Since there is no existing power plant of Vish Wind in Rajasthan at Jaisalmer &amp; Jodhpur site under regulatory regime of state of Rajasthan (RERC). Hence the capacity in the other state cannot be termed as capacity addition.</p>	<p>The validation team observed that the Project Participant has initiated the process of installation of similar wind power projects in other States of India viz; TamilNadu, Gujarat and Karnataka. Since the site of these installations are in a totally different state in India, and further since the sub-stations to which these wind turbines are connected to are different, the validation team accepts that the proposed project activity is not a capacity addition.</p> <p>Based on the above observations, the validation team confirms that the proposed CDM project activity is a Greenfield project since the proposed project activity is the</p>



## VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
			<p>installation of a new power plant at the Jodhpur and Jaiselmer sites in Rajasthan State where there were no renewable power plant of the Project Participant prior to the implementation of the project activity. Hence the same is accepted.</p> <p>Based on the above observations, the clarification request is closed.</p>
<b>CAR 2</b> The explanation provided in the flow diagram of the project boundary in Section B.3 of the PDD is not correct w.r.t the sub-station at Jodhpur since the sub-station name was not Tinwari, as observed at site.	Refer 3.m.ii of Table 1 above	As per DOE comment correction has been made and accordingly sub-station name has been revised to PS-8 Narwa.	<p>The name of the sub-station to which the WEG's of the project activity are connected to at Jodhpur has been corrected from Tinwari to PS-8 Narwa in Section B.3 of the revised PDD.</p> <p>Hence the CAR is closed.</p>
<b>CL 5</b> It is not clear whether the parameters of OM, BM and CM are fixed ex-ante, throughout the crediting period.	Refer 3.q.i of Table 1 above	The emission factor of project activity is fixed ex-ante for entire crediting period. Please refer Section B.6.2 and para 3 of section B.7.2.	<p>The parameters of OM, BM and CM are described to be fixed ex-ante in Section B.6.2 of the revised PDD.</p> <p>Hence the clarification request is closed.</p>
<b>CAR 3</b> 1. The metering system is described in common	Refer	1. Metering system has been revised in	1. The detailed metering system at



## VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
<p>for both the sites viz Jodhpur and Jaiselmer. However during the site visit, it was observed that the metering system at Jodhpur is different than the metering system at Jaiselmer.</p> <p>2. Also the name of one of the sub-station is indicated as Tinwari, however it was observed during the site visit, that the sub-station name is different at Jodhpur.</p>	3.t.ii.b of Table 1 above	<p>Sections B.7.1 &amp; B.7.2 as per DOE comment.</p> <p>2. As per DOE comment correction has been made and accordingly sub-station name has been revised to PS-8 Narwa.</p>	<p>the 2 locations viz; Jodhpur and Jaiselmer site has been described in Section B.7.1 &amp; B.7.2 of the revised PDD.</p> <p>2. The name of the sub-station at Jodhpur site has been corrected from Tinwari to PS-8 Narwa in Section B.7.1 &amp; B.7.2 of the revised PDD.</p> <p>Based on the above observations, the CAR is closed.</p>
<p><b>CAR 4</b></p> <p>The description of the metering system is not described separately for the Jodhpur and Jaiselmer sites as it was observed that the metering system at these 2 sites are slightly different from each other.</p>	Refer 3.u.i of Table 1 above	Layout of metering system and metering arrangement has been revised as per actual practice in revised PDD. Refer section B.7.2 of PDD.	<p>The description of the metering system has been detailed in Section B.7.1 &amp; B.7.2 of the revised PDD.</p> <p>Hence the CAR is closed.</p>
<p><b>CAR 5</b></p> <p>Description of how the start date has been determined and the description of the evidence to support the start date is not provided</p>	Refer 3.w.ii of Table 1 above	<p>As per the CDM –PDD guideline on starting date</p> <p>“The starting date of a CDM project activity is the earliest of the date(s) on which the implementation or construction or real action of a project activity begins/has begun”.</p>	<p>The validation team reviewed the P.O's placed by the project participant for all the components of the project activity including P.O for WEG, electrical work, foundation work etc. and observed that all the P.O were raised on 10/07/2010. Hence the project participant has</p>



