



# VALIDATION REPORT

## VISH WIND INFRASTRUCTURE LLP

### VALIDATION OF THE CLEAN ENERGY GENERATION FROM WIND ENERGY IN THE STATE OF ANDHRA PRADESH

REPORT NO. **INDIA -VAL/408.49/2012**

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**BUREAU VERITAS CERTIFICATION**

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## VALIDATION REPORT

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Client: Vish Wind Infrastructure LLP	Client ref.: Mr. Yogesh Mehra

## Summary:

Bureau Veritas Certification has made the validation of the 'Clean Energy generation from wind energy in the state of Andhra Pradesh' of Vish Wind Infrastructure LLP located in Petnikota village of Kurnool District of Andhra Pradesh state in India 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.

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 & Opinion, was conducted using Bureau Veritas Certification internal procedures.

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.

In summary, it is Bureau Veritas Certification's opinion that the project correctly applies the baseline and monitoring methodology AMS I D, Version 17 and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.

Report No.: INDIA-val/408.49/2012	Subject Group: CDM
Project title: Clean Energy generation from wind energy in the state of Andhra Pradesh	
Work carried out by: Mr. Bhavesh Prajapati - Team Leader Mr. Senthil Kumar. V - Team Member Mr. S. Thyagaraj - Team Member	
Internal Technical Review carried out by: Mr. H. B. Muralidhar 	
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Mr. Flavio Gomes, Global Product Manager

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## 1 INTRODUCTION

Vish Wind Infrastructure LLP has commissioned Bureau Veritas Certification to validate its CDM project 'Clean Energy generation from wind energy in the state of Andhra Pradesh' (hereafter called "the project") at Petnikota village in Kurnool District of Andhra Pradesh state in 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	Mr. Bhavesh Prajapati	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI
Lead Verifier	Mr. S. Thyagaraj	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DR <input checked="" type="checkbox"/> SV <input type="checkbox"/> RI



<b>Verifier</b>	Mr. Senthil Kumar. V	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI
<b>Technical Specialist</b>	Not Applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI
<b>Financial Specialist</b>	CA. G. N. Jayaram	<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>	Mr. H. B. Muralidhar	<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

## 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, version 04 /P2/ and resubmitted on 12/01/2012.



The validation findings presented in this report relate to the project as described in the PDD version 04.

## 2.2 Follow-up Interviews:

On 27/08/2011 Bureau Veritas Certification conducted the validation site visit as per the requirements of CDM. In due course of validation, the team held interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Vish Wind Infrastructure LLP (Project Participant), Enercon (India) Limited (O & M Contractor) and the Local Stakeholders residing in the project vicinity (see References) were interviewed. The main topics of the interviews are summarized in Table 1.

**Table 1 Interview topics**

Interviewed organization	Interview topics
Vish Wind Infrastructure LLP (Project Participant)	<ul style="list-style-type: none"> <li>➤ Project conceptualisation,</li> <li>➤ CDM consideration,</li> <li>➤ Additionality,</li> <li>➤ Operational aspects and Management Structure,</li> <li>➤ Project Design Document,</li> <li>➤ GHG emission reduction calculations,</li> <li>➤ Application of Baseline and Monitoring Plan.</li> </ul>
Local Stakeholders	<ul style="list-style-type: none"> <li>➤ Views and Concerns about the Project Activity.</li> <li>➤ Confirming that Vish Wind Infrastructure LLP had conducted a formal Stakeholder Consultation Meeting.</li> </ul>
Enercon (India) Limited (O & M Contractor)	<ul style="list-style-type: none"> <li>➤ Operation &amp; Maintenance Arrangements.</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 validation process, the concerns raised are documented in more detail in the validation protocol in Appendix A.

## 2.4 Internal Technical Review

The validation report underwent an 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 proposed CDM project activity resulted in 07 Corrective Action Requests (CARs) and 23 Clarification Requests (CLs).

The CARs and CLs were closed based on adequate responses from the Project Participant 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, a party to the Kyoto Protocol, is the Host Party for this project activity. There are no other Host Parties involved in this project activity. M/s. Vish Wind Infrastructure LLP on 13 September 2011 received the Letter of Approval (LoA) from the Ministry of Environment and Forest (MoEF), who also acts as the DNA for India. The copy of LoA (vide reference no. 4/20/2011-CCC dated 13/09/2011) was submitted to the validation team. The validation team confirmed the authenticity of the approval from the DNA's website [http://www.cdmindia.in/reports\\_list\\_details.php?/B1/](http://www.cdmindia.in/reports_list_details.php?/B1/). The website confirms the approval of the project activity by the DNA. The letter of approval clearly states that India (host party) has ratified the Kyoto Protocol and that the approval is for voluntary participation in the proposed CDM project activity. The DNA approval mentions the same project title as mentioned in the PDD. Also, the letter of approval mentions that the project activity contributes to sustainable development of the host country, India.

Bureau Veritas Certification received this letter from the project participant. Bureau Veritas Certification does not doubt the authenticity of the said letter, since the validation team verified the original of the Letter of Approval and also confirmed the authenticity of the approval from the website of DNA of India.



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.

Bureau Veritas Certification considers the letter of approval in accordance with paragraphs 45 - 48 of the VVM.

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

The participation for the project participant has been approved by India, which is a Party to the Kyoto Protocol, as seen from the UNFCCC website <http://maindb.unfccc.int/public/country.pl?country=IN> /B2/. India has ratified the Kyoto Protocol on 26 August 2002.

The participation is approved by the Designated National Authority (DNA) and is accepted. The participation of project participant has been approved by a Party of the Kyoto Protocol. The letter of approval clearly states that the participation of the project participant in proposed project activity is voluntary and will contribute in sustainable development of the host country. The validation team confirmed the authenticity of the approval by accessing the DNA's official website which confirms the approval by the DNA under project ID no: 574/05/2011. The validation team concluded this by reviewing the Letter of Approval (LoA) with Ref no: 4/20/2011-CCC dated 13/09/2011 /P1/, which describes the participation of Vish Wind Infrastructure LLP being approved by the Government of India, which is a party to the Kyoto Protocol.

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

The Project Design Document of the project activity titled "Clean Energy generation from wind energy in the state of Andhra Pradesh" has been prepared using the latest PDD format /B3/ and as per the latest guidelines for completing the simplified project design document, version 5.0 /B4/, which is available on the UNFCCC website [http://cdm.unfccc.int/Reference/Guidclarif/pdd/PDD\\_guid02.pdf](http://cdm.unfccc.int/Reference/Guidclarif/pdd/PDD_guid02.pdf).

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 SSC Project Design Document (CDM-SSC-PDD) (EB34 Annex 9).

### **3.4 Changes in the Project Activity**

The technical details and the capacity of the plant are in line with the description provided in the PDD. The same was evidenced during the validation site visit and document review.



However, during the course of validation the PDD did undergo certain changes. The final PDD, version 04 /P2/, has the following changes as compared to webhosted PDD version 01 /P5/:

- Sections A.4.1.4 of PDD - Geographical Coordinates have been corrected;
- Section A.4.2 of PDD was revised to meet the requirements of guidelines for completing SSC PDD;
- Section B.2 of revised PDD has been corrected and the applicability conditions are in line with applied approved methodology AMS I D, Version 17;
- IRR has been revised as 8.29%, the IRR in webhosted PDD was 8.05%;
- Operating Margin and Build Margin values were not consistent in the webhosted in the different sections of PDD, the revised PDD now consists of values which are consistent under relevant section;
- Transmission Losses has been added in the Section B.7.1 of the revised PDD;
- Section B.7.2 has been revised to provide clarity on the monitoring, QA & QC procedures.

The above mentioned changes are results of the corrective action requests and clarification requests as described in the validation protocol (Appendix A) at the end of this report.

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

The project activity involves setting up of 8 Wind Energy Generators (WEGs). The project is located in Petnikota village of Kurnool District in the State of Andhra Pradesh in India. The power generated from the WEGs will be exported to the Transmission Corporation of Andhra Pradesh Limited (APTRANSCO) grid, which forms a part of the Southern Regional Grid of India.

The project activity will supply electricity from clean sources and displace the same from the grid. In the absence of the proposed CDM project activity, the electricity exported by the project activity would have been supplied by the Southern Grid of India, which is dominated by fossil fuel based thermal power plants (as referred in the database of Central Electricity Authority of India) and would have led to higher GHG emissions. The project activity is expected to result in annual gross generation of electricity of 13.43 GWh and is to reduce Greenhouse Gas (GHG) emissions approximately to the tune of 12,238 tonnes of CO<sub>2e</sub> per annum.

The validation team undertook a visit to the site on 27/08/2011, wherein it was observed that the wind farm was divided into 7 locations and were



named as EK1, EK2, EK 3, EK4, EK5, EK6 and EK7. The WEGs of project activity were situated in location nos: EK1 (5 WEGs) & EK2 (3 WEGs). The individual location nos of WEGs are:

- Location EK 1: 80, 81, 82, 83 & 84.
- Location EK 2: 52, 88 & 89.

The team also visited Enercon's pooling sub-station site at Ankireddypalli and state electricity board's substation at Hindupur, Kurnool District to inspect the planned arrangements for evacuation of power from the project activity and connectivity to the grid. It was confirmed from the site observations that the electricity generated by the project activity would be received at the Enercon pooling sub-station over a 33 kV transmission line. The electricity received at this pooling station is then further transmitted to the State Electricity Board's transmission lines. The validation team confirms that the power evacuation arrangements described in the PDD were implemented. The grid connection of the project activity was also validated by reviewing the Power Purchase Agreements /P6/ between the project participant and Central Power Distribution Company of Andhra Pradesh Limited (APCPDCL).

Based on the above assessment, the DOE hereby confirms that the project description in PDD (version 04) /P2/ is accurate and complete in all respects.

### 3.6 Baseline and monitoring methodology

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

The proposed CDM project activity titled "Clean Energy generation from wind energy in the state of Andhra Pradesh" has used the approved baseline and monitoring methodology AMS I D, Version 17 / B5/.

The steps taken to assess the relevant information contained in the PDD against each applicability condition, as stated in AMS I D, version 17, are described below.

***Applicability condition 1 (Sr. No. 1 of the methodology):*** *The category comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass*

- i) "Supplying electricity to a national or a regional grid" or,*
- ii) "Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling."*

The project activity is a wind energy based power project, which is a renewable form of energy generation. The electricity generated by the project activity is supplied to the Southern Regional grid of India. The grid connectivity of the project activity was confirmed by the validation team



during the site visit on 27/08/2011. It was noted that the generated electricity is supplied to the Southern Regional grid at the Hindupur substation. As the Southern Regional grid is predominantly served by fossil fuel based plants, as is evident from the Central Electricity Authority (CEA) database version 6.0 publicly available at the website "[http://www.cea.nic.in/reports/planning/cdm\\_co2/cdm\\_co2.htm](http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm)", the project activity effectively displaces electricity that would have been generated in such type of fossil fuel power plants. Hence, this condition is applicable and fulfilled by the proposed CDM project activity.

***Applicability condition 2 (Sr. No. 2 of methodology): Illustration of respective situations under which each of the methodology (i.e. AMS-I.D, AMS-I.F and AMS-I.A\*) applies.***

The project activity is the installation of new wind energy generators (WEG's) which will supply the electricity to the Southern Grid of India. Since project activity is "Grid connected renewable electricity generation", methodology AMS I D is applicable.

The validation team has been able to confirm from the Purchase Orders with reference no: 'VWILLP/EIL/10-12/02-1A' dated., 10/07/2010 /P8/ that the wind energy generators are new which was ascertained during the validation site visit. It was also noted that the wind energy generators are connected to the southern grid and supply electricity to southern grid. The southern grid connection was confirmed from commissioning certificates issued by the Central Power Distribution Company of Andhra Pradesh Limited (APCPDCL)<sup>†</sup> /P6/.

The project participant in webhosted PDD /P5/ had not included the above mentioned applicability condition, the validation team raised clarification request CL 15.

In response to CL 15, the project participant included and justified the applicability condition pertaining to choice of methodology with respect to the type of project activity. The revised PDD /P2/ was made available to the validation team. The section B.2 of the PDD was checked and found to be meeting the requirements of the applied approved methodology AMS I D, Version 17. Based on the correction and satisfactory response CL 15 was closed.

***Applicability condition 3 (Sr. No. 3 of methodology): The methodology is applicable to project activities that (a) install a new power plant at a***

\* AMS-I.D "Grid connected renewable electricity generation", AMS-I.F "Renewable electricity generation for captive use and mini-grid" and AMS-I.A "Electricity generation by the user"

<sup>†</sup> Andhra Pradesh unbundled the utility into one generation, one transmission, and four distribution and supply companies;



*site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant) (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).*

The project activity involves installation of Wind Energy Generators at the locations mentioned in PDD. This has been confirmed from the purchase orders /P8/ with reference no: 'VWILLP/EIL/10-12/02-1A' dated, 10/07/2010 was placed on equipment suppliers for supply, installation and commissioning of WEGs at the project activity site. Since, there have been no previous installations at the project site prior to the project activity; the proposed CDM project activity can be regarded as a "Greenfield" project of the project participant. The project activity therefore meets condition (a) above and since it is a new Greenfield facility, the rest of the conditions, viz., (b), (c) & (d) do not apply.

***Applicability condition 4 (Sr. No. 4 of methodology):*** *Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology:*

- The project activity is implemented in an existing reservoir with no change in the volume of reservoir;*
- 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>;*
- 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>.*

Not Applicable, since the project activity is wind energy based power project.

***Applicability condition 5 (Sr. No. 5 of methodology):*** *If the new unit added has both renewable and non-renewable components (e.g., a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit added co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.*

The project activity consists of WEGs, which are installed at the site. The same was noted from the purchase orders placed on the equipment supplier: Enercon (India) Limited /P8/ with reference no: 'VWILLP/EIL/10-12/02-1A' dated., 10/07/2010, indicate that new equipment have been ordered for the project activity. The project activity involves installation of renewable power generation equipment only. The project activity uses





only kinetic energy of wind and thus does not involve any kind of co-firing. Hence, this condition is not applicable to the proposed CDM project activity.

***Applicability condition 6 (Sr. No. 6 of methodology): Combined heat and power (co-generation) systems are not eligible under this category.***

As described above in section 3.5 of the report, the proposed CDM project activity is grid connected wind energy based power project, hence this applicability condition is not relevant.

***Applicability condition 7 (Sr. No. 7 of methodology): In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.***

It was confirmed by the validation team from purchase orders placed by the project participant on the equipment supplier and commissioning certificate issued by the State Electricity Board that the WEGs purchased and installed at the site are new equipments. The power generation facility is also a “greenfield” installation, as it is a new site and there was no other facility already existing at the site. Hence, this condition which essentially relates to the addition of renewable energy generation units at an already existing renewable power generation facility does not apply.

***Applicability condition 8 (Sr. No. 8 of methodology): In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the modified or retrofitted or replacement unit shall not exceed the limit of 15 MW.***

As described above in other applicability conditions, the proposed CDM project activity is a Greenfield project involving the procurement and installation of completely new equipments. There is no other equipment already existing at the sites. Thus, the project activity does not involve modification, retrofitting or replacement. Hence, this condition is not applicable.

The rated capacity of each WEG in the project activity is 800 kW (0.80 MW). The number of WEGs in the project activity is 8 in Nos.; the aggregate rated capacity of the project activity is 6.40 MW.

The normal output capacity is less than the limit of 15 MW<sub>electrical</sub> specified for small scale project activities, in the General Guidance to SSC CDM methodologies. The rated capacity of equipment would remain constant



over the length of the crediting period. Hence, the project activity is eligible to qualify as a small scale CDM project activity, in accordance with the General Guidance to SSC CDM methodologies.

The DOE therefore confirms that the selected small scale baseline and monitoring methodology AMS I D, version 17 is applicable to the proposed CDM project activity.

### **De-bundling:**

At the start of validation site visit of the proposed CDM project activity, a team of project participant reported that there other registered CDM projects. The validation team further accessed the UNFCCC website and it was noted that there are 3 small scale registered project by the same project participant. The validation team, hence, performed an assessment of the debundling criteria in accordance with the Appendix C of simplified modalities and procedures. The validation team found that the registered project is of the same type/category and registered within 2 year prior to proposed CDM project activity. The details of the 3 CDM projects are as follows:

#### **Project 1:**

UNFCCC Registration No: 4956

Title: Renewable Energy Wind Power Project in Karnataka

Size: 6.40 MW

Location: Gadag District of Karnataka State, India

Distance from proposed CDM Project Location: 323 Kilometers<sup>\*</sup>

#### **Project 2:**

UNFCCC Registration No: 4846

Title: Wind power project in Tirunelveli Tamilnadu

Size: 8.00 MW

Location: Tirunelveli District of Tamil Nadu State, India

Distance from proposed CDM Project Location: 939 Kilometers<sup>†</sup>

#### **Project 3:**

UNFCCC Registration No:

Title: Bundled Wind Power Project in Jamnagar, Gujarat

Size: 9.60 MW

Location: Jamnagar District, Gujarat State, India

Distance from proposed CDM Project Location: 1576 Kilometers<sup>‡</sup>

<sup>\*</sup> [http://www.distancebetweencities.co.in/kurnool\\_andhra-pradesh\\_and\\_gadag\\_karnataka/](http://www.distancebetweencities.co.in/kurnool_andhra-pradesh_and_gadag_karnataka/)

<sup>†</sup> [http://www.distancebetweencities.co.in/kurnool\\_andhra-pradesh\\_and\\_tirunelveli\\_tamil-nadu/route](http://www.distancebetweencities.co.in/kurnool_andhra-pradesh_and_tirunelveli_tamil-nadu/route)

<sup>‡</sup> [http://www.distancebetweencities.co.in/jamnagar\\_gujarat\\_and\\_kurnool\\_andhra-pradesh/serviceareas](http://www.distancebetweencities.co.in/jamnagar_gujarat_and_kurnool_andhra-pradesh/serviceareas)





Based on the above assessment it is noted that the distance between these 3 projects and proposed CDM project activity is more than 1 km away. Hence, the validation team concluded that the proposed CDM project activity is not a debundled component of a large scale project.

The project activity is a small scale wind based power generation facility in which the kinetic energy from the wind is converted to useful electrical energy. Hence, the electrical energy generation by wind energy generator does not involve any emissions of greenhouse gases.

The DOE therefore 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 baseline and monitoring methodology.

### 3.6.2 Project boundary (80)

The spatial extent of the project boundary as illustrated in the PDD covers the Wind Energy Generators of the project activity, pooling station and the Southern Regional Grid.

The project boundary was validated in the following manner:

- a) The spatial extent of the project boundary is assessed based on the description provided in the PDD and as per the official data available from the Central Electricity Authority (CEA) about the regional grids in India. The electricity generated by the proposed CDM project activity would be exported to the APTRANSCO grid<sup>\*</sup>, which is a part of the Southern regional electricity grid of India. The project activity boundary therefore includes the project power plant (Wind Energy Generator) and all other power plants connected physically to the Southern Regional grid.
- b) The validation team confirmed from its site visit that the project activity is located at the Petnikota (Kurnool District) site and is comprises of the same elements described in the project boundary diagram in section B.3 of the PDD. At site, the wind energy generators utilize the available wind energy to produce electricity. The produced electricity is transmitted through 33 kV line and stepped up to 132 kV line at the pooling sub station at Ankireddypalli. The electricity is further transmitted in to southern regional grid at Hindupur substation, which is owned and operated by Central Power Distribution Company of Andhra Pradesh Limited (APCPDCL)<sup>†</sup>. The validation has also reviewed the Power Purchase Agreement and

<sup>\*</sup> APTRANSCO is the [Electricity Transmission](#) company of the [Government of Andhra Pradesh](#) state in [India](#)

<sup>†</sup> One of Andhra Pradesh's distribution and supply companies



confirms that the generated electricity is exported to the grid. All these elements together form parts of the project activity boundary and hence the geographical boundary of the project activity therefore encompasses these elements and is also correctly described in the project boundary diagram included in Section B.3 of the PDD.

The baseline for this project activity is the continued generation of power in fossil fuel fired power plants connected to the Southern Regional grid. As the primary emission from such plants is CO<sub>2</sub>, the consideration of only CO<sub>2</sub> gas for the baseline emissions is justified.

The project activity will also import power from the grid, whenever required. The electricity imported by the project activity is accounted while calculating the net electricity supplied (EGy) by the proposed CDM project activity. The webhosted PDD had stated the equipment lifetime to be 20 years. The validation team, based on the undertaking /P9/, noted that the equipment supplier who is also the manufacturer and responsible for the operation & maintenance of the WEGs, has confirmed that the operational lifetime of the WEG as 20 years. The validation team during physical site visit and from the purchase orders confirmed that the WEGs commissioned were new. The validation team also checked the Annex 15 of EB 50 "Tool to determine the remaining lifetime of equipment" /B7/ which has prescribed 20 years as the default technical lifetime for wind energy generators (offshore).

The validation team hereby confirms that the project design is sound and the geographical (Petnikota village, Kurnool District, Andhra Pradesh, India) and temporal (20 years) boundaries of the project are clearly defined.

The validation team also confirms that the only greenhouse gas relevant to the project activity is CO<sub>2</sub>. This gas is addressed by the applied methodology baseline and monitoring 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 proposed CDM 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:

The proposed CDM project activity includes installation of new renewable (wind) energy generating units, which deliver electricity to the Southern Regional grid of India. The baseline scenario identified by the project participant is *"the electricity delivered to the grid by the project activity"*



*that otherwise would have 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”.* This is found to be in accordance with the paragraph 10 of the applied baseline and monitoring methodology AMS I D, Version 17 /B5/. Thus, the baseline for the project activity is prescribed by the methodology itself.

As per the paragraph 11 of AMS I D, version 17, the baseline for wind power projects is the electricity produced by the generating unit (measured in MWh) multiplied by an emission factor (measured in tCO<sub>2</sub>e/MWh).

Project participant has used the official published data from the Central Electricity Authority on operating and build margin emission factors /B6/. The version of the data used is Version 6, which was available on the start date of validation viz; webhosting date of the PDD. This data is published by Central Electricity Authority (CEA), which is the sole government authority for the publication of such data in India. The project participant has applied weight factors for the OM and BM [75% & 25% respectively] as specified in the tool to calculate the emission factor for an electricity system. The years considered for OM are 2007-08, 2008-09 and 2009-10 and for the BM it is 2009-10. Accordingly, the combined margin emission factor is calculated and same is worked out to be 0.91717 tCO<sub>2</sub>/MWh. The version 6.0 of CEA database has used “Tool to calculate the emission factor for an electricity system”, Version 02.0.0 /B9/. The validation team compared the latest version of tool (EB 61, Annex 12 - Version 2.2.1) /B10/ with the version 2.0.0. The validation team has the following observations:

1. The Baseline Methodology Procedure given in the tool contains six steps and the earlier version of the tool stated seven steps.
2. The paragraph 2 under Step-1 of the Tool states: “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”.

The proposed CDM project activity is connected to the Sothern Regional Grid via Hindupur substation, which is part of the Indian Regional Grid (electricity system) and this electricity/grid system is not located partially / totally in any Annex I country.

The approach to determine the OM, BM and CM remains similar to that in the previous versions of the tool. Besides, the project participant has chosen to exclude the off-grid power plants in the project electricity system in the calculation of the grid emission factor.



Hence, the CEA database version 6.0, though based on a previous version of the tool, can still be regarded as appropriate for the purpose of computation of the grid emission factor.

Validation team agrees to this emission factor as it is based on the official background data published by Central Electricity Authority (CEA). The Central Electricity Authority is a statutory body in India, constituted under the erstwhile Electricity (Supply) Act, 1948, that was subsequently replaced by the Electricity Act 2003. The office of CEA is an "Attached Office" of the Ministry of Power, Government of India. The data published by the CEA is an official publication of the Government of India and can definitely be regarded as a reliable and authentic source of data for the determination of CDM baselines.

The validation team further notes that the emission factor is not provided by the DNA of the host party, but by a credible and competent authority of the Government of India. The provisions of paragraph 64 of EB 43 in this regard therefore are not applicable.

The national policies and circumstances relevant to the baseline of the project activity are listed in section B.5 of PDD.

The national electricity policy 2005 available at the time of the project decision had planned for the use of coal to meet the electricity demand in the country. The Indian Electricity Act of 2003 does not restrict the choice of fuel for power generation and hence, coal or other fossil fuels would have remained the dominant fuels for power generation at that time. It is also noted by the validation team that wind based power generation was not a legal or mandatory requirement and thus, the project activity was a voluntary initiative on the part of the project participant.

It is noted that the selected baseline scenario is in accordance with the selected approved baseline and monitoring methodology AMS I D, version 17. Validation team therefore confirms that the selected baseline scenario reasonably represents what would happen in the absence of the proposed CDM project activity.

Based on the above assessment, the DOE 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 paragraph 11 applied baseline methodology AMS I D, version 17, the baseline is the product of electrical energy baseline  $EG_{BL,Y}$  expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor of the grid.

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.6.1 and applied in section B.6.3 of the revised PDD, version 04 /P2/ to calculate the baseline emissions.

As required under AMS I D, paragraph 11, the baseline emissions are calculated by the algorithm

$$BE_Y = EG_{BL,Y} * EF_{CO2grid\ Y} \text{ where,}$$

$BE_Y$  = baseline emissions in year y (t CO<sub>2</sub>)

$EG_{BL,Y}$  = Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh)

$EF_{CO2grid, y}$  = CO<sub>2</sub> emission factor of the grid in year y (tCO<sub>2</sub>/MWh)

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

$$ER_Y = BE_Y - PE_Y - LE_Y$$

Where

$ER_Y$  is Emission reductions in year y (t CO<sub>2</sub>/y)

$BE_Y$  is Baseline Emissions in year y (t CO<sub>2</sub>/y)

$PE_Y$  is Project Emissions in year y (t CO<sub>2</sub>/y)

$LE_Y$  is Leakage Emissions in year y (t CO<sub>2</sub>/y)

The proposed CDM project activity is a Greenfield project, which involves the installation of new equipments and does not involve any transfer of



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equipments from any other activity. Hence leakage emissions are considered as zero. This is found to be in accordance with paragraph 22 of the applied baseline methodology AMS I D, version 17 and hence appropriate.

The project participant has provided the estimation of emission reduction in MS-excel spread sheets in such way that it can be easily reproduced by the reader. Validation team assessed the calculations of estimated emission reductions with respect to assumptions and input values. The assumptions in this spreadsheet were validated as follows –

Parameter, Value	Source of information	Validation justification
Project Capacity, 6.40 MW	Purchase Order	The project capacity is as per the documents verified. The technical parameters in the purchase orders with reference no: 'VWILLP/EIL/10-12/02-1A' dated, 10/07/2010, indicate /P8/ the same capacity for the equipment ordered. This is also cross verified with the Power Purchase Agreements /P5/, which also states the same capacity. Hence, accepted by the validation team.
Numbers of WEGs, 8 Nos (each of 800 kW)	Purchase Order	The number of WEGs is as per the Purchase Order which has been verified. /P8/ The numbers of the WEGs were also cross checked with the commissioning certificates /P7/ provided by the electricity board company. Hence the validation team has accepted this value.
Plant Load Factor, 23.80%	Third Party Report	The PLF has been sourced from the third party assessment conducted by M/s. Ravi Enteck Limited /P10/. This is in accordance with Annex 11 of EB 48 and hence accepted by the validation team.
Baseline Emission Factor for Southern Regional grid, 0.91717	CEA database Version 6	CEA database is an official source of data and Version 6 /B8/ was the version available at the start of validation viz; webhosting of the PDD for global stakeholder comments. This is also in accordance with applied baseline methodology and "Tool to calculate the emission factor for an electricity system" and hence accepted by the validation team.





The estimation of emission reductions in the PDD in section B.6.3 is based on net electricity export to the grid.

The estimated annual average of emission reductions of approximately 12,238 tCO<sub>2</sub>e over the 10 year crediting period of emission reductions represents a reasonable estimation using the assumptions considered by the project participant in the revised PDD. All the assumptions for this estimate either come from the assumptions used for investment analysis or grid emission factor as taken from data provided by the CEA website. 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 /P11/ for calculations of emission reductions.

Based on the above assessment, the DOE 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, leakage 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 and sources of information used, to cross-check the information contained in the PDD on this matter are described below:

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

The start date of this project activity is 10/07/2010 /P8/ is the date on which, the purchase order vide reference no: 'VWILLP/EIL/10-12/02-1A' was placed on the equipment supplier. As per the CDM glossary of terms, the start date is defined as *"the earliest date at which either the implementation or construction or real action of a project activity begins"*. The proposed CDM project activity is a Greenfield wind based power plant at a site where no previous facility existed. The earliest "real action" taken by the project participant towards the implementation of the project activity was in the form of placement of the purchase order for the procurement of wind energy generators on 10/07/2010. The validation team verified the original Purchase Order documents and confirms that 10/07/2010 can be regarded as the "start date" of the project activity.



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The start date of the proposed CDM project activity is 10/07/2010, which is after 2<sup>nd</sup> August 2008. The CDM-EB provides guidelines on the demonstration and assessment of the prior consideration of CDM [EB 62 Annex 13] /B11/. The steps taken by the validation team to validate the Prior Consideration of CDM in accordance with Annex 13, EB 62 are mentioned below:

It has been demonstrated by the timeline of events of the Project that the CDM revenues were seriously considered in the decision to proceed with the Project prior to start of the Project and, the continuing and real action were taken to secure CDM status for the Project in parallel with its implementation:

Date	Events	Evidence verified
09/07/2010	Consideration of the CDM in the Minutes of the Meeting of board of directors of Vish Wind Infrastructure LLP	Board Resolution dated 09/07/2010 /P17/. This has been further verified by reviewing original MOM of board meeting dated 09/07/2010.
10/07/2010	Purchase Order placed on Enercon (India) Limited for the supply of WEGs	Purchase order with reference no. VWILLP/EIL/10-11/02-1A dated 10/07/2010 /P8/.
16/10/2010	Submissions of Prior Consideration of the CDM form dated 15/10/2010 /P12/ notifying the commencement of the project activity and the intention to seek CDM status to UNFCCC.	Email along with the form sent on 16/10/2010 /P13/
30/10/2010	Submissions of Prior Consideration of the CDM form notifying the commencement of the project activity and the intention to seek CDM status to Indian DNA.	Email along with the form sent on 30/10/2010 /P14/

The validation team has validated the project activity start date as per following table:

Starting date of project	Justification of and evidences (references) on the starting date of project	Justification on the prior consideration of the CDM
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10/07/2010	<p>Date of Purchase order with reference no 'VWILLP/EIL/10-11/02-1A' for the supply of WEGs with the manufacturer. It is the earliest date at which real action of the project activity begun. The validation team assessed the document /P8/ wherein the PP had placed the purchase order for supply of WEGs with, M/s Enercon (India) Limited.</p> <p>Hence the validation Team concludes that the start date is in accordance with the definition in "Glossary of CDM terms" and CDM VVM (§97) and in accordance with Annex 22 of EB-49.</p>	<p>Date of Intimation to UNFCCC: 16/10/2010 /P13/ and Host Party DNA: 30/10/2010 /P14/, which are within 6 months from the start date of the proposed CDM project activity.</p>
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From above table, the validation team was able to verify that the start date of the Project determined, as 10/07/2010 is appropriate.

The Project is a new project according to the definition in the "Guidelines on the demonstration and assessment of the prior consideration of CDM" [Annex 13 of EB 62] /B11/ (hereinafter called "Guidance-Prior Consideration"), i.e. the start date of the Project is after 02/08/2008. The start date of the Project is also prior to the date of publication of the PDD for global stakeholder consultation activity, which is from 01/07/11 to 30/07/11, and the validation team has assessed the PP's prior consideration of the CDM through documents reviews summarized as below:

- The project participant informed India's DNA in writing of intention to seek CDM status on 30/10/2010. This was verified by reviewing the Prior consideration of the CDM form submitted to NCDMA dated 15/10/2010.
- The project participant informed UNFCCC secretariat in writing of the Prior consideration of the CDM for proposed project activity and the same has been reviewed from the UNFCCC website, which shows received date as 16/10/2010. The Validation team also confirmed that the project activity is listed in the UNFCCC secretariat's publicly available list of such notifications, which is provided in the following link.

[http://cdm.unfccc.int/Projects/PriorCDM/notifications/index\\_html?s=3040](http://cdm.unfccc.int/Projects/PriorCDM/notifications/index_html?s=3040)



From the assessment it is established that the project participant has intimated the UNFCCC and NCDMA within six months from the start date of the project activity. Hence the validation team concludes that in accordance with paragraphs 2 & 4 of “Guidelines on the demonstration and assessment of the prior consideration of CDM” [Annex 13 of EB 62], CDM was seriously considered while making the investment decision for the project activity.

Based on the above assessment, the DOE hereby confirms that the CDM benefits were considered necessary in the decision to undertake the project as a proposed CDM project activity. Thus the proposed CDM project activity complies with the requirements of the latest version of the Guidance on prior consideration of CDM.

#### **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)**

As described above in section 3.6.1 of this report, the project participant has correctly applied baseline and monitoring methodology AMS I D, Version 17 to the project activity. The paragraph 10 of this methodology prescribes the baseline scenario for a proposed CDM project activity involving installation of a new grid connected renewable power plant/unit.

The baseline for such a project activity is defined as “the electricity delivered to the grid by the project activity that otherwise would have been generated by the operation of grid connected power plants and by the addition of new generation sources into the grid”. The DOE hereby confirms that no further identification of alternatives is required as per paragraph 107 of VVM manual version 1.2 in view of the applied methodology itself prescribing the baseline scenario.

#### **3.7.3 Investment analysis (114)**

The project participant has demonstrated the additionality of the proposed CDM project activity using the investment barrier, as stated in Attachment A to Appendix B of simplified modalities and procedures for small scale CDM project activities.

The project activity generates revenues by the sale of electricity generated, which is other than CDM revenue hence simple cost analysis cannot be used. The project participant has selected Post-tax Equity IRR as financial indicator for investment analysis and benchmark analysis to demonstrate the additionality of the project activity.



The high investment by the project participant behooves a commensurate return for the project participant, hence the validation team concluded that the financial indicator selected is appropriate for the project type and decision making context. Therefore, the selected financial indicator is in conformity with the Guidelines on the Assessment of Investment Analysis (EB 62, Annex 5) /B14/.

There are no alternatives to the project activity except that of generating equivalent amount of energy by the southern grid electricity system through its currently running power plant and by new capacity addition to the grid, investment comparison analysis is not possible. The project participant has an option of “to invest” or “not to invest”. Hence, the validation team has been able conclude that the benchmark analysis selected by the project participant is an appropriate method to demonstrate additionality. This is also correct and appropriate in accordance with the paragraph 19 of Annex 5 of EB 62 and Para 112 (a) of VVM /B13/.

**Validation of Input Parameters:**

Before reviewing the IRR calculations /P18/, the validation team attempted to validate the basic input parameters listed in the web hosted PDD and spread sheets of investment analysis in accordance with Para 114 of VVM.

The validation team while reviewing the input parameters noted that the source documents of certain input parameters were not presented in a manner so that the validation team can validate the appropriateness of the input parameters clearly. Hence, the validation team raised corrective action request CAR-6. In response to the CAR-6, the project participant has provided the validation team with all the relevant sources and documents. Having reviewed all the sources and documents with respect to input values and assumptions, the validation team concluded that the input values considered in calculation of equity IRR are appropriate at the time decision making and to the type of project activity and hence closed CAR-6.

The approach adopted by the validation team for verifying the assumptions and their references are as follows:

- Appropriateness of the sources of reference & assumptions and their relevance to the period in which the decision was made;
- Whether access to the references and information is provided;
- Whether the references and information are publicly available;
- Authenticity & credibility of the sources of information.



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The detailed assessment incorporating the means of validation is provided below.