## VALIDATION REPORT

Draft report clarifications and action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		The PP placed all the purchase order for the project activity dated 10/07/2010 on Enercon (India) Limited. And since this is the earliest date on which real action started for the project activity, therefore has been selected as the project start date. The explanation has been added in section C.1.1.	considered this date as the start date of the project activity. The same has also been included in Section C.1.1 of the revised PDD. Based on the above clarification, the CAR is closed.
<b>CL 6</b> It is not clear in Section E.1 of the webhosted PDD as to when the local stakeholder meeting took place at Jodhpur and when was it conducted at Jaiselmer.	Refer 3.gg.i of Table 1 above	Local stakeholder meeting was conducted at Jaisalmer on 25th Oct 2010 & at Jodhpur on 27th October 2010 in the state of Rajasthan. Please refer section E.1 of PDD.	The local stakeholder meeting dates has now been described separately for the Jodhpur and Jaisalmer sites in Section E.1 of the revised PDD. Hence the clarification request is closed.
<b>CAR 6</b> Identity of the local stakeholders that have made comments is not presented in Section E.2 of the PDD rather it is incorrectly indicated in Section E.3 of the PDD.	Refer 3.hh.i of Table 1 above	Correction has been made in revised PDD.	The identity of the local stakeholders who made comments at the stakeholder meeting at Jodhpur and Jaisalmer sites have been described separately in Section E.2 of the revised PDD. Hence the CAR is closed.
<b>CL 7</b> Background information on the calculation of the emission factor is provided in Annex 3. However	Refer 3.ll of Table	CEA database version no 5.0 has been used in calculation of emission factor and	The reference of the version of the CEA database as Version 5 has been included in the description in



## VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
the version of the CEA database is not indicated in Annex 3.	1 above	same has been incorporated in annex 3.	Annex 3 of the revised PDD. Hence the clarification request is closed.
<b>CL 8</b> Project Participant to provide the copies of the annual reports of the last 3 years and further provide an undertaking on the company letterhead regarding no installation of power project prior to this project activity	Refer 5.b.a.i of Table 1 above	Copies of annual report and undertaking regarding no installation of power project prior to this project activity is attached with the DVR reply for DOE reference.	Copies of the annual audited report of the project participant for the financial years 2007-08, 2008-09 & 2009-10 has been provided to the validation team. There is no mention of installation of any wind power projects in these reports.  Based on this observation, the clarification request is closed.
<b>CL 9</b> The Project Participant has not justified the applicability to the tool applied for calculating the emission factor and also the tool for demonstration of additionality	Refer 5.b.h of Table 1 above	The project activity is located in the state of Rajasthan which falls under NEWNE grid. Therefore as per the paragraph 12 of the applied methodology, the baseline emission factor is calculated as combined margin consisting of a combination of operating margin and build margin factors according to the procedures prescribed in the latest tool for calculating the emission factor for an electricity system, version 2.0. The step by step procedure to compute the emission factor is described	The step-by-step procedure for determining the emission factor has been provided in Section B.6.1 of the revised PDD. However the validation team noted that the CEA database on the basis of which the emission factor is calculated also have the same approach as mentioned in the Tool to calculate the emission factor and hence accepted.  The latest version of the



## VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		<p>in B.6.1 of the PDD.</p> <p>As per ACM 0002 version 12.1.0, the additionality of the project shall be conducted using “ tool for demonstration and assessment of additionality” version 5.2. Same has been incorporated in the PDD.</p>	<p>additionality tool Version 05.2 has been used by the project participant to demonstrate additionality.</p> <p>Based on the above observations, the clarification request is closed.</p>
<p><b>CAR 7</b></p> <p>Description of the various policies and circumstances relevant to the baseline has not been identified in the PDD</p>	<p>Refer 5.d.I of Table 1 above</p>	<p>There are no national policies or circumstances relevant to the baseline of the proposed CDM project activity which mandate to install the proposed activity.</p>	<p>The validation team noted that there are no national policies or circumstances which mandate the installation of the proposed project activity.</p> <p>Hence the CAR is closed.</p>
<p><b>CAR 8</b></p> <p>The PDD does not describe why Sub-step 2a and sub-step 2b is not chosen</p>	<p>Refer 6.I.I of Table 1 above</p>	<p>The project activity generates revenue by selling electricity to State electricity Board/ DISCOM, thus simple cost analysis (option I) cannot be applied to the proposed CDM project activity.</p> <p>The alternative to the project activity is continuation of current situation, i.e. no project activity and equivalent amount of energy would have been produced by the</p>	<p>Section B.5 of the revised PDD provides the explanation required for sub-step 2(a) and also provides justification for excluding Option I and Option II as mandated by sub-step 2(b).</p> <p>The project participant has used Option III – Benchmark analysis of sub-step 2(b) for demonstrating investment analysis.</p>





## VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		<p>grid electricity system. This alternative will not require capital investment; hence investment comparison analysis (option II) cannot be applied.</p> <p>In this case the benchmark analysis (option III) is most appropriate.</p> <p>Same explanation has been added in section B.5 of revised PDD.</p>	Hence the CAR is closed.
<p><b>CL 10</b> The chronology of events since the date of investment decision is not provided in the PDD. Please provide the same.</p>	Refer a.h of Table 1 above	The chronology of events has been added in section B.5 of revised PDD.	<p>The chronology of events has been detailed in Section B.5 of the revised PDD.</p> <p>Hence the clarification request is closed.</p>
<p><b>CAR 9</b> The parameter of tariff is considered from the revised RERC Tariff Order dated 06/08/2010. This is after the decision date. Project participant to provide detailed justification of why and how this document can be considered for determining the tariff of the project activity for IRR calculations.</p>	Refer c.m of Table 1 above	<p>We would like to submit to DOE that the investment decision was done based on the tariff order Dated 31 March 2010 only.</p> <p>The tariff as per tariff order dated 31 mar 2010 is Rs. 3.83 per kWh and as per tariff order dated 06 Aug 2010 is Rs. 3.87 per kWh. Therefore being conservative PP</p>	The validation team reviewed the RERC tariff order dated 31/03/2010 wherein in para 3, the tariff for wind power projects in the districts of Jaiselmer and Jodhpur has been indicated to be INR 3.83/kwH. This tariff order was available with the project participant at the time of



## VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		has used the tariff of Rs. 3.87 per KWh.	<p>investment decision for the proposed project activity.</p> <p>Further to this, a revision to the RERC tariff order was available dated 06/08/2010 wherein the tariff of wind power projects in the districts of Jaisalmer and Jodhpur has been increased to INR 3.87/kWh.</p> <p>Hence the project participant has considered a tariff rate of INR 3.87/kWh which the validation team accepts a conservative approach.</p> <p>Hence the CAR is closed.</p>



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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
<p><b>CL 11</b> Project participant to clarify the following viz;</p> <ol style="list-style-type: none"> <li>1. Why is the parameter of debt equity ratio been considered in the first place for a sensitivity analysis is not clear since the project activity does not have a debt component?</li> <li>2. Reasons for subjecting the capital cost to only 10 % sensitivity is not clear ?</li> <li>3. Similarly reason for subjecting the O&amp;M cost to only 10 % variations is not clear.</li> </ol>	Refer c.II of Table 1 above	<ol style="list-style-type: none"> <li>1. The project was envisaged as 100% equity finance. However the PP has taken loan for Rs. 578.8 Million post invest decision. Therefore the sensitivity is conducted on debt equity ratio to cover the debt amount of Rs. 578.8 Million which is 64.99% of total project cost.</li> <li>2. As per actual purchase order, the total project cost is INR 1628.00 million which is 7.30% below than the offer provided by the supplier at the time of decision making. The sensitivity is conducted at +/-10% which covers the range of actual project cost.</li> <li>3. We would like to clarify to DOE that as per the para18 of "Guidelines on the assessment of investment analysis" ver 03.1, as a general point of departure variations in the sensitivity analysis should at least cover a range of +10% and -10%, unless this is not deemed appropriate in the context of the specific project circumstances.  The O&amp;M contract for the project</li> </ol>	<ol style="list-style-type: none"> <li>1. The validation team observed that the Project Participant has taken loan from banks of an amount equivalent to INR 578.8 million and therefore the debt equity ratio is 36:64. This debt equity ratio is worked out by considering the actual project cost of INR 1628 million based on the purchase orders since the value of the debt equity ratio was available to the project participant, post the investment decision. Hence the Project Participant has subjected this parameter of debt equity ratio to a sensitivity analysis of 36:64. Further this is the first investment of the Project Participant in renewable energy projects. Hence data related to the debt equity ratio prior to the project activity is not available. The validation team confirms that equity IRR with the sensitivity analysis on the</li> </ol>



## VALIDATION REPORT

Draft report clarifications and action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
<p>4. Even though the tariff is described to be fixed for the entire lifetime of the project activity, it has been observed that other wind projects in the region enjoy a higher tariff as compared to the tariff at the time of commissioning. Hence adequate justification is required for not subjecting the tariff to a sensitivity analysis.</p>		<p>activity is not yet signed and therefore being conservative PP has conducted sensitivity at a decrease of 50% in O&amp;M and 5% escalation in O&amp;M.</p> <p>4. We would like to clarify to DOE that as per the tariff order dated 31 Mar 2010, State electricity commission has fixed the tariff for the period of 20 years (Lifetime) for the wind power projects and which is not subject to change throughout the life time. Though being conservative PP has done 10% sensitivity on tariff.</p>	<p>parameter of debt equity ratio does not cross the benchmark.</p> <p>2. The validation reviewed the cost indicated in the various P.O raised for the project activity and observed that the total project cost comes out to be INR 1628 million which is about 7.31% lower than the project cost indicated in the initial offer letter of the WEG supplier. Hence the project participant has subjected the parameter of project capital cost to a sensitivity analysis up to + 10%, which is also prescribed by the EB guidelines. The same has been described in Section B.5 under sensitivity analysis.</p> <p>3. The validation team noted that the O&amp;M agreement has not been signed between the project participant and the O&amp;M contractor. The validation team also further noted that the O&amp;M costs on wind power projects</p>



## VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
			<p>typically increase with time rather than reduce over time. Hence in the absence of any substantive information, the project participant has applied a sensitivity analysis of -50% alongwith a reduction in the escalation on O&amp;M cost at 5%. The IRR of the project activity does not cross the benchmark even at this point.</p> <p>4. The validation team reviewed the PPA signed between the project participant and the State Electricity Utility for the entire project activity capacity and observed that the tariff is fixed for the life of the project activity. However the project participant has applied a sensitivity of + 10% on tariff parameter, which also does not make the IRR cross the benchmark.</p> <p>Based on the above discussions, the clarification request is closed.</p>



## VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
<b>CL 12</b> Project participant to provide the copies of the annual financial reports of the last 3 years.	Refer c.tt of Table 1 above	Last 3 years audited annual reports are attached for verification of DoE.	The copies of the audited annual reports of the project participant for the last 3 years viz; 2007-08, 2008-09 & 2009-10 has been provided to the validation team.
<b>CL 13</b> Project participant has not provided the sensitivity analysis to determine the conditions when the variations in the values would occur, in the PDD.		Sensitivity analysis has been done up to the point where IRR crosses the benchmark and likelihood of scenario has been described.	The project participant has provided details of the scenario at which the equity IRR would cross the benchmark and also has justified the likelihood of the scenario occurring under sensitivity analysis in Section B.5 of the revised PDD.  Hence the clarification request is closed.
<b>CL 14</b> Project participant to provide the details of the previous investment decisions (last 3 years) with supporting evidences. Project participant to further clarify whether the same benchmark as that for the project activity has been applied	Refer c.yy.i of Table 1 above	We would like to submit to DOE that this is first investment of PP in renewable energy wind power projects. Audited balance sheet has been provided to DOE reference.	The validation team reviewed the audited annual reports of the company for the previous 3 years viz; 2007-08, 2008-09 & 2009-10 and observed that this is the first investment of the project participant in renewable energy projects.  Hence the CL is closed.
<b>CAR 10</b> 1. The name of one of the sub-station viz	Refer 7.d of Table	1. Correction has been made in the name of sub-station from Tinwari to	1. Section B.7.1 of the revised PDD indicates that the project



## VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
<p>Tinwari, indicated in Section B.7.1 is incorrect, as was observed during the site visit</p> <p>2. The metering system at the Enercon pooling station is incorrectly described.</p> <p>3. It is not clear as to how the parameter of EGJMR, export &amp; EGJMR, import is used in the overall emission reduction calculations.</p> <p>4. In Section B.7.2, it is indicated that the net electricity supplied to the grid by the project activity is metered. Project Participant to clarify whether the net electricity can be metered or is it a calculated value.</p> <p>5. The method of cross-checking is indicated to</p>	<p>1 above</p>	<p>PS-8, Narwa.</p> <p>2. Metering system has been revised as per actual practice in revised PDD.</p> <p>3. EG<sub>JMR, export</sub> &amp; EG<sub>JMR, import</sub> is the value recorded by main meter installed at EB-sub-station for all the WEGs connected at sub-station including project activity and non-project activity. Values of EG<sub>JMR, export</sub> &amp; EG<sub>JMR, import</sub> is used to calculate the net electricity supplied by project activity to grid using apportioning calculation (Refer section B.7.2 for detailed calculation) and which is further used to calculate the emission reduction calculation.</p> <p>4. The net electricity supplied to the grid by the project activity is calculated based on export &amp; import values and same has been corrected in revised PDD.</p> <p>5. Value of net electricity supplied to grid</p>	<p>participant has corrected the name of the sub-station to which the project activity WEG's are connected to viz; PS-8 Narwa.</p> <p>2. The metering system at both, the Jodhpur and Jaiselmer, sites has been described in detail in Section B.7.2 of the revised PDD.</p> <p>3. The justification for including the parameters of EG<sub>JMR, export</sub> &amp; EG<sub>JMR, import</sub> in the monitoring plan of the PDD and their use in the overall emission reduction calculations has been detailed in Section B.7.2 of the revised PDD.</p> <p>4. Section B.7.2 is corrected to indicate that the net electricity supplied to the grid by the project activity is a calculated value and not directly metered.</p> <p>5. The method of cross-checking has been corrected to be</p>



## VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
<p>be from the invoices, however the same is required to be done with the sales receipts from the State Electricity Utility.</p> <p>6. It is not clear as to who is the responsible entity for conducting the Case 1 &amp; Case 2 methods of apportioning as described in Section B.7.2 of the PDD.</p>		<p>can be cross checked with the invoices raised by PP on DISCOM and/or sales receipts either in the form of a cheque or the bank statements of the Project Participant which indicates the payment made by the State Utility</p> <p>6. The apportioning for case 1 will be done by O&amp;M contractor (Enercon) and for case 2 will be done by PP based on data provided by O&amp;M contractor. Same has been incorporated in the PDD section B.7.2.</p>	<p>indicated to be from payment receipts from RERC/DISCOM apart from the invoices raised by the project participant on RERC/DISCOM.</p> <p>6. The validation team accepts that the Case I of apportioning as described in Section B.7.2 of the revised PDD shall be conducted by the project participant representative and then authorised by the State Electricity utility to deduce the net electricity supplied by the individual wind turbines to the grid, whereas the Case II of apportioning shall be conducted by the project participant themselves for CDM purpose, in case the dates of the verification period does not match with the billing cycle dates.</p> <p>Based on the above observations, the CAR is closed</p>
<p><b>CL 15</b> The latest available version of the 'Tool to</p>	<p>Refer 5.e.c of</p>	<p>According to "Tool to calculate the emission factor for an electricity system"</p>	<p>The project participant has clarified that as per Step 2 of Version 2.2 of</p>





## VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
<p>calculate the emission factor for an electricity system' is Version 2.2 whereas the version of the tool used in Version 5 of the CEA database is Version 1.1 Kindly clarify as to how the CEA database could be used in determination of the emission factor for the CDM project activity.</p>	<p>Table 1 above</p>	<p>version 02.2.0, If a connected electricity system is located partially or totally in Annex-I countries, then the emission factor of that connected electricity system should be considered zero.</p> <p>The above applicability criteria is not applicable for the project activity since the project activity will supply the electricity to the NEWNE grid of host country India, which is a not a part of Annex- I country hence the “Tool to calculate the emission factor for an electricity system” is applicable for the project activity.</p> <p>Further the Project participant has chosen not to include off-grid plants in the calculation of emission factor, Step 2 of the tool.</p>	<p>the Tool, the project participant can choose whether to include off-grid plants in the calculation of emission factor. The project participant has chosen not to use Option 2 of the tool and hence the CEA database can still be used. The validation team accepted the same further, on the basis that the tool gives an option of using either Option 1 or Option 2 to calculate the emission factor. Further the electricity system in the host country, India, is not located partially but totally in the country itself and hence the validation team concluded that the CEA database can be used for the determination of the emission factor for the project activity. Hence the CL was closed</p>



## Appendix B – Validation of Global Stakeholder Comments

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
1.	Babloo, babloosinghindia@yahoo.com	26/01/2011	The PP states that they have considered 80% accelerated depreciation. However the PDD is silent on the tax shielding as a result from accelerated depreciation. PP's cleverly do not consider the accounting tax offsetting in their companies while calculating the IRR. This is evident from the recently registered projects and those requesting registration. The DOE is therefore requested to critically analyze how the accelerated depreciation benefit has been taken into account and confirm the accounting of the cash inflows as a result of the negative tax liability in the initial years. DOE should not be misguided by the financial presented by the PP or consultant which are custom made for CDM purposes and not the actual financial considered at	PP has considered the tax shield in cash flows of the investment analysis sheet.	The project participant has considered the accelerated depreciation of 80% as well as considered the additional depreciation of 20%, which is allowed under the Indian Income Tax rules. The IRR working, including the tax shield, has been reviewed and approved the financial expert engaged by the validation team and confirms that the IRR value derived for the project activity is by considering all depreciation benefits. Hence the validation team considers that this comment is closed.



## VALIDATION REPORT

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
			the investment decision. Note that considering cash inflows results in an increase in the IRR making wind projects a profitable venture.		
2.	Babloo, babloosinghindia@yahoo.com	26/01/2011	Please also check the offer from WTG supplier and Purchase Order while validating the PLF. It may be so that the third party report may indicate a lower PLF.	PP has considered the PLF estimated by third party which is conservative compared to PLF estimated by WTG supplier.	The validation team verified the PLF study report prepared by an independent 3rd party M/s Ravi Enteck Limited for the 2 separate sites of Jodhpur (Ref /34/) and Jaiselmer (Ref /33/) for the project participant wherein the PLF is stated to be 20.48 & 20.45% respectively. Since the higher PLF value of 20.48% is conservative, the same is considered in the investment analysis and emission reduction estimations. Since the PLF value is determined in line with the requirements specified in EB 48, Annex 11, the validation team accepted the same. However the validation