Parameter	Value used	Source of value	Validation justification
Project Capacity in MW	6.40	WEG supplier offer dated 25 June 2010	The validation team has verified the project capacity by reviewing the original proposal submitted by technology supplier dated 25/06/2010 /P20/. The proposal was available before the date of decision i.e. 09/07/2010 and hence appropriate. The capacity of the project activity was also cross checked with the Purchase Order vide reference no: 'VWILLP/EIL/10-11/02-1A' dated, 10/07/2010 /P8/ and found to be correct, Hence, accepted by the validation team.
Number of WEGs	8	WEG supplier offer dated 25 June 2010	The validation team has verified the numbers of WEGs by reviewing the original proposal submitted by technology supplier dated 25/06/2010 /P20/. The proposal was available before the date of decision i.e. 09/07/2010 and hence appropriate. The numbers of WEGs forming the project activity was also cross checked with the Purchase Order with reference no VWILLP/EIL/10-11/02-1A. /P8/ and commissioning certificates /P7/. The validation team found the number of WEGs consistent in above-mentioned documents and hence, accepted.



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Total Project Cost (Million INR)	379.76	WEG supplier offer dated 25 June 2010	The validation team has verified the total cost of project by reviewing the original proposal submitted by technology supplier dated 25/06/2010 /P20/. The proposal was available before the date of decision i.e. 10/07/2010 and hence appropriate. The total cost of project was also cross checked with the Purchase Order vide reference no: VWILLP/EIL/10-12/02-1A /P8/ and it was noted that the actual cost is 4.33% lower than the offered cost of project. The impact on IRR due to decrease in the project cost has been described in detail in sensitivity analysis section of this report, which is in line with guidelines for the assessment of investment analysis. Hence, the validation team accepted the cost of project as appropriate.
Plant Load Factor	23.80%	Third Party PLF Assessment Report	The value of the PLF has been sourced from the third party PLF assessment report conducted by Ravi Enteck Ltd. /P10/. The validation team has reviewed the third party PLF report and found that the data used for the assessment of PLF was from May 1997 to April 1999. This is the latest data available for PLF assessment, which is sourced from the CWET (Centre for the Wind Energy Technology). This is also in accordance with paragraph 3 (b) of Annex 11, EB 48 /B18/



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			and as per paragraph 110 of VVM 01.2. The generation report for the year 2010-11 was made available to the validation team by the project participant. Based on the generation the PLF, when calculated worked, out to be 22.37%, which is lower than the estimated PLF by the third party. Hence, the validation team has accepted the value of PLF considered by the project participant.
O & M Cost as %age of capital cost	1.30%	WEG supplier offer dated 25 June 2010	<p>Based on the offer letter /P20/, the operation &amp; maintenance charges have been taken as 1.30% of the total project cost, which when calculated works out to be INR 0.21 Million per WEG. The proposal was submitted to the validation team. The information available in the proposal and financial analysis spread sheet were checked and found to be the same.</p> <p>The actual O&amp;M agreement /P21/ was made available to the validation team. It was noted that the actual O &amp; M cost was INR. 0.38 Million, which was higher than the price mentioned in the proposal of technology supplier. The O &amp; M charge has been subjected to sensitivity analysis, details of the same is provided in the sensitivity analysis section of this validation report.</p>
Escalation of O & M cost per annum	6%	WEG supplier offer dated 25 June 2010	Based on the offer letter /P20/, the year on year escalation on operation &



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			<p>maintenance charge has been taken as 6% which is applicable from 2<sup>nd</sup> year onwards.</p> <p>The proposal of technology supplier was submitted to the validation team. The information available in the proposal and financial analysis sheet were checked and found to be the same.</p>
Insurance cost as % of capital cost	0.12%	Insurance Quote	<p>The initial quote offered by the Insurance Company M/s. United India Insurance Co. Limited, dated 03/03/2010 was submitted to the validation team. The same was checked by validation team and found to be matching with value taken in the financial analysis sheet.</p>
Tariff (Rs./Kwh)	3.50	As per APERC dated 01/05/2009	<p>The tariff has been derived from the APERC tariff order which was available to the project participant at the time of decision making.</p> <p>The copy of APERC order /P22/ was made available to the validation team, from the order it was noted that the tariff offered for wind power projects was Rs. 3.50 per kWh.</p> <p>The signed Power Purchase Agreement dated, 30/10/2010 /P6/ was also made available to the validation team, the tariff agreed between the project participant and state utility company in Article 2, clause 2.2 of the agreement stipulates Rs. 3.50 per kWh. This is matching with the</p>





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			value used in Financial Analysis.
Escalation in Tariff up to 10 years	Nil	As per APERC dated 01/05/2009	The same has been checked by validation team from the APERC tariff order /P22/ and cross checked with the Power Purchase Agreement /P6/. From the assessment it is noted that the escalation has not been considered up to 10 years.
Escalation in Tariff from 11 <sup>th</sup> year onwards	Nil	Assumed	The APERC order has not indicated any escalation after 11 <sup>th</sup> year /P22/ which was cross verified with the Article 2, clause 2.2 of power purchase agreement /P6/.
Salvage Value	10%	Companies Act 1956	Sections 205 & 350 in the Schedule XIV of the Companies Act 1956. The weblink /P23/ for the same has been provided, it is noted that asset can be depreciated up to 95%. The PP has taken book depreciation up to 90%, which is more conservative and in accordance with Paragraph 4 of Guidelines on the Assessment of Investment Analysis /B14/. Hence, the validation team concluded that the value of salvage value applied is accurate and appropriate.
<i>Income tax depreciation rate (Written Down Value method)</i>			
Income tax depreciation rate	80%	Income Tax Act	80% as per Section 32, which as per rule 5(1), Appendix I of Indian IT Rules 1962.
Additional depreciation	20%	Income Tax Act	Additional 20% according to Section 32 of Indian IT act 1962.
<i>Book depreciation rate (Straight Line Method)</i>			
Book depreciation rate on all	4.50%	Companies Act, 1956	The rate of depreciation is as per the Schedule XIV of companies act, 1956 /P23/.





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assets			The rate of depreciation is in accordance with accounting principle of host party. The financial expert in the validation team, M/s. Karthikeyan & Jayaram, has confirmed that the book depreciation rates considered in the post tax equity IRR calculations are in accordance with the accounting principles of the host country. Hence, the validation team concludes that rate of depreciation considered for income tax calculation is appropriate and in accordance with Guidelines for assessment of Investment Analysis.
Book depreciation upto (% of asset value)	90%	Companies Act, 1956	Sections 205 & 350 in the Schedule XIV of the Companies Act 1956. The weblink /P23/ for the same has been provided, it is noted that asset can be depreciated upto 95 %. The PP has taken book depreciation upto 90%, which is more conservative and in accordance with Paragraph 4 of Guidelines on the assessment of Investment Analysis /B14/. Hence, the validation team concluded that the value applied is accurate and appropriate.
<i>Income Tax Rates</i>			
Income tax rate	30.90%	Financial Budget – 2009 -10	The applicable tax as per the Indian Union Budget for the FY 2009-10 as for Partnership Firms* /P24/. The information is available on

\* <http://taxguru.in/income-tax/income-tax-rate-dividend-distribution-tax-rate-stt-rate-wealth-tax-rate-mat-tax-rate-and-rate-applicable-to-special-income-for-a-y-2011-12-f-y-2010-11-as-provided-in-budget-2010.html>



			the public domain; the same was checked and found to be acceptable to the validation team. Further, the financial expert in the validation team, M/s. Karthikeyan & Jayaram, has confirmed that the rates of income tax considered in the post tax equity IRR calculations are in accordance with the accounting principles of the host country.
MAT	N.A.		As per the information available Indian Union Budget 2009-10 /P25/, MAT is not applicable to Limited Liability Partnership as per Section 184 of Income Tax Act.

The project participant did not consider any escalation in the power tariff up to 10 years, which is in accordance with APERC tariff order. However, the project participant did not apply escalation from 11<sup>th</sup> year onwards also in the investment analysis. The validation team requested the project participant to clarify why no such escalation was considered. The validation team raised CL 21 for the same.

In response to CL 21, the project participant clarified that Andhra Pradesh state electricity commission has fixed the constant tariff of INR 3.50/ kWh for the period of 10 years. The tariff is subject to change at the end of the term of PPA. The APERC has determined the tariff rate based on the cost plus approach.

The validation team checked the APERC tariff order /P22/ and the approach adopted by the regulatory commission to determine the tariff for new wind based projects. From the order it is noted that the commission has envisaged that the tariff would decrease year on year and beyond the 10<sup>th</sup> year the commission has not indicated any tariff or stated anything on escalation. The validation team finds the approach adopted by the project participant to be justifiable and acceptable, hence CL 21 was closed. The detailed justification for not considering escalation from 11<sup>th</sup> year onwards is provided in Table 3 of Appendix A of this validation report.



The Indian Union Budget FY 2009-10 as per section 184 of the Income Tax has exempted Limited Liability Partnership\* from paying Minimum Alternate Tax. The information is available on the public domain which was checked and it was noted the information was applicable to the project participant at the time of decision making.

The assumptions made for the investment analysis were validated on the basis of the above approach. The validation team hereby confirms that the values of the input parameters used to calculate the post tax equity IRR are appropriate and justified to the decision making context and Paragraph 111 (b) of VVM.

#### **Validation of Post Tax Equity IRR:**

The validation team has verified the assumptions as explained above and noted that they are correct and based on conservative values that are applicable at the time of investment decision making. The project participant has also considered benefits from accelerated depreciation [tax shield] and provisions of section 80IA [Income tax exemption] as per Indian Income Tax Act.

Accelerated depreciation of 80% is allowed on windmills as per the Indian Income tax act. Further, the additional 20% depreciation can be taken as per section 32 of Indian IT Act. So the project participant has considered 100% depreciation in first year itself, which is most conservative approach. Income tax has been considered at 30.90% as per the Income tax Act. The validation team hereby confirms that the project participant has applied all the statutory levies and taxes as per then valid accounting principles of the host country.

#### **Tax liability of the project activity (Income tax calculations):**

The tax liability on the project activity has been computed and presented in the IRR computation sheet, PP is exempted from paying tax as book profit is negative for the first two years and carry forward loss is for four years. For the next consecutive ten years there is no liability to pay tax at the corporate income Tax rate @ 30.90% since the PP is eligible to avail the tax holiday under section u/s 80 IA of the Income Tax Act and is exempted from paying income tax. The Indian Government introduced this policy of tax holiday to promote the renewable energy sector. As per the policy, the tax holiday can be availed within 15 years from the year in which the project activity begins its operations, for a maximum of 10 consecutive years. This provision is applicable to wind power projects also. As a result of the tax holiday under section 80 IA of the Income Tax Act, the tax liability of the PP during the initial year of operations reduces to "Nil".

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\* <http://indiabudget.nic.in/ub2010-11/bs/speecha.htm>



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The tax holiday can be availed of not beyond the 15<sup>th</sup> year from the year of commencement of operations of the project activity. After the 15<sup>th</sup> year, i.e. the post tax holiday eligibility period, the tax is computed by taking into consideration Corporate Income Tax for payment of tax. The approach adopted by the PP is in compliance with the applicable Income Tax Act & Rules of the Host country. As per the financial analysis spreadsheet the tax shield has been considered post 10<sup>th</sup> year, where the 1<sup>st</sup> year the project incurs losses and in the subsequent 9 years the actual tax payable has been considered. This approach is acceptable to the validation team since the losses are carried forwarded from 2<sup>nd</sup> year to 10<sup>th</sup> year, hence the PP would not be eligible to claim the tax shield during this period. The approach adopted is acceptable since this is in line with the accounting principles of the Host Country, the approach adopted in computation have also been checked and verified by Financial Expert who is a qualified Chartered Accountant.

The validation team also cross checked the income tax rate by accessing the information available in the Government of India's Budget for FY 2009-10\*. The financial analysis computation has also been verified and accepted by a qualified Financial Expert (who is a practicing Chartered Accountant by profession) and forms a part of this validation team. The financial expert has also provided a written confirmation of the rates applied.

**IRR calculations:**

The arithmetical accuracy was also found to be correct. The IRR calculations have been provided in a transparent spreadsheet and verified by the validation team. All the cells of the spreadsheets can be accessed and the data and formulae in the cells can be viewed, as the cells are unprotected. The post tax equity IRR has been computed for 20 years of operations, which is the lifetime of the project activity and is in conformity with the guidance issued by CDM EB vide Annex 5 of EB 62. As required by Annex 5 of EB 62 the expected profit on the sale of assets at the end of the assessment period has been taken as salvage value in the terminal year, which is conservative as the assessment period is same that of the project lifetime. The project participant has taken into account profit after tax, depreciation, tax shield and salvage value (in the terminal year) in the computation of post tax equity IRR. The principle adopted in making projections and computing IRR conforms to the accepted and standard accounting and taxation principles of the host country. The correctness of the calculations of the investment analysis is also validated by M/s. Karthikayan & Jayaram, who are qualified Chartered Accountants and also a part of this validation team as financial expert. The Post Tax Equity IRR calculations have been certified /P26/ by the financial expert for their

\* [indiabudget.nic.in/ub2009-10/bh/bh1.pdf](http://indiabudget.nic.in/ub2009-10/bh/bh1.pdf)



correctness in accordance with the accounting principles of the host country considering the input values as validated (as described above) by the validation team.

While reviewing the post tax equity IRR calculations, the validation team observed the inclusion of the “increase/decrease in current assets” as cash out flow. The validation team raised CAR 7 (a) and CAR 7 (b) towards the same including calculation of working capital margin. The project participant explained that according to the supplier’s offer, the project participant needs to pay the O & M expenses quarterly in advance to the O & M contractor and there is billing cycle of 30 days for revenue from the sales of electricity. Since project participant needs to repay the loan and to full fill other expenses there is requirement of working capital. Working capital has additional financial implications on the project and hence needs to be considered in the investment analysis. The validation team has confirmed the requirement of the quarterly O & M payments based in the offer submitted by the technology supplier and confirms the same to be correct.

The working capital represents the amount of funds which a firm needs in order to cover its current obligations. The working capital requirements for the project activity were estimated at the time of the decision making based on the technology suppliers’ offer and considering one billing cycle i.e. 30 days of anticipated revenue and one quarter payment towards O&M i.e. for 90 days. From this, the margin for working capital which is the amount investible by the promoters at the inception of the project has been calculated has been reckoned in the cash outflow for the project activity. Further, this margin on working capital is also shown as a cash inflow back into the system at the end of the lifetime of the asset for calculating the IRR of the project activity, which is in accordance with the paragraph 6 of guidelines for the assessment of investment analysis (EB 62, Annex 5).

The approach adopted to compute the working capital was found to be acceptable and the same was also been checked by the financial expert who is a part of this validation team. The crosschecking of values revealed that there were no mismatches between the values in the assumption sheet of the IRR calculations and the values and the values that were available from public references or sources.

In the above background, the validation team concludes that underlying assumption are appropriate, accounting principles adopted in calculations and calculations per se are correct and the guidance vide paragraph 111 of the VVM has been taken care of. With all above considerations and calculations the Post Tax Equity IRR works out to 8.29%.

**Benchmark (112)**

The project participant has used the Post Tax Equity IRR as the financial indicator in investment analysis for the demonstration of additionality of the proposed CDM project activity. The project participant in webhosted PDD had used the 16.40% (Cost of Equity) /P27/ as the benchmark. The Cost of Equity has been calculated using the Capital Asset Pricing Model (CAPM).

The selection of Cost of Equity as a benchmark for the financial indicator of post tax equity IRR is in accordance with the Paragraph 12 of the EB 62, Annex 05 /B14/ which provides the guidance on the type of benchmark to be selected for the purpose of making an investment analysis. The benchmark chosen can be regarded as suitable for the purpose of the investment analysis.

Since, the latest version of “Guidelines on the Assessment of Investment Analysis” (Annex 5, EB 62) gives the option of using default values in the computation of the benchmark, in case of Cost of Equity is found to be the appropriate benchmark. The said guideline was not available at the time of the web hosting of the PDD for global stakeholders’ comments i.e. at the start of validation. Hence, the validation team along with its financial expert raised clarification request CL-20 on the consideration of benchmark value either based on CAPM or based on default values.

To clarify the CL-20, project participant provided calculations of the benchmark (i.e. cost of equity) using both the methods available i.e.

1. As per CAPM using standard market data available at the time of decision making and
2. Using the default values adjusted with inflation rate as per Annex 5 of EB 62.

The validation team has conducted validation of both the benchmarks and found them to be appropriate to the type of approach for each of them in decision making context. However, the benchmark calculated as per the CAPM based on the standard market data available is found to be the most conservative of the two and hence accepted by the validation team for the purpose of demonstration of additionality of the proposed CDM project activity through investment analysis. The detailed assessment to validate each of the benchmark is described below.

**Validation of Cost of Equity (CoE) based on CAPM:**

The CAPM is a widely accepted model by investors to estimate the expected rate of return on equity (Cost of Equity). The project participant has used the following equation to calculate the cost of equity.





$$\text{Cost of Equity} = \text{Risk free return} + [\beta \times \text{Market risk premium}]$$

The formula used to calculate the expected rate of return on equity was found correct as checked from

[http://en.wikipedia.org/wiki/Capital\\_asset\\_pricing\\_model](http://en.wikipedia.org/wiki/Capital_asset_pricing_model)

The market risk premium is estimated by looking at the difference between average returns on stocks (calculated as compounding average growth rate i.e. CAGR) and returns on a risk less security.

There are three parameters involved in the calculation of cost of equity as per Capital Asset Pricing Model.

- 1. Risk free return ( $R_f$ ):** The rate of risk free return has been taken as 8.38%, which has been sourced from Central Government Securities for the period 1990-91 to 2009-10 and is based on data available from the Reserve Bank of India (RBI) bulletin on 11/06/2010 and therefore available to the project participant as on the date of decision, i.e. 10/07/2010. The validation team confirms that it is appropriate as it is the rate of central government securities that matches the time horizon of the cash flow being analysed. The cash flow is impacted due to CDM revenue only for 10 years. Also, the 10 years cash inflow is considerably long term to compare with the equity investment of an investor. The central government securities rate is sourced from Reserve Bank of India. Reserve Bank of India is a Monetary Authority, which formulates implements and monitors the monetary policy of the host country India. The Reserve Bank of India is also regulator and supervisor of the financial system of the host country. It prescribes broad parameters of banking operations within which the country's banking and financial system functions. It also acts as "Banker to the Government" and "Banker to the Banks". Hence, the validation team is of the opinion that the risk free return considered in the calculation of cost of equity (benchmark) is the most appropriate and correct.

The validation team accessed the webpage link provided by the project participant and confirmed that the weighted average rate of interest on Central Government Securities in 2009-10 was 8.38%. The said information is available on the RBI's website. The date of publication of RBI bulletin was also checked and it was confirmed that this information was available to the project participant at the time of decision making. The validation team has also been able to confirm that the RBI website has been operational since 1996\*.

\* [http://www.rbi.org.in/scripts/chro\\_1991.aspx](http://www.rbi.org.in/scripts/chro_1991.aspx)



**2. Market Return ( $R_m$ ):** The project participant has considered Bombay Stock Exchange (BSE) as main source to calculate the market return. This is a stock exchange, which has maximum indices operated / traded by various listed companies in India, including BSE Sensex, BSE 500, BSE 200, BSE 100, etc. The project participant has calculated the expected market return based on all four indices mentioned above. The market return of BSE 200 indices has been opted to calculate the cost of equity. The BSE 200 is one among well accepted market indices having a diverse portfolio of 200 stocks across various industry sectors. The market returns of BSE 200 is the most conservative of all indices for the purpose of calculation of benchmark i.e. cost of equity. Hence, the chosen index was found appropriate as it gives a fair picture of the market return and cost of equity. In order to calculate the market return, period from 01/04/1989 (base year) to 30/06/2010 has been taken. It's a sufficiently long time in which the market might have gone through all sorts of volatility and it will represent an average return that one can expect if invested in the market. The calculated market return value comes to be 15.77%. By this way the risk involved in under estimation or over estimation of the market returns are avoided as the returns has been calculated using large number of companies, which constitutes the bulk of the listed securities in India based on market capitalization over a reasonable time period.

**3. Beta ( $\beta$ ):** The beta value for the project type, as stated in the PDD, is derived as a proxy value and is based on the beta values of the listed stocks of a group of power generating companies in India that were listed on the Bombay Stock Exchange at the time of the project participant's investment decision. All the power generating companies which have a trading data of at least three years i.e. from 30/06/2007 to 30/06/2010 have been selected. This duration is 3 years of operation prior to the date of decision of the proposed CDM project activity.

The companies that were considered for the computation of the beta value are as follows:

1. BF Utilities Ltd.
2. Neyveli Lignite Ltd.
3. Gujarat Industries Power Co Limited
4. Reliance Infrastructure Ltd.
5. Tata Power Ltd.





All the companies considered in the sample group for deriving the beta value fall into the same industry type, viz., “Power Generation & Distribution”. The project participant has computed the beta values for the stocks of these companies from market data available on the BSE web site [www.bseindia.com/histdata/hindices.asp](http://www.bseindia.com/histdata/hindices.asp), which is an authentic and reliable source for market related data on listed companies in India.

The beta ( $\beta$ ) values of companies listed in stock exchanges are normally calculated and published by leading financial/equity research organizations. The project participant has provided the screen shot of the beta ( $\beta$ ) values /P28/ of the companies’ mentioned above, which is published by Bloomberg. Bloomberg is a very widely known equity research firm involved in analysis of various equity movements.

The project participant submitted an excel spreadsheet computation of beta values. The raw beta values of the 5 companies (mentioned above) in the group are considered. The unlevered beta is then calculated based on the tax rate and Debt: Equity ratio of an individual stock. The unlevered beta is considered to be appropriate as it excludes the company specific financial risk. The average beta value calculated is worked out to 1.09 and the same was used by the project participant to calculate the cost of equity, which is acceptable to the validation team.

#### **Validation of Cost of Equity (CoE) based on default values of Annex 5, EB 62:**

As described above in this report, during the course of validation the project participant has also computed the cost of equity (benchmark) using the approach as provided by CDM EB in its “Guidelines on the Assessment of Investment Analysis” (EB 62 Annex 05) /B14/. The nominal benchmark was computed based on the default value of Cost of Equity of Host Country along with the forecasted inflation rate of the host country.

The cost of equity (benchmark) was computed in the following manner:

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

Where:

- ✓ Default value for Real Benchmark = 11.75% (as per Appendix of Annex 5, EB 62)
- ✓ Projected Inflation Rate for India in next 5 years as 5.00% (Reserve Bank of India Forecast)



Based on the above approach and corresponding values, the cost equity (benchmark) is worked out to be 17.34% /P29/. 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 and appropriate to the type of project activity and decision making context.

The validation team also reviewed a total of 3 previous investment decisions by the project participant i) 6.40 MW in Karnataka, ii) 8.0 MW in Tamil Nadu iii) 6.4 MW of the Bundled Project in Gujarat. Based on the information available on the UNFCCC website it is noted that in all these previous investments in the past the benchmark adopted was "16.40%".

As mentioned earlier in this section of the report, the validation team has concluded the benchmark of 16.40% calculated based on the CAPM is conservative than the later i.e. 17.34% calculated based on the Appendix of Annex 5, EB 62. Hence, the validation team accepted the benchmark calculated as per CAPM i.e. 16.40% in the investment analysis to demonstrate the additionality of the proposed CDM project activity.

### **Conclusion:**

The validation team has confirmed that all data used to arrive at the benchmark was derived from sources available to the project participant at the time of the investment decision and hence the validation team accepted the same.

The IRR for the investment of the project works out to be: Post Tax Equity IRR is 8.29%. The Post Tax Equity IRR values are lower than the benchmark of 16.40%. The validation team therefore confirms that the financial returns from the proposed CDM project activity would not be sufficient to justify the required investment as the Post Tax Equity IRR does not meet a minimum rate of return that could be expected by an investor. The project activity therefore satisfies the criterion for additionality defined in the Non-binding best practice examples guidance [EB 35 Annex 34] /B16/ to demonstrate the additionality for SSC project activities, viz., that it is not a financially viable alternative for the project participant.

### **Sensitivity Analysis (111(e))**

In order to demonstrate the robustness of the conclusion arrived at above, viz., that the project is additional; and as per the guidelines on the assessment of investment analysis (section VI of EB 62, Annex 05 guidelines), the sensitivity of the investment analysis to all parameters constituting more than 20% of either total project costs or total project revenues has been determined by the project participant.



Paragraph 20 of the EB 62 Annex 05 Guidelines on the assessment of Investment analysis specifies which input parameters need to be varied for the purpose of the sensitivity analysis. Accordingly, 4 input parameters in the investment analysis were subjected to a variation of +/- 10% to check the effect it would have on the overall financial analysis. These parameters either constitute more than 20% of total project revenues or 20% of the total project cost was selected, in line with the requirements of paragraph 20 of EB 62 Annex 13.

The following 4 parameters were subjected to variation:

1. Capital Cost
2. Plant Load Factor
3. O&M Charges
4. Tariff (for sale of electricity to the grid)

The range of variation (+/- 10%) in these parameters could be considered as reasonable in the context of the project activity, for the following reasons:

**Capital Cost:** At the time of validation, the purchase order for the supply of equipments was not issued. The capital cost was subjected to two variations of +10% (increase) and -10% (decrease) in both the cases the post tax equity IRR remained below the benchmark.

**Plant Load Factor:** The PLF is deduced from the third party PLF Report as 23.80% /P10/. The PLF has been subjected to +10% and -10%. The results obtained in the two scenarios demonstrate that even with 10% increase in PLF the IRR does not cross the benchmark; the result is similar with 10% decrease in PLF.

Additionally the validation team checked Andhra Pradesh Electricity Regulatory Commission's (APERC) tariff order dated, 01/05/2009 /P22/, from the order it was noted that the PLF prescribed was 24.50%. The PLF used in the financial analysis based on third party report is 23.80 which is less than the APERC PLF. Even though the PLF prescribed is for the entire region (Andhra Pradesh State) the validation team raised CL 19 and PP was requested to subject the sensitivity up to 13.24% which would cover the 10% of sensitivity of the PLF based on APERC order i.e. 24.40%. Based on CL 19 the PP subjected the PLF upto 24.50% variation and additionally upto 39.23% variation, even in both the scenarios the IRR still remained below the benchmark.

The validation team noted that even with the increase in PLF (from the base PLF of 23.80% to 24.50 % and further to 39.23%) the post tax equity IRR remained below the benchmark. The validation found the approach adopted by the PP to be satisfactory and acceptable. The validation team




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based on the sectoral experience is of the opinion that the scenario of higher PLF (39.23%) through out operational life time of the project activity is unlikely. Based on the satisfactory and acceptable response CL 19 was closed successfully.

**Power tariff:** The PP has subjected the power tariff to +10% & 10% variations, the IRR does not cross the benchmark when the tariff is increased or decreased by 10 % variation.

**Operation & Maintenance (O&M) Charges:** The PP has subjected the O&M charges to +10% & -10% variation, the IRR does not cross the benchmark when the O&M charges is increased or decreased by 10 % variation.

The validation team agrees with the approach followed in the selection of parameters for the sensitivity analysis, as the criteria employed in the same meets the EB 62 Annex 05 guidelines for Investment analysis. The results of the sensitivity analysis carried out have been tabulated by the project participant in the PDD and reproduced in the table below.

Parameters subjected to sensitivity analysis	VARIATION		
	-10%	0%	10%
Capital Cost	10.31%	8.29%	6.61%
PLF	6.62%	8.29%	9.86%
O&M Expenses	8.54%	8.29%	8.04%
Tariff	7.75%	8.29%	8.80%
<b>Benchmark</b>	<b>16.40%</b>		

The results of the sensitivity analysis indicate that even in situations favoring higher net electricity export, decrease in project cost and increase in power tariff, the post tax equity IRR for the investment would not cross the benchmark of 16.40%.

The sensitivity analysis is included by the project participant as a part of the spreadsheet for investment analysis. The results of the sensitivity analysis can be checked by inserting the range of variation (i.e. +/- 10%) in the worksheet named "sensitivity" in the investment analysis spreadsheet. The financial expert in the validation team also validated the accuracy of computations of the sensitivity analysis and confirmed that the same are correct.

In conclusion, therefore, the post tax Equity IRR for the project activity without CDM revenue works out be 8.29%.



Even with sensitivity analysis carried out as per the guidelines on assessment of investment analysis (EB 62 Annex 5), the values of Post Tax Equity IRR do not cross the benchmark adopted. The validation team therefore concurs with the project participant that the project activity is additional since it is not financially viable without the benefits from CDM.

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

The project participant has demonstrated additionality using the Investment Barrier route and has not conducted barrier analysis for demonstrating additionality.

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

Being a small scale project activity, it is not a requirement for the project participant to demonstrate common practice analysis to support the claim for additionality. As per Attachment A to Appendix B of Simplified modalities and procedures for small scale CDM project activities /B15/, additionality can be demonstrated by any one of the four barriers listed. The project participant has demonstrated additionality using investment barrier only.

## **3.8 Monitoring plan (124)**

The project uses the approved monitoring methodology AMS ID Version 17. The applicability of the methodology to this project activity has been discussed in the 3.5.1 section above.

The steps taken to assess whether the monitoring arrangements described in the monitoring plan are feasible within the project design are described below:

The project activity uses the approved baseline and monitoring methodology AMS I D, Version 17. Validation team considers the monitoring plan to be in line with the requirements of the methodology based on the following assessment.

According to the Paragraph 22 of applied methodology, monitoring shall consist of (with respect to proposed CDM project activity)

Quantity of net electricity supplied to the grid in year  $y$ : this is included by the project participant as the parameter,  $EG_{BL,y}$  in the monitoring plan.

The net electricity supplied to the grid ( $EG_{BL,y}$ ) is stated to be calculated from electricity exported by project activity to grid, after apportioning of transmission losses ( $T_E$ ) ( $EG_{Export,y}$ ) between the 33 kV and 132 kV metering points, electricity export recorded at 33 kV cluster metering points ( $EG_{jMR,EXPORT,Y}$ ), electricity import recorded at 33 kV cluster metering points ( $EG_{jMR,IMPORT,Y}$ ), electricity export recorded at 132 kV meters at Enercon pooling substation ( $EG_e$ ) and total percentage of

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transmission loss ( $T_E$ ) for export between the metering point at 33 kV metering points and the metering point at 132 kV at the Enercon pooling substation.

The PP will make clusters of WEGs at the project site for the purpose of metering. Each cluster will have main and the check meter. All the clusters of the project activity will exclusively be connected to WEGs of the project activity - no WEGs of other project owners are connected to these clusters. The clusters of project activity and clusters of other customers are connected to the Enercon pooling sub-station with a bulk metering point at 132 kV. State utility calculates the net electricity supplied to the grid at the 132 kV Enercon substation by apportioning of transmission loss to the meter reading recorded at the 33 kV.

The total % of transmission loss for export between 132 kV metering point at Enercon substation and all the WEGs connected to sub-station is calculated by the state utility is endorsed jointly by the representatives of Enercon and the state utility. The transmission loss applied to the project activity by the state utility is reflected in transmission loss calculation sheet signed by the representatives of Enercon and state utility.

Project participant has provided for archiving in electronic and hard form of all the monitored data. This is stated transparently in section B.7.1 of the revised PDD. Project participant has provided for keeping the data for 2 years after the end of the last crediting period.

The monitoring plan includes requirements and procedures for meter testing and calibration. The meters used for monthly joint meter recording at sub station are tested and calibrated by the authorized agency of the state electricity board.

The webhosted PDD, version 01, did not contain sufficient information about the following aspects of the monitoring:

Data management processes, QA & QC procedures had not been explained [CAR 4]. The procedure for data collection and archiving had not been clearly presented.

The frequency of accuracy testing of the meters, and accuracy class of the energy meters used for the measurements had not been indicated the measurement point/s for the export of electricity from the project activity had not been stated.

The PP in reply to the above mentioned findings has incorporated the following changes in the revised PDD version 4.0:



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- The revised PDD includes QA/QC procedures which are more complete with respect to actions to be taken for data discrepancies observed. Responsibilities for data management also are clearly outlined.
- The Annex 4 of revised PDD also defines in an adequate manner, the procedures for data collection and archiving, accuracy class of energy meters and the frequency of testing. The meters are designated to be of accuracy class 0.2. This is an acceptable accuracy level of meters installed at grid interchange point, as per the National Regulation for the Installation & Operation of Meters 2006. Also, the frequency of testing the meters for their accuracy, specified as “annual” can be regarded as sufficient. The general guidance to SSC methodologies (EB 61 Annex 21) has specified the calibration interval to be 1 year.
- The revised PDD also brought in adequate details of the points of measurement (at the sub-station) and the description of apportioning procedures in section B.7.1 and in Annex 4. Hence, the CAR 4 was closed.

The validation team hereby confirms that the project participant is able to implement the monitoring plan in accordance with the applied monitoring methodology.

### 3.9 Sustainable development (127)

The DNA of India has confirmed the contribution of the project activity to the sustainable development of the host Party. The validation team has confirmed that the host country approval granted by the DNA of India can be treated as valid. A description of the same is provided in section 3.1 of this report.

The PDD describes the project activity's contribution to sustainable development in terms of the four indicators 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 power projects of the scale of the project activity.

Project participant has obtained approval /P1/ from DNA of India. The letter of approval from the DNA confirms that the project activity contributes to sustainable development in India. The project activity is in compliance with all currently applicable legislations. As the project activity does not lead to generation of liquid or gaseous effluents and will partly displace fossil fuel based electricity generation, there are only benefits derived out of the project and no adverse effects are envisaged. The project activity contributes to the social well being of the region. During the site visit it was noticed that the project activity provided employment to local people.





### 3.10 Local stakeholder consultation (130)

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

The PP had sent a formal invitation to the identified stakeholders inviting them to attend the stakeholder consultation meeting. The invitations to the stakeholders were sent on 28/04/2011.

The local stakeholder consultation meeting was held at on 07/05/2011 at Viswakarma Function Hall in Anantapur District, Andhra Pradesh, India.

In the opinion of the validation team, the notice period provided by the project participant to the stakeholders for attending the consultation meeting (more than 1 week) can be regarded as sufficient.

The webhosted PDD did not reveal how the stakeholders were invited and how their feedback was compiled. The validation team raised CL 12, 13, 14 & CAR 5, requesting the project participant to clarify the same. The revised PDD submitted on 06/12/2011 was updated with information pertaining to how stakeholders were invited and how their feedback was recorded and documented. The minutes of stakeholder meeting conducted at Anantapur were made available to the validation team. The names of stakeholders, who attended, along with their signatures, were found recorded on the minutes maintained. Based on satisfactory response and evidence CL 12, 13, 14 & CAR 5 were closed.

During the site visit, the validation team also interviewed some of the local stakeholders at who had also attended the meetings. The local stakeholders confirmed that the project participant had conducted meetings on the above mentioned date and had provided an opportunity to them to voice their opinions on the CDM project activity. Queries raised by the stakeholders had also been responded to by the project participant in a satisfactory manner.

On the basis of the justification provided by the PP in the PDD, together with documentary evidence provided as well as the team's personal interaction with the stakeholders, the DOE confirms that the process of local stakeholder consultation was adequately conducted.

### 3.11 Environmental impacts (133)

A notification pertaining to Environment Impact Assessment (EIA) was published on DNA of India's (i.e. Ministry of Environment & Forests) web site <http://envfor.nic.in/legis/eia/so1533.doc/B17/>. The Schedule list, section 1 (c) of this EIA notification clearly states that projects above 25 MW capacity or projects with 10,000 hectares of culturable command area



need to perform Environmental Impact Assessment studies. Since the project activity is below 25 MW limit and does not cover 10,000 hectares of culturable command area, it is not necessary for the project participant to conduct an EIA study.

However, the validation team has assessed that project activity does not involve any negative environmental impacts, as the equipment used for the project activity generates electricity using wind energy which is one of the cleanest sources of energy.

The project participant has also complied with the statutory requirements in respect of obtaining the necessary clearances from the State Pollution Control authorities. The same were verified by the validation team.

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

The PDD was webhosted on the UNFCCC CDM web site for global stakeholder comments as per CDM requirements. The project design document was webhosted from 01/07/2011 to 30/07/2011.

A total of 17 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 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 'Clean Energy generation from wind energy in the state of Andhra Pradesh'. 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, technological and other 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



barrier 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 12,238 tCO<sub>2</sub>e emission reductions per annum.