## VALIDATION REPORT

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
					<p>team also verified the PLF indicated in the RERC Notification dated 23/01/2009 (Ref /35/) which was applicable at the time of investment decision and noted that the PLF indicated under para 83 (6)(b)(ii) is 21 % for Jaisalmer and Jodhpur districts, wherein the project activity WEG's are located.</p> <p>There is another order from the RERC dated 31/03/2010 (Ref /36/); however the validation team noted that this order was specifically issued for matters related to determination of tariff for sale of electricity from wind power projects in the State of Rajasthan and does not indicate anything about the CUF/PLF. Also the validation team reviewed the generation estimate</p>



## VALIDATION REPORT

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
					<p>provided by the WEG supplier in the initial offer and observed that the CUF indicated for both the sites is 20.46%, which is lower than the PLF value considered by the Project Participant in the investment analysis. Since the sensitivity analysis conducted by the Project Participant of + 10% covers the PLF of 21 % as indicated in the RERC Tariff Order, the validation team considers that the PLF value assumed for the investment analysis is conservative.</p> <p>Hence the validation team confirms that the PLF of 20.48 % considered by the Project Participant meets the requirements of EB 48, Annex 11 guidelines (Ref /57/) and are also conservative.</p>



## VALIDATION REPORT

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
3.	Babloo, babloosinghindia@yahoo.com	26/01/2011	<ol style="list-style-type: none"> <li>1. Benchmark: How come a levered beta has been considered for determining the equity benchmark? An unlevered beta is more appropriate.</li> <li>2. DOE must be well versed with the financials for validating the benchmark and financial analysis</li> </ol>	<ol style="list-style-type: none"> <li>1. The project activity is 100% equity financed; therefore unlevered beta is considered for computing the benchmark.</li> <li>2. The query is directed to DoE.</li> </ol>	<ol style="list-style-type: none"> <li>1. The project activity was initially envisaged as 100 % equity funded project. Hence the project participant has chosen an unlevered beta for computing the benchmark. The beta value has been considered as an average of unlevered beta values based on the 5 power generating companies and deduced as 1.09. However re-levering of the beta values has not been done, as the estimate of the beta would not be conservative and would become company specific.  The benchmark analysis has also been verified by the financial expert engaged by the DOE and was found be correct. Based on the above observations, the comment</li> </ol>



## VALIDATION REPORT

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
					is considered to be closed. 2. The DOE has validated the benchmark and all the input values used for the investment analysis based on the latest available EB guidance for the same. Further the DOE has also got the financials (both, IRR and benchmark working) vetted and certified by financial experts. Hence the validation team confirms that the IRR and benchmark has been validated in line with the EB requirements.
4.	Babloo, babloosinghindia@yahoo.com	26/01/2011	Stakeholder consultation: No details provided on which all stakeholders attended the meeting	Stakeholder documents have been provided to DOE for verification	The validation team raised CAR 6 and CL 6 regarding the same and the project participant has now described the entire process of the local stakeholder consultation process transparently in



## VALIDATION REPORT

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
					Section E.1 & E.2 of the revised PDD. Hence the validation team accepts the same.
5.	Fernandis, ranga.rajan.reddy@gmail.com on behalf of Fernanadis	03/02/2011	Chronology of events is not mentioned in the PDD. DOE has to verify	Detailed Chronology of events has been mentioned in revised PDD in section B.5.	The detailed chronology of events from the date of investment decision up to the date of webhosting the PDD is now included in Section B.5 of the revised PDD. Hence the validation team accepts the same and the comment is vacated.
6.	Fernandis, ranga.rajan.reddy@gmail.com on behalf of Fernanadis	03/02/2011	Starting date of the project activity is not consistent throughout the PDD. B.5 and C.1.1 has to check by DOE.	The correction has been made to make the start date consistent throughout the PDD	The start date of the project activity is 10/07/2010 which is the date of the purchase orders placed for the project activity. The same has been made consistent in Sections B.5 and C.1.1 of the revised PDD. Hence the comment is vacated by the validation team.





## VALIDATION REPORT

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
7.	Fernandis, ranga.rajan.reddy@gmail.com on behalf of Fernanadis	03/02/2011	Date of completion of baseline and monitoring methodology has to check.	The baseline and monitoring methodology for the project activity has been established on 05 Nov 2010.	The date of completion of the baseline and monitoring methodology is 05/11/2010 and is described in Section B.8 of the PDD. Hence OK.
8.	Fernandis, ranga.rajan.reddy@gmail.com on behalf of Fernanadis	03/02/2011	How has DOE confirm that the project is equity funded and no debt part is involved, Will DOE cross check with the audited financial balance sheet of the company?	The Last three years financial statements have been provided to DoE for verification	The validation team reviewed the annual reports of the project participant for the last 3 years. The validation team, based on documents submitted by the project participant, observed that the project activity is partially funded by debt and not on 100% equity. The same has been raised as CL 11 in the DVR above. The project participant has subjected the parameter of debt equity ratio to a sensitivity analysis and it was observed that the project activity IRR is still not crossing the benchmark. Hence the comment is considered to be vacated.