The review of the project design documentation (version 04) 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 “Clean Energy generation from wind energy in the state of Andhra Pradesh” as a CDM project activity.

## 6 REFERENCES

### Category 1 Documents:

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

- /1/ Letter of Approval from the Host Country, Dt. 13/09/2011, Ref no: 4/20/2011-CCC
- /2/ PDD (Final), Version 04, Dt. 12/01/2012
- /3/ PDD (revised), Version 03, Dt. 01/01/2012
- /4/ PDD (revised), Version 02, Dt. 12/10/2011
- /5/ Webhosted PDD, Version 01, Dt. 15/06/2011
- /6/ Power Purchase Agreement, Dt., 30/10/2010
- /7/ Commissioning Certificates:  
 For 0.8 MW (1 WEG), Dt., 18/10/2010 with reference no: Lr. No. DEE /O/NDL/TECH/F. NO.DOC/D.NO 1554  
 For 1.6 MW (2 Nos. x 800 kW), Dt., 18/10/2010 with reference no: Lr. No. DEE /O/NDL/TECH/F. NO.DOC/D.NO 1556  
 For 2.4 MW (3 Nos. x 800 kW), Dt., 18/10/2010 with reference no: Lr. No. DEE /O/NDL/TECH/F. NO.DOC/D.NO 29  
 For 1.6 MW (2 Nos. x 800 kW), Dt., 31/03/2011 with reference no: Lr. No. DEE /O/NDL/TECH/F. NO.DOC/D.NO 413
- /8/ Purchase Order – Dt., 10/07/2010, with reference no: VWILLP/EIL/10-11/02-1A
- /9/ Undertaking from Equipment Supplier –Enercon India Limited
- /10/ Third Party PLF Report by M/s. Ravi Enteck Limited, Dt., 24/11/2010
- /11/ Emission Reduction Calculation Sheet, Version 1.0, Dt., 12/10/2011
- /12/ Prior Consideration of CDM Form, Dt., 15/10/2010
- /13/ Email communication UNFCCC secretariat, Dt., 16/10/2010
- /14/ Email communication Host Party DNA, Dt., 30/10/2010
- /15/ Confirmation email from UNFCCC secretariat acknowledging the receipt of Prior Consideration of CDM Form, Dt., 26/10/2010
- /16/ Confirmation email from Host Party DNA acknowledging the receipt of Prior



- Consideration of CDM Form, Dt., 02/11/2010
- /17/ Extract of CDM Board Resolution, Dt., 09/07/2010
- /18/ IRR Calculations Sheet, version 2.0, Dt., 12/10/2011
- /19/ IRR Calculations Sheet, version 1.0, Dt., 12/10/2011
- /20/ Offer Letter from Enercon (India) Limited, Dt., 25/06/2010
- /21/ Operation & Maintenance Agreement, Dt., 28/03/2011
- /22/ APERC Order for Determination of Tariff / Power Purchase Price in respect of "New Wind Based Power Projects", Dt., 01/05/2009
- /23/ Schedule XIV of the Companies Act 1956,  
URL:<http://asa-india.com/asa/Depreciation%20Rates%20Companies%20Act.pdf>
- /24/ Indian Union Budget 2009-10  
URL: <http://taxguru.in/income-tax/income-tax-rate-dividend-distribution-tax-rate-stt-rate-wealth-tax-rate-mat-tax-rate-and-rate-applicable-to-special-income-for-a-y-2011-12-f-y-2010-11-as-provided-in-budget-2010.html>
- /25/ Minimum Alternate Tax Not Applicable to Limited Liability Partnership Firms-  
URL: [http://www.llponline.in/tax\\_llp.php](http://www.llponline.in/tax_llp.php)
- /26/ Chartered Accountant Certificate, Dt., dd/mm/yyyy
- /27/ Benchmark Calculation Sheet, Version 1.0, Dt., 12/10/2011
- /28/ Screenshot Beta derived from Bloomberg for a period bw 30/06/2007 to 30/10/2010.
- /29/ Benchmark Calculation Sheet, Version 2.0, Dt., 12/10/2011

### Category 2 Documents:

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

- /1/ Host Party DNA's website, [http://www.cdmindia.in/reports\\_list\\_details.php?](http://www.cdmindia.in/reports_list_details.php?)
- /2/ UNFCCC website, <http://maindb.unfccc.int/public/country.pl?country=IN>
- /3/ Project Design Document form for Small-Scale project activities  
[http://cdm.unfccc.int/Reference/PDDs\\_Forms/PDDs/index.html](http://cdm.unfccc.int/Reference/PDDs_Forms/PDDs/index.html)
- /4/ Guidelines for completing the simplified Project Design Document, Version 05.0, EB 34.
- /5/ Approved applied methodology - AMS ID , Version 17  
<http://cdm.unfccc.int/methodologies/DB/RSCTZ8SKT4F7N1CFDXCSA7BDQ7FU1X>
- /6/ Central Electricity Authority:  
[http://www.cea.nic.in/reports/planning/cdm\\_co2/cdm\\_co2.htm](http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm)
- /7/ Tool to determine the remaining lifetime of equipment, Annex 15 of EB 50
- /8/ Central Electricity Authority (CEA): CO2 Baseline Database, version 6.0
- /9/ "Tool to calculate the emission factor for an electricity system", Version 02.0.0
- /10/ "Tool to calculate the emission factor for an electricity system", Version 02.2.1
- /11/ Guidelines on the demonstration and assessment of the prior consideration of



## CDM, EB 62 Annex 13

- /12/ Prior Consideration: <http://cdm.unfccc.int/Projects/PriorCDM/notifications/index.html>
- /13/ Validation and Verification Manual, Version 01.2, EB 55, URL: [http://cdm.unfccc.int/Reference/Manuals/accr\\_man01.pdf](http://cdm.unfccc.int/Reference/Manuals/accr_man01.pdf)
- /14/ Guidelines on the Assessment of Investment Analysis, EB 62, Annex 5
- /15/ Attachment A to Appendix B of Simplified Modalities and Procedures for small scale CDM project activities.
- /16/ Non Binding Best Practices, Annex 34, EB35  
URL: [http://cdm.unfccc.int/EB/035/eb35\\_repan34.pdf](http://cdm.unfccc.int/EB/035/eb35_repan34.pdf)
- /17/ EIA Notification of 2006, URL: <http://envfor.nic.in/legis/eia/so1533.pdf>
- /18/ Guidelines for the reporting and validation of Plant Load Factors, EB 48, Annex 11

**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 - Enercon (India) Limited
- /2/ Mr. Saujanya Kumar - Executive - CDM, Enercon (India) Limited
- /3/ Ms. Anindita Bhandopadaya - Assistant Manager, CDM, Enercon (India) Limited
- /4/ Mr. Venkatesh Reddy – Local Resident
- /5/ Mr. Mohan Reddy – Local Resident
- /6/ Mr. Subrayadu – Local Resident
- /7/ Mr. Y Pratap Kumar – Asst. Manager, Projects, Enercon (India) Ltd.
- /8/ Mr. D. Suresh Seshagira – Sr. Engineer, Projects, Enercon (India) Ltd.



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

### **Mr. Bhavesh Prajapati, Team Leader**

Bureau Veritas Certification, Lead Verifier – Climate Change

He is Graduate in the field of Chemical Engineering and post graduate in finance (MBA - Finance). He has more than total of 9 years of Industrial work experience in the fields of environment audits, consultancy of HVAC (pharmaceutical industry as well as commercial air conditioning) and utility services and project management of various Greenfield as well as gray field projects. He has undergone lead verifier's training on Clean Development Mechanism. He is involved in the Validation/verification projects of CDM and VCS.

### **Mr. Senthil Kumar. V, Team Member**

Bureau Veritas Certification, Verifier – Climate Change

He is a Environmental Engineer with over 6 years of experience in the field of Consultancy related to Training and Implementation of Management Systems (ISO : 9000, 14000 & 18000) for various organizations. For the last 4 years, he is involved in different type of Clean Development Mechanism Projects. He has also experience in offering project management services to various renewable energy projects. Has undergone training related to Clean Development Mechanism and is currently involved in validation and verification of CDM project activities.

### **Mr. S. Thyagaraj, Team Member**

Bureau Veritas Certification, Lead Verifier – Climate Change

He has a Bachelors of Technology degree in Chemical Engineering and over 7 years of experience in Technical services covering various functions like Production management, Energy conservation and Environment protection measures in the manufacturing industry including ISO 14001 based quality management systems. He is a certified Energy Manager from Bureau of Energy Efficiency. Working for the last 18 months in Bureau Veritas Certification (India) Pvt. Ltd. as Verifier - Climate change. Has undergone training related to Clean Development Mechanism and is currently involved in validation and verification of CDM project activities.

### **Mr. H. B. Muralidhar**

Bureau Veritas Certification, Internal Technical Reviewer

He is a Graduate in Electrical Engineering with 25 years of experience power generation and distribution related fields as well as in management system auditing. Lead auditor in Bureau Veritas Certification for Environment Management System, Quality Management System and



Occupational Health and Safety Management System. He is the Lead auditor for Environmental Management System, Quality Management system and Occupational Health and Safety Management System. He has undergone intensive training on Clean Development Mechanism. He is the technical expert & conducted Validation / Verification for more than 50 CDM Projects.



## APPENDIX A: VISH WIND INFRASTRUCTURE LLP CDM PROJECT VALIDATION PROTOCOL

**Table 1** Validation requirements based on the Clean Development Mechanism Validation and Verification Manual (Version 01.2)

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
<b>1. Approval</b>			<b>COUNTRY A</b> <i>(India)</i>	<b>COUNTRY B</b> <i>(Not applicable)</i>		
a. Have all Parties involved approved the project activity?	VVM	44	Letter of Approval from the Host Party DNA has not been submitted by the PP.		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 participatn or directly from the DNA)	VVM	45	Please refer CL 1 above			
c. Does the letter of approval from DNA of each Party involved:	VVM	45	Letter of Approval from the Host Party DNA has not been submitted by the PP.		(CL 1)	OK
i. confirm that the Party is a Party of the Kyoto Protocol?	VVM	45.a				
ii. confirm that participation is voluntary?	VVM	45.b				
iii. confirm that, in the case of the host Party,	VVM	45.c				



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
the proposed CDM project activity contributes to the sustainable development of the country?					
iv. Refers to the precise proposed CDM project activity title in the PDD being submitted for registration?	VVM	45.d			
d. Is(are) the letter(s) of approval unconditional with respect to (i) to (iv) above?	VVM	46	Letter of Approval from the Host Party DNA has not been submitted by the PP.	(CL 1)	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			
f. Is there doubt with respect to the authenticity of the letter of approval?	VVM	48	Letter of Approval from the Host Party DNA has not been submitted by the PP.	(CL 1)	OK
g. If yes, was verified with the DNA that the letter of approval is authentic?	VVM	48			
<b>2. Participation</b>			<i>PP1 (Vish Wind PP2 Infrastructure LLP)</i>		
a. Have all project participants been listed in a consistent manner in the project documentation?	VVM	51	Yes, There are is only one project participant for this project activity viz.	OK	OK


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## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl I
			"Vish Wind Infrastructure LLP" involved in the project activity and the details are listed in a consistent manner in section A.3 and Annex 1 of the PDD.		
b. Has the participation of the project participants in the project activity been approved by a Party to the Kyoto Protocol?	VVM	51	The letter of approval from Host Party DNA to be submitted by the PP.	(CL 1)	OK
c. Are the project participants listed in tabular form in section A.3 of the PDD?	VVM	52	Yes it has been listed in tabular format in section A.3 of the PDD.	OK	OK
d. Is the information in section A.3 consistent with the contact details provided in annex 1 of the PDD?	VVM	52	Information in section A.3 is consistent with contact details provided in annex 1 of the PDD.	OK	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	Please refer CL 1 above.		
f. Are any entities other than those approved as project participants included in these	VVM	52	Not Applicable		



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl I
sections of the PDD?					
g. Has the approval of participation issued from the relevant DNA?	VVM	53	Letter of Approval from the Host Party DNA to be submitted by the PP.	(CL1)	OK
h. Is there doubt with respect to (g) above? L	VVM	53	Please refer CL 1 above.		
i. If yes, was verified with the DNA that the approval of participation is valid for the proposed project participant?	VVM	53			
<b>3. Project desing 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	The PDD has been prepared in accordance with the latest template (version 3, CDM-SSC-PDD). Please refer sections below for comments on information provided in various sections of PDD.	OK	OK
b. Is the PDD in accordance with the applicable CDM requirements for completing the PDD?	VVM	56	Please refer sections below for comments on information provided in various sections of PDD.	OK	OK
c. In CDM-SSC-PDD section A.1 are following provided?	EB 34	Ann 09			
i. Title of project	EB 34	Ann 09	Yes the title of the project activity is provided as "Clean Energy generation from wind energy in the state of Andhra Pradesh".	OK	OK
ii. Current version number and date of document	EB 34	Ann 09	The details are provided, which are as follows: Version 01 Date: 15/06/2011	OK	OK


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## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl I
d. In CDM-SSC-PDD section A.2 are following provided (max. one page)?	EB 34	Ann 09			
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.	EB 34	Ann 09	Purpose of the project activity has been provided including the pre-project scenario, present scenario and the baseline.	OK	OK
ii. Explanation how the GHG emission reductions are effected.	EB 34	Ann 09	Yes provided.	OK	OK
iii. The PP's view on the contribution of project activity to sustainable development.	EB 34	Ann 09	Yes the PP view on the contribution of project activity to sustainable development has been provided.	OK	OK
iv. Are there any changes/modifications compared to the webhosted PDD?	EB 34	Ann 09	To be assessed upon the submission of the revised PDD.	OK	OK
e. In CDM-SSC-PDD section A.3 are following provided in the tabular format?	EB 34	Ann 09			
i. List of project participants and Party(ies)	EB 34	Ann 09	Yes provided.	OK	OK
ii. Identification of host party	EB 34	Ann 09	Yes provided	OK	OK
iii. Indication whether the Party wishes to be considered as project participant	EB 34	Ann 09	Yes provided. The Party does not wish to be considered as project participant.	OK	OK
f. In CDM-SSC-PDD section A.4.1 are following provided?	EB 34	Ann 09			
i. Technical description, location, host party(ies) and address as required?	EB 34	Ann 09	Technical description, location details have been provided.	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. Detailed physical location with unique identification of the project activity (eg. Longitude/latitude) – not to exceed one page	EB 34	Ann 09	Physical location and Longitude & latitude details of individual WEG have been provided. Proof for the same to be provided by the PP. The information has exceeded the one page limit, which is not in accordance with guidance for completing SSC PDD.	CL 2	OK
g. In CDM-SSC-PDD section A.4.2 are following provided	EB 34	Ann 09			
i. the list of categories of project activities as per the latest categorization of Appendix B to the simplified modalities and procedures for small-scale CDM project activities, hereafter referred to as Appendix B. (refer <a href="http://cdm.unfccc.int/methodologies/SSCmethodologies">http://cdm.unfccc.int/methodologies/SSCmethodologies</a> )	EB 34	Ann 09	The information in the section A.4.2 of the web hosted PDD has been provided but the project category mentioned is not in line the Indicative Simplified Modalities & Procedures for SSC projects. PP to clarify the same.  It has been stated that waste generated as a result of O & M activity disposed through third party as per disposal procedure of EIL. Please clarify the disposal procedure.	CL 3	OK
ii. A description of how environmentally safe and sound technology and know how is being applied by the project activity inter alia technology transfer to the Host Party(ies) for application in the project activity	EB 34	Ann 09	A description on technology has been presented in PDD, however information of how environmentally safe & sound technology and information with respect to Transfer of Technology have been presented clearly in section A.4.2 of the PDD.	OK	OK
h. In CDM-SSC-PDD section A.4.3 is the	EB	Ann	The estimation of emission reductions has	CL 4	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl I
estimation of emission reductions provided, as requested, in a tabular format?	34	09	been provided in a tabular format in section A.4.3 of the web hosted PDD, however the unit mentioned in last row of the table is not as per the Guidelines for Completing the SSC PDD.		
i. In CDM-SSC-PDD section A.4.4 is information regarding Public funding provided?	EB 34	Ann 09	The information that no public funding is available to the project activity has been provided in section A.4.4. PP to substantiate the means of finance with credible objective evidence.	CL 5	OK
j. In CDM-SSC-PDD section A.4.5 are following provided?	EB 34	Ann 09			
i. Confirmation that the small-scale project activity is not a debundled component of a large scale project activity.	EB 34	Ann 09	The PP is developing a large scale project in the same region. PP to clarify how this project activity cannot be considered as debundled component of a large scale project activity in accordance with Appendix C. The distance between these projects need to be provided by the PP.	CL 6	OK
ii. Indication if there is a registered small-scale project activity under the CDM or an application to register another small-scale project activity under the CDM	EB 34	Ann 09			
a. With the same project participants	EB 34	Ann 09	The PP in the A.4.5 section of the PDD confirms that there is no registered small scale CDM project activity.	OK	OK




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## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl I
b. Registered within the period of 2 years	EB 34	Ann 09	The PP in the A.4.5 section of the PDD confirms that there is no registered small scale CDM project activity within the period of 2 years	OK	OK
c. Whose project boundary is within 1 km of the project boundary of the proposed small-scale activity under the CDM at the closest point.	EB 34	Ann 09	The distance between these projects also need to be provided by the PP.	(CL 6)	OK
iii. Are there any changes/modifications compared to the webhosted PDD?	EB 34	Ann 09	The same would be assessed upon the submission of the revised PDD.	OK	OK
k. In CDM-SSC-PDD section B.1 is the approved baseline and monitoring methodology and version no provided?	EB 34	Ann 09	Approved baseline and monitoring methodology and version no. have been provided in the PDD viz. AMS I.D. version 17.	OK	OK
l. In CDM-SSC-PDD section B.2 are the following provided?	EB 34	Ann 09			
i. Justification of the choice of project activity and category?	EB 34	Ann 09	Justification of the choice of project activity and category has been provided under section B.2 of the PDD.	OK	OK
ii. Demonstration that the project activity qualifies as a small-scale project activity and that it will remain under the limits of small-scale project activity types during every year of the crediting period as per the following: For Type I : the capacity of the proposed project activity will not exceed 15 MW (or an appropriate	EB 34	Ann 09	The installed capacity of the project activity is 6.40 MW and it is confirmed that project would remain under the small scale limits of 15 MW for the entire crediting period.	OK	OK