## VALIDATION REPORT

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
9.	Fernandis, ranga.rajan.reddy@gmail.com on behalf of Fernanadis	03/02/2011	Which is the correct metering point and how come metering point be outside project boundary?	Metering point details has been described in details in PDD and metering point is inside the project boundary which is shown in section B.3 of PDD under the title "flow diagram of the project boundary."	The correct metering point is included within the project boundary in Section B.3 of the PDD. Hence OK.
10	Fernandis, ranga.rajan.reddy@gmail.com on behalf of Fernanadis	03/02/2011	Why has option A (Combined margin) been chosen for calculating emission factor is not justified. Refer B.6	As per baseline methodology procedure in ACM0002 version 12.1.0, combined emission factor shall be determined using "Tool for calculate the emission factor for an electricity system, version 2.2". The Combined margin is calculated using the data provided by CEA (version 5 of CO2 database), Ministry of Power, Government of India.	The applied methodology viz; ACM 0002, version 12.1.0 describes the combined margin to be calculated as per one of the 2 options provided. The project participant has chosen the option to calculate the emission factor using the Tool to calculate the emission factor Version 2.2. Hence OK.
11	Fernandis, ranga.rajan.reddy@gmail.com on behalf of Fernanadis	03/02/2011	The justification of choosing IRR as financial indicator is not adequately justified. Whether it is equity or project IRR, pre-tax or post tax is not mentioned in the PDD.	The project is envisaged as 100% equity finance; therefore post tax equity IRR is chosen as financial indicator for substantiating additionality	Since the project activity was initially envisaged as a 100% equity funded project, at the time of investment decision, the project participant has considered the post tax equity IRR as the choice of financial



## VALIDATION REPORT

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
					indicator. Hence OK
12	Fernandis, ranga.rajan.reddy@gmail.com on behalf of Fernanadis	03/02/2011	Proof for PLF is not justified.	As per annex 11 of EB 48, PP has used PLF estimated by third party study in the investment analysis for demonstrating additionality	The PLF value that has been used in the IRR analysis is based on the 3 <sup>rd</sup> party engineering report, as mandated by EB 48, Annex 11. The same is described transparently in Section B.5 of the PDD. Hence the comment is vacated by the validation team.
13	Fernandis, ranga.rajan.reddy@gmail.com on behalf of Fernanadis	03/02/2011	Date of offer is not provided	The offer from supplier dated 25 June 2010 has been provided to DoE for verification. The date of offer from the supplier has been incorporated in the chronology of events under section B.5.	The date of the offer provided by the WTG supplier is 25/06/2010. The same is indicated in the chronology of events in Section B.5 of the revised PDD. Hence the comment is closed.
14	Fernandis, ranga.rajan.reddy@gmail.com on behalf of Fernanadis	03/02/2011	O&M charges and its escalation is not as per TNERC norms	As per the Para 6 of guidelines on the assessment of investment analysis version 3.1 "Input values used in all investment analysis should be valid and applicable at the time of the investment decision taken by the project participant".	The proposed project activity is located in the State of Rajasthan and hence the TNERC norms do not apply to the project. The O&M charges and its escalation are considered



## VALIDATION REPORT

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
.				Accordingly PP has used the O&M charges and escalation rate from the supplier offer dated 25 Jun 2010 available at the time of investment analysis.	from the WEG supplier offer letter which was available to the project participant at the time of investment decision. Further, since the O&M agreement is not yet signed between the project participant and WEG supplier, the project participant has subjected the parameter of O&M to a sensitivity analysis of -50%, which is not a realistic case in the opinion of the validation team. Even with a sensitivity analysis of -50% on O&M cost, the IRR does not cross the benchmark. Hence the validation team considers this comment as closed.



## VALIDATION REPORT

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
15	Fernandis, ranga.rajan.reddy@gmail.com on behalf of Fernanadis	03/02/2011	IT rate assumed is not as per standard practice.	We would like to clarify to DOE that Vish Wind Infrastructure is a Limited Liability Partnership (LLP) company not a LTD. company and as per the IT Act, the applicable tax rate is 30.90% for LLP companies. Please refer following web link for tax rate: <a href="http://www.madaan.com/taxrates.htm">http://www.madaan.com/taxrates.htm</a>	The validation team noted that the project participant is a Limited Liability Partnership company and not a Limited company and hence the IT rate of 30.90 % assumed is in line with the IT Rules of India. The same has also been vetted by the financial expert engaged by the validation team and observed that the same is correctly considered. Hence the comment is closed.
16	Fernandis, ranga.rajan.reddy@gmail.com on behalf of Fernanadis	03/02/2011	CER revenue assumed is not consistently applied	CER revenue is incorporated in the spreadsheet. The option can be exercised using switch option under cell "C56" of assumptions in the spreadsheet	The CER revenue is now consistently applied in the CER sheet. Hence OK
17	Fernandis, ranga.rajan.reddy@gmail.com on behalf of Fernanadis	03/02/2011	Project cost is not as per TNERC norms	As per the Para 6 of guidelines on the assessment of investment analysis version 3.1 "Input values used in all investment analysis should be valid and applicable at the time of the investment decision taken by the project participant". Accordingly PP has used the project	The validation team clarifies that the project activity is located in the State of Rajasthan and hence TNERC Order is not valid for the project activity. The project cost has been considered from the offer



## VALIDATION REPORT

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
				cost from the supplier offer available at the time of investment analysis.	letter provided by the WEG supplier which was available at the time of investment decision. Further the project cost is also subjected to a sensitivity analysis of -10% based on the actual project cost, based on the purchase order. Hence the validation team considers that the project cost considered for the investment analysis is correct and in line with the EB guidelines.



## VALIDATION REPORT

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
18	Fernandis, ranga.rajan.reddy@gmail.com on behalf of Fernanadis	03/02/2011	Benchmark calculation is not as per WACC tool (EB53 Annex 8)	We would like to clarify to DOE that WACC tool (EB53 Annex 8) is a draft guideline under the review by EB meth panel and not finally approved and therefore has not being used while computing the benchmark.	The validation team noted that the WACC tool is only in a draft form and is yet to be approved by the CDM EB. Hence the same was not used by the project participant in the benchmark calculations. Hence OK.
19	Fernandis, ranga.rajan.reddy@gmail.com on behalf of Fernanadis	03/02/2011	<p>The selection of simple OM based on low cost/must run resources is not adequately justified. Refer B.6.1</p> <p>Power plants registered as CDM project activities should be included in the sample group that is used to calculate the operating margin if the criteria for including the power source in the sample group apply. This argument is not demonstrated. B.6.1.</p> <p>The selection of option (out of two) for calculating OM is not adequately documented with justification. CEA calculation is based on net electricity generation, the average efficiency of each power unit and the fuel types used in each power unit. Step 4 of B.6.1</p>	The explanation for selection of the option (a) for computing operating margin has been incorporated in B.6.1. We will like to submit to the DoE that operating margin and build margin is computed by CEA, ministry of power, government of India. Therefore PP has directly sourced the values from for OM and BM from the latest available CEA database version 5.0 that was available at the time of webhosting of PDD.	<p>The validation team noted that the calculation of the simple operating margin, build margin and the combined margin is based on the values provided by the Central Electricity Authority (CEA) which is a government body in India. These values are updated by the CEA on an annual basis and the latest version of the same was Version 5 which was available at the time of webhosting the PDD.</p> <p>The project participant has further justified the selection of each of the parameters</p>



## VALIDATION REPORT

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
.			The argument that CEA data for build margin is calculated as per Emission factor tool is not documented. B.6.1		viz; OM, BM and CM in line with the steps indicated in the "Tool to calculate the emission factor for an electricity system". Hence the query is vacated.
20	Fernandis, ranga.rajan.reddy@gmail.com on behalf of Fernanadis	03/02/2011	Net electricity should be continuously monitored, hourly measured and at least monthly recorded. Refer B.7.1	The electricity supplied is measured via LCS meter at the WTG level, main meter at DISCOM sub-station. As per ACM0002 version 12.1.0, the electricity shall be continuously monitored and at least monthly recorded. We will like to submit that all the meters that are used for monitoring purpose are continuously monitored and readings are recorded on monthly basis.	The energy meter at the DISCOM sub-station which is under the control of the State Electricity Utility has the capability to monitor and measure the data continuously whereas the recording is done by the representatives of the project participant and the State Utility on a monthly basis. This adequately meets the requirement of the applied methodology ACM 0002. The same has also been stated in Section B.7.1 of the revised PDD.





## VALIDATION REPORT

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
21	Fernandis, ranga.rajan.reddy@gmail.com on behalf of Fernanadis	03/02/2011	Metering regulations as per CEA norms is not adequately followed in monitoring plan. Refer B.7.2.	The metering procedure is redefined to incorporate the metering practice followed in the state of Rajasthan in section B.7.2.	The metering procedures have been now described in detail in Section B.7.1 and B.7.2 of the revised PDD. The monitoring procedures are now transparently described to ensure the most conservative estimate of emission reductions from the project activity. Hence the query is closed.