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## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl I
equivalent); For Type II: the annual energy savings on account of efficiency improvements will not exceed 60 GWh (or an appropriate equivalent) in any year of the crediting period; For Type III: the estimated emission reductions of the project activity will not exceed 60 ktCO <sub>2</sub> e in any year of the crediting period.					
m. In CDM-SSC-PDD section B.3 is the project boundary of the project activity, based on the guidance of the applicable project category, provided?	EB 34	Ann 09	The project boundary depicted in the PDD is inline with the Applied Approved Methodology and "Tool to Calculate the Emission Factor for an Electricity System".	OK	OK
n. In CDM-SSC-PDD Section B.4 are following provided?	EB 34	Ann 09			
i. The baseline for the proposed project activity with reference to the chosen project category.	EB 34	Ann 09	Grid has been chosen as the baseline for the proposed project activity, which is as per the applied approved methodology – AMS ID, Version 17.	OK	OK
ii. Justification of key assumptions and rationales	EB 34	Ann 09	Justification of key assumptions has been provided in the PDD.	OK	OK
iii. Transparent illustration of all data used to determine the baseline emissions (variables, parameters, data sources etc)	EB 34	Ann 09	The B.4 section of the web hosted PDD states that the project activity is connected to the TNEB Grid whereas the project activity is located in Andhra Pradesh. PP to clarify the same.	CL 7	OK
iv. Are there any changes/modifications	EB	Ann	Upon the submission of the revised the same	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl I
compared to the webhosted PDD?	34	09	would be assessed.		
o. In CDM-SSC-PDD section B.5 are following provided?	EB 34	Ann 09			
i. Explanation that the proposed project activity is additional as per options provided under Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities.	EB 34	Ann 09	Project participant has demonstrated additionality as per <i>Attachment A to Appendix B</i> . Investment barrier has been selected by the project participant to demonstrate additionality.	OK	OK
ii. National policies and circumstances relevant to the baseline of the proposed project activity	EB 34	Ann 09	National Policies and Circumstances relevant to the baseline of the project activity have not been provided in the B.5 section of the web hosted PDD in accordance with Annex 3 of EB-22.	CL 8	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. (this is part of the large scale project guidelines. It is better to be retained)	EB 34	Ann 09	The board resolution passed during the board meeting held on 09/07/2010 has been submitted by the PP.	OK	OK
p. In CDM-SSC-PDD section B.6.1 are following provided?	EB 34	Ann 09			
(i) Explanation on how the procedures, in the approved project category to calculate project emissions, baseline	EB 34	Ann 09	Procedures to calculate project emissions, baseline emissions, leakage and emission reductions have been provided under section	CAR 1	OK


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## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl I
emissions, leakage emissions and emission reductions are applied to the proposed project activity.			B.6.1 of the PDD. However the Combined Margin Emission Factor mentioned in B.6.1 section of the PDD is not consistent with the B.6.2 & Annex 3 of the PDD.		
(ii) Clearly stating of which equations will be used in calculating emission reductions.	EB 34	Ann 09	Equations used in calculating emission reductions have been provided in the PDD.	OK	OK
(iii) Explanation and justification of all relevant methodological choices, including: where the category provides different options to choose from; where the category provides for different default values.	EB 34	Ann 09	Explanation and Justification of all relevant methodological choices are provided in the PDD.	OK	OK
q. In CDM-SSC-PDD section B.6.2 are following provided?	EB 34	Ann 09			
i. A compilation of information on the data and parameters that are not monitored but determined upfront so as to be available for validation.	EB 34	Ann 09	Operating Margin (OM) emission factor, Build Margin (BM) emission factor and Combined Margin (CM) emission factor which will be fixed ex-ante for the entire crediting period of 10 years and which is available for validation is provided in the section B.6.2 of the webhosted PDD.	OK	OK
ii. The actual value applied.	EB 34	Ann 09	The 3 years vintage period for deducing Operating Margin (O&M) mentioned in the B.6.2 section of the PDD is not consistent with years mentioned in the Annex 3 of the PDD.	CAR 2	OK
i. Explanation and justification for the choice	EB	Ann	Yes, explanation and justification for the	OK	OK


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## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl I
of the source of data.	34	09	choice of the source of data is provided in the section B.6.2 of the webhosted PDD.		
ii. Clear and transparent references or additional documentation in Annex 3.	EB 34	Ann 09	Yes, transparent reference is provided in Annex 3 of the webhosted PDD.	OK	OK
iii. 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 34	Ann 09	Not Applicable		
r. In CDM-SSC-PDD section B.6.3 are following provided?	EB 34	Ann 09			
i. A transparent ex ante 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 34	Ann 09	The source of data for all the input parameters taken for the emission reduction calculations are provided in section B.6.3 of the webhosted PDD. The project participant has provided transparent emission reduction calculations in section B.6.3 of the web hosted PDD.	OK	OK
ii. Documentation how each equation is applied, in a manner that enables the reader to reproduce the calculation	EB 34	Ann 09	Calculation is done based on the equation as per approved methodology AMS I.D, version 17 and the manner in which it is represented enables the reader to reproduce the calculation.	OK	OK


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## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iii. Additional background information and or data in Annex 3, including relevant electronic files (i.e. spreadsheets)	EB 34	Ann 09	Additional background information is provided in Annex 3 of the PDD. Emission Reduction calculation sheet to provided by the PP.	(CL 9)	OK
iv. Emission reduction calculations for each component are provided separately if more than one component activity is applied	EB 34	Ann 09	The project activity involves only one component viz., wind energy based generation from the installed Wind Energy Generators.	OK	OK
s. In CDM-SSC-PDD section B.6.4 are the results of the ex ante estimation of emission reductions for all years of the crediting period, in a tabular format, provided?	EB 34	Ann 09	Yes estimation of emission reductions for all the years of the crediting period are provided in required tabular format.	OK	OK
t. In CDM-SSC-PDD section B.7.1 are following provided?	EB 34	Ann 09			
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 34	Ann 09	Information on how the data and parameters that need to be monitored are provided in the PDD, however from the site visit and the office discussions it is noted that the project activity is connected to a common substation where the electricity generated from the WEGs of the project activity and other WEGs which are not the part of this project activity are also supplying electricity. PP is requested to demonstrate how the Net Electricity is being determined.	CAR 3	OK


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ii. For each below parameter the following information, using the table provided:	EB 34	Ann 09			
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 34	Ann 09	The source of data for EG <sub>BL, y</sub> is not stated in the webhosted PDD.	CAR 3	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 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	EB 34	Ann 09	Please refer CAR 3 above.		





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relevant: any further comment. Provide any relevant further background documentation in Annex 4.					
iii. A detailed description of the monitoring plan.	EB 34	Ann 09			
a. 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 34	Ann 09	The operation and management structure has been provided in the B.7.2 section of the PDD.	OK	OK
b. The responsibilities for and institutional arrangements for data collection and archiving	EB 34	Ann 09	The roles and responsibilities have been provided.	OK	OK
c. Does the monitoring plan reflect good monitoring practice appropriate to the type of project activity	EB 34	Ann 09	The PDD is silent on the Quality Assurance and Quality Control Procedures.	CAR 4	OK
d. Relevant further background information in Annex 4	EB 34	Ann 09	There is no further background information provided in the Annex 4 of the PDD.	OK	OK
u. In CDM-SSC-PDD section B.8 are following provided	EB 34	Ann 09			
i. Date of completion of the application of the methodology to the project activity study in DD/MM/YYYY.	EB 34	Ann 09	Yes the date has been provided in the DD/MM/YYYY format. The date is mentioned as 10/11/2010	OK	OK
ii. Contact information of the person(s)/entity(ies) responsible for the	EB 34	Ann 09	Yes the same has been provided in the Annex 1 of the PDD.	OK	OK


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application of the baseline and monitoring methodology to the project activity					
iii. Indicated if the person/entity is also a project participant listed in Annex 1	EB 34	Ann 09	Yes, it is indicated that entity determining the baseline is also the Project Participant listed in Annex 1 of the PDD.	OK	OK
v. In CDM-SSC-PDD section C.1.1 are following provided?	EB 34	Ann 09			
i. 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 (EB33, Para 76/CDM Glossary of terms/EB41, Para 67)	EB 34	Ann 09	The starting date of a CDM project activity is mentioned as date on which the first purchase order was placed for the Wind Energy Generator. That date is mentioned as 10/07/2010.	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 34	Ann 09	The starting date of a CDM project activity is mentioned as date on which purchase order was placed for the Wind Energy Generator	OK	OK
iii. If this starting date is earlier than the date of publication of the CDM-SSC-PDD for global stakeholder consultation by a DOE, does Section B.5 above contain a description of how the benefits of the CDM were seriously considered prior to the starting date (EB41, Para 68).?	EB 34	Ann 09	The starting date of the project activity is prior to the date of publication of the CDM-SSC-PDD for global stakeholder consultation. The serious consideration of CDM has been mentioned in B.5 of the PDD.	OK	OK
w. In CDM-SSC-PDD section C.1.2 is the expected operational lifetime of the project	EB 34	Ann 09	Yes, the operational lifetime of the project activity is provided in years and months. PP to	CL 9	OK


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activity in years and months provided?			substantiate the operational lifetime of the WEGs.		
x. In CDM-SSC-PDD section C.2 is it stated whether the project activity will use a renewable or a fixed crediting period and completed C.2.1 or C.2.2 accordingly?	EB 34	Ann 09	The PP has chosen fixed crediting period, the same is stated in the C.2 section of the PDD.	OK	OK
y. In CDM-SSC-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 34	Ann 09	Not Applicable, since the PP has opted for Fixed Crediting period.		
z. In CDM-SSC-PDD section C.2.1.1 are the dates in the following format: (DD/MM/YYYY) provided?	EB 34	Ann 09	Not Applicable		
aa. In CDM-SSC-PDD section C.2.1.2 is the length of the first crediting period in years and months?	EB 34	Ann 09	Not Applicable		
bb. In CDM-SSC-PDD section C.2.2 is it indicated fixed crediting period at most ten (10) years	EB 34	Ann 09	The information on the fixed crediting period in section C.2.2 of the web hosted PDD is not provided as required by the guidance for completing the SSC PDD.	CL 10	OK


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cc. In CDM-SSC-PDD section C.2.2.1 are the dates in the format (DD/MM/YYYY) provided?	EB 34	Ann 09	Yes, in the C.2.2.1 section of the web hosted PDD, date is provided in DD/MM/YYYY format. The date of registration is mentioned as 01/09/2011, the date has already elapsed, PP to clarify the same.	CL 11	OK
dd. In CDM-SSC-PDD section C.2.2.2 is the length of the crediting period in years and months provided?	EB 34	Ann 09	Length of the crediting period is stated as 10 years and 0 months.	OK	OK
ee. In CDM-SSC-PDD section D.1 is the documentation on the analysis of the environmental impacts, if required by Host Party, provided?	EB 34	Ann 09	Host party (India) does not require documentation on the analysis of the environmental impacts by the project activity as proposed project does not fall under the list of activities requiring EIA.	OK	OK
ff. In CDM-SSC-PDD section E.1 are following provided?	EB 34	Ann 09			
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 34	Ann 09	The PP has performed local stakeholder meeting on 07/05/2011. Invitations for the meeting were sent to the stakeholders on 28/04/11. The invitations sent to the stakeholders have not been submitted by the PP.	(CL12)	OK
ii. The project activity is described in a manner, which allows the local	EB 34	Ann 09	The PP to clarify how the description of the project activity was provided to the local	CL 13	OK



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stakeholders to understand the project activity, taking into account confidentiality provisions of the CDM modalities and procedures			stakeholders, which enabled the stakeholders to understand the objective and purpose of the project activity. The same is not clearly described in the web hosted PDD.		
iii. The local stakeholder process has been completed before submitting the proposed project activity to the DOE for validation	EB 34	Ann 09	Yes the local stakeholder process had been completed prior to submission of PDD to the DOE for validation.	OK	OK
gg. In CDM-SSC-PDD section E.2 are following provided?	EB 34	Ann 09			
i. Local stakeholders that have made comments identified.	EB 34	Ann 09	The local stakeholder who had put forth their comments are not been identified in E.2 section of the PDD.	CAR 5	OK
ii. A summary of these comments	EB 34	Ann 09	Summary of comments have been provided but the names of the stakeholders who put forth these comments are not presented in the PDD.	(CAR 5)	OK
hh. In CDM-SSC-PDD section E.3 is and explanation of how due account have been taken of comments received from local stakeholders provided?	EB 34	Ann 09	From description provided in the web hosted PDD, it is not clear how the comments were received from the local stakeholder and how it was recorded.	CL 14	OK
ii. In CDM-SSC-PDD Annex 1 are following provided?	EB 34	Ann 09			
i. Contact information of project participants	EB 34	Ann 09	Yes provided	OK	OK
ii. For each organisation listed in section A.3	EB	Ann	Yes the mandatory fields have been filled	OK	OK


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the following mandatory fields: Organization, Name of contact person, Street, City, Postfix/ZIP, Country, Telephone and Fax or e-mail	34	09	appropriately.		
jj. In CDM-SSC-PDD Annex 2 is information from Parties included in Annex I 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 34	Ann 09	The project activity has not availed any public funding for the project activity from any Annex I Parties.	OK	OK
kk. In CDM-SSC-PDD Annex 3 is the background information used in the application of the baseline methodology provided?	EB 34	Ann 09	Yes the information has been provided. But the 3 years vintage period for deducing Operating Margin (O&M) mentioned in the Annex 3 section of the PDD is not consistent with years mentioned in the section B.6.2 of the PDD.	CAR 2	OK
ll. In CDM-SSC-PDD Annex 4 is the background information used in the application of the monitoring methodology provided?	EB 34	Ann 09	No further background information is provided in the Annex 4 of the PDD.	OK	OK
<b>4. Project description</b>					
a. Does the PDD contain a clear description of	VVM	58	The description of the project activity is	OK	OK


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the project activity that provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation?			provided in a manner where the reader can understand the precise nature and technical aspects of its implementation.		
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, the PDD covers all the relevant elements.	OK	OK
ii. accurate?	VVM	59	There are few points which need to be addressed, the same has been raised as CARs and CLs in the previous and succeeding sections of this validation report.	OK	OK
iii. providing the reader with a clear understanding of the nature of the proposed CDM project activity?	VVM	59	The description of the project activity is provided in a manner where the reader can understand the nature CDM project activity.	OK	OK
iv. Are there any changes/modifications compared to the webhosted PDD?	VVM	59	The same would be assessed upon the submission of the revised PDD.	OK	OK
c. Is the proposed CDM project activity in existing facilities or utilizing existing equipments?	VVM	60	The project activity is a Greenfield project.	OK	OK
d. Is the CDM project activity one of the following types:	VVM	60			
i. Large scale?	VVM	60	Not Applicable, project activity is small scale.		
ii. Non-bundled small scale projects with emission reductions exceeding 15,000 tonnes per year?	VVM	60	Not Applicable. The project is not a de-bundled component of a Large scale project activity. The project activity is a small-scale		




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			CDM project activity with a total capacity of 6.40 MW and estimated total emission reductions of 12, 238 tonnes per year. The capacity is verified from the copy of Commissioning certificate and proposal from equipment supplier which were submitted to the validation team.		
iii. Bundled small scale projects, each with emission reductions not exceeding 15,000 tonnes?	VVM	60	The project is not a bundled small-scale CDM project activity.	OK	OK
e. If yes to (c) and (d) above, was a physical site inspection conducted to confirm that the description in the PDD reflects the proposed CDM project activity, unless other means are specified in the methodology?	VVM	60	Not Applicable		
f. If yes to (d.iii) above, was the number of physical site visits based on sampling?	VVM	60	No, all the 8 WEGs were checked during the site visit.	OK	OK
g. If yes is the sampling size appropriately justified through statistical analysis?	VVM	60	Not Applicable.		
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	Yes the validation team performed the physical site inspection on 27/08/2011.	OK	OK
i. For all other proposed CDM project activities not referred to in paragraphs 59 – 61, was a	VVM	62	Not Applicable		


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physical site inspection conducted?					
j. If no, was it appropriately justified?	VVM	62	Not Applicable		
k. Does the proposed CDM project activity involve the alteration of an existing installation or process?	VVM	63	Not Applicable, the project activity involves installation of new WEGs.	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		
<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 Board?	VVM	65	The applied approved methodology prescribes grid as the baseline. The same has been applied by the PP in the PDD.	OK	OK
b. Is the selected methodology applicable to the project activity?	VVM	66	Yes, the selected methodology AMS-ID, Version 17, is applicable to the project activity.	OK	OK
c. Had the PP correctly applied the selected methodology?	VVM	66	The project activity involves the installation of new wind energy generator site where there was no prior renewable energy projects. The electricity generated from this greenfield project is supplied to the regional grid. The methodology applied by the PP is applicbale to the project activity and the same has been		


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			correctly applied by the PP.		
d. Had the selected methodology been correctly applied with respect to project boundary?	VVM	67	Refer to (5.c) below		
e. Had the selected methodology been correctly applied with respect to baseline identification?	VVM	67	Refer to (5.d) below		
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		
g. Had the selected methodology been correctly applied with respect to additionality?	VVM	67			
1. Has the general guidance to the small scale CDM methodologies, information on additionality (attachment A to appendix B) been applied correctly?	AMS	I D	Project participant has used "Attachment A to Appendix B" of simplified modalities and procedures for small scale CDM project activities, to demonstrate additionality of the project, which is as per AMS I.D, Version 17 for demonstrating additionality.	OK	OK
h. Had the selected methodology been correctly applied with respect to monitoring methodology?	VVM	67	The applied selected methodology		
<b><i>b. Applicability of the selected methodology to the project activity</i></b>					


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a. Is the selected baseline and monitoring methodology, previously approved by the CDM Executive Board, applicable to the project activity including that the used version is valid?	VVM	68	The baseline and monitoring methodology selected by the project participant is AMS I.D./Version 17. The methodology was previously approved by the CDM executive board and the version 17 was latest available version of AMS I.D. at the time of PDD webhosting.	OK	OK
b. Has the DOE applied specific guidance provided by the CDM Executive Board in respect to the applicable approved methodology?	VVM	69	The applicability conditions of the methodology and justification of the project category provided by the project participant have been assessed by the validation team. The methodology is correctly quoted and the actual text of the applicable version of the methodology has been used in the PDD.	OK	OK
c. Is the methodology correctly quoted?	VVM	70	The applicability conditions of the methodology and justification of the project category provided by the project participant have been assessed by the validation team. The methodology is correctly quoted and the actual text of the applicable version of the methodology has been used in the PDD.	OK	OK
d. Are the applicability conditions of the methodology met?	VVM	71			
a. Does the project activity comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind,	AMS	1D	The project activity comprises electricity generation utilizing wind energy and supplying the generated electricity to regional grid.	OK	OK


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geothermal and renewable biomass that supply electricity to a national or a regional grid? 2. Note: Project activities that displace electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit shall apply AMS-I.F.			Hence, this applicability clause is in compliance with the methodology AMS I.D. Version. 17.		
b. Has the project participant provided justification in line with the applicability of methodology with respect to Table 2 of approved methodology ?	AMS	ID	The project participant has not included applicability condition 2 of the applied baseline and monitoring methodology AMS I D.	CL 15	OK
c. Does the project activity i. install a new power plant at site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant); ii. involve a capacity addition iii. involve a retrofit of (an) existing plant(s) or iv. involve a replacement of (an) existing plant(s)	AMS	ID	The project activity involves the installation of a new power plant at a site where there was no renewable energy power plant.	OK	OK
d. For Hydro power plants with reservoirs, does it satisfy at least one of the following conditions	AMS	ID	Not applicable. The project activity is a wind energy based power plant.	OK	OK


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<p>3. (a) the project activity is implemented in an existing reservoir with no change in the volume of reservoir</p> <p>4. (b) the project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, is greater than 4 W/m<sup>2</sup></p> <p>5. (c) the project activity results in new reservoirs and the power density of the power plant is greater than 4 W/m<sup>2</sup>.</p>					
<p>e. Is the following guideline followed:</p> <p>6. (a) If the new unit has both renewable and non-renewable components (eg., a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component.</p> <p>7. (b) If the new unit co-fires fossil fuels, the capacity of the entire unit shall not exceed the limit of 15 MW.</p>	AMS	I D	Not Applicable.	OK	OK
<p>f. Is the following guideline followed:</p> <p>8. Combined heat and power (co-generation) systems are not eligible under this category</p>	AMS	I D	Not Applicable.	OK	OK
<p>g. Is the following guideline followed:</p>	AMS	I D	Not applicable. This is a Greenfield project.	OK	OK


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9. In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing					
h. Is the following guideline followed: 10. In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement unit shall not exceed the limit of 15 MW.	AMS	ID	Not applicable. This is a Greenfield project which involves the installation of new wind energy generators.	OK	OK
e. Is the project activity expected to result in emissions other than those allowed by the methodology?	VVM	71	Emissions other than those allowed by the methodology are not expected in the project activity.	OK	OK
f. Is the choice of the methodology justified?	VVM	71	The choice of the methodology has been appropriately justified by the project participant.	OK	OK
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		
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	VVM	71	The PP has justified all the applicability conditions of the applied approved methodology AMS ID.	OK	OK




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methodology?					
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	The rated capacity of the project activity was crosschecked during site visit and the document review. It was also noted that project activity is grid connected (connected to southern grid) and project participant is supplying electricity to grid.	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 choices)	VVM	71	The rated capacity of the project activity was checked during the validation site visit and the same was crosschecked from the commissioning certificates and purchase orders. It was also noted that project activity is grid connected (connected to southern grid) and project participant is supplying electricity to grid.	OK	OK
k. Can a determination regarding the applicability of the selected methodology to the proposed CDM project activity be made?	VVM	72	The methodology AMS I.D./Version 17 is applicable to the project as the project activity meets all applicability conditions of the methodology.	OK	OK
i. If no, clarification of the methodology was requested, in accordance with the guidance provided by the CDM Executive Board?	VVM	72	Not applicable as approved methodology AMS I.D./Version 17 is applicable to the project activity.	OK	OK
l. If answer to (5.b.c) 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 as approved methodology AMS I.D./Version 17 is applicable to the project activity.	OK	OK



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m. If yes to (5.b.k) and (5.b.l) above, a request for registration was submitted before the CDM Executive Board has approved the proposed deviation or revision?	VVM	74	Not applicable as approved methodology AMS I.D./Version 17 is applicable to the project activity.	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			
i. Does the physical, geographical site of the renewable generation?	AMS	I D	The physical delineation of the project activity in the B.3 section of the Webhosted PDD is in line with the applied Approved Methodology – AMS - ID.	OK	OK
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	The delineation of the project boundary has been provided in the PDD includes the location process and equipment.	OK	OK
c. Does the delineation in the PDD of the project boundary meet the requirements of the selected baseline?	VVM	79	Yes, the delineation of the project boundary meets the requirements of the selected baseline.	OK	OK
d. Have changes been made to the project	VVM	79	Upon submission of the revised PDD, the	OK	OK



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boundary in comparison to the webhosted PDD. If yes please comment on the reason for the changes.			same would be assessed.		
e. Have all sources and GHGs required by the methodology been included within the project boundary?	VVM	79	There are no GHGs and sources are specified by Methodology AMS I.D. version 17.	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	There are no GHGs and sources are specified by Methodology AMS I.D. version 17.	OK	OK
g. If yes, have the project participants justified that choice?	VVM	79	There are no GHGs and sources are specified by Methodology AMS I.D. version 17.	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.		
<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 anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed CDM project activity?	VVM	81	Methodology AMS I.D. version 17, prescribes Grid as the baseline and the PDD has identified the baseline in line with the methodology.	OK	OK
b. Has any procedure contained in the methodology to identify the most reasonable	VVM	82	Methodology AMS ID defines the baseline to be grid and grid has been chosen as the		


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baseline scenario, been correctly applied?			baseline for the Project Activity.		
i. Is the following guideline followed: Is the project activity new grid-connected renewable power plant/unit and hence the baseline scenario is the electricity delivered to the grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources.	AMS	I.D	Yes, the project activity is a Greenfield Project and supplies electricity to the Southern regional grid of India, the baseline scenario is defined as the electricity delivered to the grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources which is in line with applied approved methodology.	OK	OK
ii. Is the baseline emissions calculated as the product of electrical energy baseline EGBL, y expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission $BE_y = EGBL_y * EF_{CO_2, grid, y}$	AMS	I.D	Yes, the baseline emission is calculated as the product of electrical energy baseline EGBL, y expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor $EF_{CO_2, grid, y}$ .	OK	OK
iii. Is the Emission Factor calculated in a transparent and conservative manner as follows: (a) A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the .Tool to calculate the Emission Factor for an electricity system.. OR (b) The weighted average emissions (in t	AMS	I.D	The combined margin emission factor $EF_{CO_2, grid, y}$ is calculated in a transparent and conservative manner by taking into account both operating margin (OM) and build margin (BM) by following seven steps prescribed in tool to calculate emission factor for an electricity system, version 2.2.0.	OK	OK



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CO2/MWh) of the current generation mix. The data of the year in which project generation occurs must be used. Calculations shall be based on data from an official source (where available) and made publicly available.					
iv. Is the following guideline followed: - In the case of landfill gas, waste gas, wastewater treatment and agro-industries projects, recovered methane emissions are eligible under a relevant Type III category. - If the recovered methane is used for electricity generation for supply to a grid then the baseline shall be calculated in accordance with paragraphs below else use other applicable type I methodologies such as AMS-IA or AMS-I.F. - If the recovered methane is used for heat generation or cogeneration it is eligible under category I.C.	AMS	I.D	Not Applicable		
v. Is the following guideline followed for project activities that involve retrofits or replacements of an existing facility for renewable energy generation: - The baseline scenario is the continuing	AMS	I.D	Not Applicable. The project activity is a Greenfield project.		


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operation of the existing plant. - The methodology uses historical electricity generation data to determine the electricity generation of the existing plant in the baseline scenario, assuming that the historical situation observed prior to the implementation of the project activity would continue. In the absence of the CDM project activity, the existing facility would continue to provide electricity to the grid BL retrofit y EG, at historical average levels EGhistorical, y until the time at which the electrical generation facility would be likely to be replaced or retrofitted in the absence of the CDM project activity (DATE <sub>BaselineRetrofit</sub> ). From that point of time onwards, the baseline scenario is assumed to correspond to the project activity, and baseline electricity production is assumed to equal the project.s net electricity production and no emission reductions are assumed to occur.					
vi. Is the following guideline followed for Retrofit/capacity addition of hydro, solar, wind, geothermal, wave and tidal plants: 11. - Use of standard deviation for calculating	AMS	I.D	Not Applicable.		


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<p>baseline electricity generation.</p> <p>12. - A minimum of 5 years (60 months) (excluding abnormal years) of historical generation data is required in the case of hydro facilities and for other facilities a minimum of 3 years (36 months) data is required.</p> <p>13. - In the case that 5 years of historical data are not available - e.g., due to recent retrofits or exceptional circumstances - a new methodology or methodology revision shall be proposed.</p> <p>14. - In the case of wind, solar, wave or tidal power plants, the electricity produced by the added power plant(s) or unit(s) could be directly metered and used to determine EG BL,y. provided that the electricity produced by the added power plant(s) or unit(s) addition is separately metered.</p> <p>15. - Project activities for capacity addition in hydro or geothermal shall use equation 3 replacing subscript .retrofit. with .capacity addition.</p>					
vii. Is the following guideline followed for Retrofit renewable energy units other than hydro, solar, wind, geothermal, wave and	AMS	I.D	The project activity is a Greenfield project and does not involve any retrofitting.	OK	OK





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<p>tidal plants: Baseline emissions are calculated as:</p> <p><b>16.</b> <math>BE_{\text{retrofit}, \text{CO}_2, y} = (EG_{\text{PJ}, \text{retrofit}, y} - EG_{\text{BL}, \text{retrofit}, y}) * EF_{\text{CO}_2}</math></p> <p>EG historical - A minimum of 3 years of data is required. In the case that 3 years of historical data are not available 9- e.g., due to recent retrofits or exceptional circumstances - a new methodology or methodology revision shall be proposed</p>					
<p>viii. Is the requirements concerning demonstration of the remaining lifetime of the replaced equipment met as described in the general guidelines to SSC methodologies?</p> <p><b>17.</b> Note: If the remaining lifetime of the affected systems increases due to the project activity, the crediting period shall be limited to the estimated remaining lifetime, i.e., the time when the affected systems would have been replaced in the absence of the project activity.</p>	AMS	I.D	Not Applicable, as the project activity involves the installation new wind energy generators at site.	OK	OK
<p>ix. Is the following guideline followed for Capacity addition with renewable energy units other than hydro, solar, wind,</p>	AMS	I.D	The project activity is a Greenfield Project and there is no capacity addition involved.	OK	OK



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<p>geothermal, wave and tidal plants:</p> <ul style="list-style-type: none"> <li>- The baseline scenario is the existing facility that would continue to supply electricity to the grid at historical levels, until the time at which the generation facility would likely be replaced or retrofitted (DATE<sub>BaselineRetrofit</sub>).</li> <li>- If the existing units shut down, are derated, or otherwise become limited in production, the project activity should not get credit for generating electricity from the same renewable resources that would have otherwise been used by the existing units (or their replacements).</li> </ul>					
x. Does project activity involve co-firing ? If yes, the quantities and types of biomass and biomass to fossil fuel ratio to be used during crediting period is explained and documented transparently and presented in PDD ? Are ex ante estimation of these values provided in the PDD ?	AMS	I D	Not Applicable. The project activity is a wind energy based power plant.	OK	OK
c. Does the selected methodology require use of tools (such as the “Tool for the demonstration and assessment of additionality” and the “Combined tool to identify the baseline scenario and	VVM	81	Methodology AMS I.D. version 17, prescribes the baseline and the PDD has identified the baseline in line with the methodology. Hence this condition is not applicable.	OK	OK



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demonstrate additionality”) to establish the baseline scenario?					
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		
e. Does the methodology require several alternative scenarios to be considered in the identification of the most reasonable baseline scenario?	VVM	83	Methodology AMS I.D. version 17, prescribes the baseline and the PDD has identified the baseline in line with the methodology. Hence this condition is not applicable.	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	Methodology AMS I.D. version 17, prescribes the baseline and the PDD has identified the baseline in line with the methodology. Hence this condition is not applicable.	OK	OK
g. Has any reasonable alternative scenario been excluded?	VVM	83	Methodology AMS I.D. version 17, prescribes the baseline and the PDD has identified the baseline in line with the methodology. Hence this condition is not applicable.	OK	OK
h. Is the baseline scenario identified reasonably supported by:	VVM	84			
i. Assumptions?	VVM	84	Yes, the identified baseline scenario is supported by assumptions.	OK	OK
ii. Calculations?	VVM	84	Relevant calculations are made in the webhosted PDD.	OK	OK
iii. Rationales?	VVM	84	Yes, the identified baseline scenario is	OK	OK


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			supported by rationales.		
i. Are the documents and sources referred to in the PDD correctly quoted and interpreted?	VVM	84	The documents and sources are correctly quoted.	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, the information provided in the PDD has been taken from credible sources.	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	The methodology AMS ID which is appropriately chosen for this project activity defines the baseline to be grid and grid has been chosen as the baseline for the Project Activity.	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	The relevant policies and circumstances have been identified and correctly considered in the PDD.	OK	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 methodology AMS ID which is appropriately chosen for this project activity defines the baseline to be grid and grid has been chosen as the baseline for the Project Activity. The project activity is supply, erection, commissioning and operation of 6 numbers wind energy generators each having a capacity of 6.4 MW which will generate and supply electricity to the Southern regional grid that otherwise would have been generated by	OK	OK


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			the operation of grid-connected power plants or by the addition of new generation sources.		
<b><i>e. Algorithms and/or formulae used to determine emission reductions</i></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	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.	OK	OK
b. Have the equations and parameters in the PDD been correctly applied with respect those in the select approved methodology?	VVM	90			
i. Have project emissions considered as described in recent version of ACM0002 followed for: - Emissions related to the operation of geothermal power plants; - Emissions from water reservoirs of hydro power plants.	AMS	I.D	The project activity uses wind power to generate electricity hence as per the applied methodology the emissions from the project activity is taken as zero.	OK	OK
ii. Is leakage considered, if the energy generating equipment is transfereed from another activity	AMS	I.D	Since no equipment is transferred from another project activity or that any existing equipment is transferred to another activity, leakage as per AMS ID is taken as zero	OK	OK
iii. Is emission reduction calculated as per equation $ER_y = BE_y - PE_y - LE_y$	AMS	I.D	Yes, emission reduction is calculated as per equation $ER_y = BE_y - PE_y - LE_y$ .	OK	OK


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c. Does the methodology provide for selection between different options for equations or parameters?	VVM	90	No, the methodology does not provide for selection between different options for equations or parameters for this Project type and category.	OK	OK
d. If yes, has adequate justification been provided (based on the choice of the baseline scenario, context of the proposed CDM project activity and other evidence provided)?	VVM	90	Not applicable	OK	OK
e. If yes, have correct equations and parameters been used, in accordance with the methodology selected?	VVM	90	Refer to (5.e.b) above	-	
f. Will data and parameters be monitored throughout the crediting period of the proposed CDM project activity?	VVM	91	No, Combined margin emission factor is calculated based on Build Margin and Operating Margin and as per section B.6 of the webhosted PDD, the parameter of emission factor will remain fixed throughout the crediting period.	OK	OK
g. If no, and these data and parameters will remain fixed throughout the crediting period, are all data sources and assumptions:	VVM	91			
i. Appropriate and correct?	VVM	91	The data will remain throughout the crediting period.	OK	OK
ii. Applicable to the proposed CDM project activity?	VVM	91	The data and parameters are applicable to the proposed CDM project activity.	OK	OK



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iii. Resulting in a conservative estimate of the emission reductions?	VVM	91	The data will result in a conservative estimate of the emission reductions.	OK	OK
h. Will data and parameters be monitored on implementation and hence become available only after validation of the project activity?	VVM	91	No, the data and parameters are available at the time of validation.	OK	OK
i. If yes, are the estimates provided in the PDD for these data and parameters reasonable?	VVM	91	Not applicable	OK	OK
<b>6. Additionality of a project activity</b>					
a. Does the PDD describe how a proposed CDM project activity is additional?	VVM	94	The description provided in the PDD illustrates the proposed CDM project activity is additional, however in the subsequent sections the same has been discussed in detail.	OK	OK
b. 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	Not applicable.		
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	Not applicable.		
iii. Barriers analysis?	EB 39	Ann 10	Not applicable.		





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iv. Common practice analysis?	EB 39	Ann 10	Not applicable.		
c. 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	Not applicable as the additionality tool is not applied to demonstrate additionality		
ii. Sub-step 1b: Consistency with mandatory laws and regulations	EB 39	Ann 10	Not applicable.		
d. 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	Not applicable.		
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	Not applicable.		
iii. (c) If applicable, continuation of the current situation (no project activity or other alternatives undertaken).	EB 39	Ann 10	Not applicable.		
e. Has the project participant included the	EB	Ann	Not applicable as the additionality tool is not		


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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?	39	10	applied to demonstrate additionality		
f. 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	Not applicable as the additionality tool is not applied to demonstrate additionality		
g. 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	Not applicable as the additionality tool is not applied to demonstrate additionality		
h. 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	EB 39	Ann 10	Not applicable as the additionality tool is not applied to demonstrate additionality		



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country?					
i. 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	Not applicable as the additionality tool is not applied to demonstrate additionality		
j. Has PP selected Step 2 (Investment analysis) or Step 3 (Barrier analysis) or both Steps 2 and 3?	EB 39	Ann 10	Not applicable as the additionality tool is not applied to demonstrate additionality		
k. 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	Not applicable		
ii. Sub-step 2b: Option I. Apply simple cost analysis;	EB 39	Ann 10	Not applicable		
iii. Sub-step 2b: Option II. Apply investment comparison analysis;	EB 39	Ann 10	Not applicable		
iv. Sub-step 2b: Option III. Apply benchmark	EB	Ann	Not applicable		



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analysis;	39	10			
v. Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III);	EB 39	Ann 10	Not applicable		
vi. Sub-step 2d: Sensitivity analysis (only applicable to Options II and III).	EB 39	Ann 10	Not applicable		
I. 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	Not applicable		
ii. Otherwise, use the investment comparison analysis (Option II) or the benchmark analysis (Option III). Specify option used with justification.	EB 39	Ann 10	Not applicable		
m. 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	Not applicable		


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n. 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 context. Please specify	EB 39	Ann 10	Not applicable		
o. 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	Not applicable		
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	Not applicable		


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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 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	EB 39	Ann 10	Not applicable		



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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.					
p. 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 the case of public investors if this is standard practice for the selection of public investments in the host country.	EB 39	Ann 10	Not applicable		
ii. Present the investment analysis in a transparent manner and provide all the relevant assumptions, preferably in the	EB 39	Ann 10	Not applicable		





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CDM-PDD, or in separate annexes to the CDM-PDD.					
iii. Justify and/or cite assumptions.	EB 39	Ann 10	Not applicable		
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		
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	Not applicable		
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	Not applicable		
q. 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	Not applicable as the additionality tool is not applied to demonstrate additionality		
r. Has the outcome of Step 2 clearly	EB	Ann	Not applicable as the additionality tool is not		


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mentioned with justification?	39	10	applied to demonstrate additionality		
s. In step 3: Barrier analysis have all the sub-steps as below been followed?	EB 39	Ann 10			
i. Sub-step 3a: Identify barriers that would prevent the implementation of the proposed CDM project activity;	EB 39	Ann 10	Not applicable as the additionality tool is not applied to demonstrate additionality		
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		
t. 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			
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	EB 39	Ann 10	Not applicable		


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country or other country investments reports of reputed origin.					
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; 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.	EB 39	Ann 10	Not applicable		
iii. (c) Barriers due to prevailing practice: The project activity is the "first of its kind".	EB 39	Ann 10	Not applicable		
iv. (d) Other barriers, preferably specified in the underlying methodology as examples.	EB 39	Ann 10	Not applicable		


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u. Has the outcome from Step 3a clearly mentioned in PDD?	EB 39	Ann 10	Not applicable		
v. 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			
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 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.	EB 39	Ann 10	Not applicable		
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		
iii. The type of evidence to be provided	EB	Ann	Not applicable as the additionality tool is not		


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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.	39	10	applied to demonstrate additionality		
w. Has the outcome from Step 3 clearly mentioned in PDD?	EB 39	Ann 10	Not applicable as the additionality tool is not applied to demonstrate additionality		
x. In step 4: Common practise analysis have all the sub-steps as below followed?	EB 39	Ann 10			
i. Sub-step 4a: Analyze other activities similar to the proposed project activity;	EB 39	Ann 10	Not applicable as the additionality tool is not applied to demonstrate additionality		
ii. Sub-step 4b: Discuss any similar Options that are occurring.	EB 39	Ann 10	Not applicable		


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y. 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	Not applicable		
z. 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 essential distinctions between them that explain why the similar activities enjoyed certain benefits	EB 39	Ann 10	Not applicable		



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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.					
aa.Has the outcome from Step 4 clearly mentioned in PDD?	EB 39	Ann 10	Not applicable		
bb.Has it been proved that the project is additional?	EB 39	Ann 10	Not applicable as the additionality tool is not applied to demonstrate additionality		
cc. Has the PP demonstrated additionality by explaining Investment barrier, Access-to-finance barrier, Technological barrier, Barrier due to prevailing practice or other barriers?	EB 35	Ann 34	Not applicable		
dd.If Investment barrier has been explained, is it demonstraed that financilly more viable alternative to the project activity would have led to higher emissions? Please explain.	EB 35	Ann 34	Not applicable		
ee.If Access-to-finance has been explained, is it demonstraed that the project activity could not access appropriate capital without consideration of the CDM revenues? Please	EB 35	Ann 34	Not applicable		




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explain.					
ff. If Technological barrier has been explained, is it demonstrated that a less technologically advanced alternative to the project activity involves lower risks due to the performance uncertainty or low market share of the new technology adopted for the project activity and so would have led to higher emissions? Please explain.	EB 35	Ann 34	Not applicable		
gg. If prevailing practice barrier has been explained, is it demonstrated that the prevailing practice or existing regulatory or policy requirements would have led to implementation of a technology with higher emissions? Please explain.	EB 35	Ann 34	Not applicable		
hh. If other barrier has been explained, is it demonstrated that Other barriers such as institutional barriers or limited information, managerial resources, organizational capacity, or capacity to absorb new technologies would prevent the project activity any way?	EB 35	Ann 34	Not applicable		
ii. Have the project participants identified the most relevant barrier?	EB 35	Ann 34	Not applicable		
jj. Have the project participants provided transparent and documented third party	EB 35	Ann 34	Not applicable		


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evidence such as national/international statistics, national/provincial policy and legislation, studies/surveys by independent agencies etc. to demonstrate the most relevant barrier? Please explain.					
<b>a. Prior consideration of the clean development mechanism</b>					
a. Is the project activity start date prior to the date of publication of the PDD for stakeholder comments?	VVM	98	Yes, the project activity start date (10/07/2010) is before the date of publication of PDD for stakeholder comments.	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	It is clear from the PDD, when the decision was taken to undertake the project as CDM project activity.	OK	OK
➤ 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	c.	Yes. The start date is as per the Glossary of CDM terms.	OK	OK
d. Does the project activity require construction, retrofit or other modifications?	VVM	99	No, the proposed project activity is supply, erection, commissioning and operation of 8 numbers new wind energy generator each having a capacity of 6.40 MW (Greenfield	OK	OK



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			project). Therefore, the project activity does not require construction, retrofit or other modifications.		
e. If yes, is it ensured that the date of commissioning cannot be considered as the project activity start date?	VVM	99	Not applicable	OK	OK
f. Is it a new project activity (project activities with starting date on or after 02 August 2008) or an existing project activity (project activities with a start date before 02 August 2008)?	VVM	100	The project activity start date is 10/07/2010 which is after 2 <sup>nd</sup> August 2008. Therefore, the proposed project activity is a new project activity.	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 Executive Board before the project activity start date, had the PP informed the Host Party DNA and/or 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/or UNFCCC secretariat).	VVM	101	The project participant has informed Host Party DNA and UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status. The proof for the same has been submitted by the PP.	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			


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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
(i) 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	The project activity start date is 10/07/2010 which is after 2 <sup>nd</sup> August 2008. Therefore, the proposed project activity is a new project activity. Hence not applicable.	OK	OK
(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?			The project activity start date is 10/07/2010 which is after 2 <sup>nd</sup> August 2008. Therefore, the proposed project activity is a new project activity. Hence not applicable.	OK	OK
(ii) 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			
(iii) contract with consultants for CDM/PDD/methodology services?	VVM	102	The project activity start date is 10/07/2010 which is after 2 <sup>nd</sup> August 2008. Therefore, the proposed project activity is a new project activity. Hence not applicable.	OK	OK
(iv) Emission Reduction Purchase Agreements or other documentation related to the sale of the potential CERs	VVM	102	The project activity start date is 10/07/2010 which is after 2 <sup>nd</sup> August 2008. Therefore, the proposed project activity is a new project	OK	OK



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(including correspondence with multilateral financial institutions or carbon funds)?			activity. Hence not applicable.		
(v) evidence of agreements or negotiations with a DOE for validation services?	VVM	102	The project activity start date is 10/07/2010 which is after 2 <sup>nd</sup> August 2008. Therefore, the proposed project activity is a new project activity. Hence not applicable.	OK	OK
(vi) submission of a new methodology to the CDM Executive Board?	VVM	102	The project activity start date is 10/07/2010 which is after 2 <sup>nd</sup> August 2008. Therefore, the proposed project activity is a new project activity. Hence not applicable.	OK	OK
(vii) Publication in newspaper?	VVM	102	The project activity start date is 10/07/2010 which is after 2 <sup>nd</sup> August 2008. Therefore, the proposed project activity is a new project activity. Hence not applicable.	OK	OK
(viii) interviews with DNA?	VVM	102	The project activity start date is 10/07/2010 which is after 2 <sup>nd</sup> August 2008. Therefore, the proposed project activity is a new project activity. Hence not applicable.	OK	OK
(ix) earlier correspondence on the project with the DNA or the UNFCCC secretariat?	VVM	102	The project activity start date is 10/07/2010 which is after 2 <sup>nd</sup> August 2008. Therefore, the proposed project activity is a new project activity. Hence not applicable.	OK	OK
<b>b. Identification of alternatives</b>					
a. Does the approved methodology that is	VVM	105	Yes, the description of the baseline in the	OK	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
selected by the proposed CDM project activity prescribe the baseline scenario and hence no further analysis is required?			PDD as per the approved methodology AMS 1.D selected by the proposed CDM project activity defines the baseline to be grid and grid has been chosen as the baseline for the Project Activity and hence no further analysis is required.		
b. If no, does the PDD identify credible alternatives to the project activity in order to determine the most realistic baseline scenario?	VVM	105	The approved methodology AMS 1.D selected by the proposed CDM project activity defines the baseline to be grid and grid has been chosen as the baseline for the Project Activity and hence does not require assessment of alternatives.	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		
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		
iii. the alternatives comply with all	VVM	106	Not applicable		



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl I
applicable and enforced legislation?					
<b>c. Investment analysis</b>					
a. Has investment analysis been used to demonstrate the additionality of the proposed CDM project activity?	VVM	108	Investment analysis has been used to demonstrate the additionality of the proposed CDM project activity.	OK	OK
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	No alternatives have been selected since the applied methodology prescribes baseline.	OK	OK
ii. economically or financially feasible, without the revenue from the sale of certified emission reductions (CERs)?	VVM	108	Project participant has used Post Tax Equity IRR and WACC as appropriate benchmark for demonstrating additionality of the project activity.	OK	OK
c. Was this shown by one of the following approaches?	VVM	109			
i. Demonstrate that 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	VVM	109	Not applicable as the proposed CDM activity would produce revenue by sale of power to grid apart from CDM related income.	OK	OK





## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl I
CDM project activity.					
ii. The proposed CDM project activity is less economically or financially attractive than at least one other credible and realistic alternative.	VVM	109	No alternatives are there as the methodology prescribes baseline.	OK	OK
iii. The financial returns of the proposed CDM project activity would be insufficient to justify the required investment.	VVM	109	Post Tax Equity IRR has been computed and it has been shown to be below benchmark without CDM benefits.	OK	OK
d. Is the period of assessment limited to the proposed crediting period of the CDM project activity?	EB 62	Ann 5	The period of assessment is not limited to the crediting period, the assessment is for the entire operational life time of the project activity viz., 20 years.	OK	OK
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 62	Ann 5	Equity IRR calculations reflect the period of expected operation of the underlying project activity	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 62	Ann 5	PP to clarify why the cost of major maintenance and or rehabilitation has not been included in the financial analysis.	CL 16	OK
g. Do the project participants justify the appropriateness of the period of assessment	EB 62	Ann 5	Not Applicable as the PP has taken the entire operational lifetime for the assessment.	OK	OK



## VALIDATION REPORT

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in the context of the underlying project activity, without reference to the proposed CDM crediting period?					
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 62	Ann 5	The fair value has been calculated in accordance to the local accounting regulations in the investment analysis. The source for the reference of local regulation to be provided by the PP.	CL 17	OK
i. Has the fair value been calculated in accordance with local accounting regulations where available, or international best practice?	EB 62	Ann 5	Yes calculated in accordance with local 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 62	Ann 5	The IRR calculations includes a fair value of the project activity assets at the end of the assessment period.	OK	OK
k. Was depreciation, and other non-cash items related to the project activity, which have been 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)?	EB 62	Ann 5	The section B.5 of the PDD discusses the wind technology projects receive 80% Accelerated Depreciation benefits.	OK	OK
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 62	Ann 5	Yes, taxation has been deducted in the IRR calculation spreadsheet from the profit before Tax in order to arrive at a net profit.	OK	OK


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## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
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 62	Ann 5	The sources and documentary evidence for the information presented in the B.5 section and financial spreadsheet to be provided by the PP.	CAR 6	OK
n. Is the timing of the investment decision consistent and appropriate with the input values?	EB 62	Ann 5	Please refer CAR 6 above		
o. Are all the listed input values been consistently applied in all calculations?	EB 62	Ann 5	Please refer CAR 6 above		
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 after the commencement and where implementation is recommenced due to consideration of the CDM?	EB 62	Ann 5	Not Applicable		
q. Have project participants supplied the spreadsheet versions of all investment analysis?	EB 62	Ann 5	Yes, the project participants have submitted the investment analysis spreadhseet.  (a) In the cashflow sheet of the financial analysis the PP has stated two components under Cash Outflow, PP to justify the basis of arriving at "Increase/(decrease) in Current Assets.	CAR 7	OK


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## VALIDATION REPORT

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			(b) The approach adopted by the PP to calculate working capital needs to be explained by the PP.  (c) It is observed that Surcharge has not accounted for Income tax calculations.  (d) The calculation of O & M cost is not correct with reference to the expected commissioning date and proposal submitted by Enercon India Ltd.		
r. Are all formulas used in this analysis readable and all relevant cells be viewable and unprotected?	EB 62	Ann 5	Yes, all formulas used in this analysis are readable and all cells are viewable and unprotected.	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 62	Ann 5	Not Applicable. As the PP has submitted the spreadsheet.		
t. In case the PP wishes to black-out certain elements of the publicly available version, is it justifiable?	EB 62	Ann 5	Not Applicable. There are such elements in the analysis which are black- out.	OK	OK
u. Was the cost of financing expenditures (i.e. loan repayments and interest) included in the calculation of project IRR?	EB 62	Ann 5	No, the project is funded 100% by the Project Participant itself, there is no debt component.	OK	OK


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## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
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 62	Ann 5	Yes, the investment cost which is financed by equity is considered in the net cash outflow.	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 62	Ann 5	Not Applicable.		
x. Was a pre-tax benchmark be applied?	EB 62	Ann 5	No, the project participant has applied post tax benchmark.	OK	OK
y. In cases where a post-tax benchmark is applied, is actual interest payable taken into account in the calculation of income tax?	EB 62	Ann 5	There is debt component involved hence this is not applicable.	OK	OK
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 62	Ann 5	Not Applicable, there is no debt involved in this project activity.	OK	OK
aa. In cases where a benchmark approach is used is the applied benchmark appropriate to the type of IRR calculated?	EB 62	Ann 5	The PP has applied Cost of Equity as the benchmark, which is appropriate for Equity IRR.	OK	OK
bb. Has local commercial lending rates or weighted average costs of capital (WACC)	EB 62	Ann 5	Not Applicable		



## VALIDATION REPORT

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selected as appropriate benchmarks for a project IRR?					
cc. Has required/expected returns on equity selected as appropriate benchmark for an equity IRR?	EB 62	Ann 5	Yes, Cost of equity is selected as the benchmark.	OK	OK
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 62	Ann 5	Not Applicable.		
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 62	Ann 5	The PP has deduced the values from publicly available sources which can be assessed and verified.	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 cases where there is only one possible project developer?	EB 62	Ann 5	No, there is no internal company benchmark applied to this project activity.	OK	OK
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	EB 62	Ann 5	Not Applicable		


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in the country/region?					
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 62	Ann 5	Not Applicable		
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 62	Ann 5	Not applicable as the project participant does not use WACC as benchmark in decision making.	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 62	Ann 5	The PP has selected 5 companies while determining the benchmark (cost of equity). PP to clarify the basis for selection of these 5 companies.	CL 18	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 supply the same (or	EB 62	Ann 5	No, the PP has opted for Benchmark Analysis.	OK	OK




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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 62	Ann 5	<p>Yes, the following variables have been subjected to the sensitivity analysis:</p> <ul style="list-style-type: none"> <li>a. Capital Cost</li> <li>b. Tariff</li> <li>c. Plant Load Factor &amp;</li> <li>d. Operation &amp; Maintenance Charges.</li> </ul> <p>However, the sensitivity analysis has been performed and the presented in the web hosted PDD. Plant Load Factor, Project Cost, operation &amp; maintenance and Tariff Rate are selected as the parameters for the analysis. PP has stated that the tariff taken for the analysis is conservative and there would be no escalation after the 10<sup>th</sup> year, PP to substantiate how this tariff would remain the same for the entire operational lifetime of the proposed CDM project activity.</p>	CL 21	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 62	Ann 5	The paramters which have material impact on the IRR, have been cosidered in the analysis. Hence no corrective action has been raised.	OK	OK
nn.Is the range of variations selected is reasonable in the project context?	EB 62	Ann 5	Yes, the 10% variation is prescribed by the Guidelines on the assessment of Investment	OK	OK


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			Analysis – Annex 5 of EB 62. The same approach is applied by the PP, which is reasonable in the project context.		
oo. Does 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 62	Ann 5	The PP has applied 10 % (both - & +) in analysis.	OK	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 62	Ann 5	In none of the scenarios the IRR has crossed the benchmark.	OK	OK
qq. Was the plant load factor defined ex-ante in the CDM-PDD according to one of the following options:	EB 62	Ann 5			
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	EB 62	Ann 5	Not Applicable.		


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project activity for implementation approval?					
ii. The plant load factor determined by a third party contracted by the project participants (e.g. an engineering company)?	EB 62	Ann 5	The PLF study has been conducted by a third party M/s. Ravi Enteck Limited, Chennai, India, has been submitted to the validation team. The PLF as per the third party report is 23.80%, whereas from the Andhra Pradesh Electricity Regulatory Commission (APERC tariff order dated 01/05/2009 it is noted that APERC has accepted 24.5% as the PLF. PP to clarify the conservativeness of the PLF applied in the Investment Analysis.	CL 19	OK
rr. Was a thorough assessment of all parameters 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?	VVM	111	Refer CAR 6 above		
ss. Were the parameters cross-checked against third-party or publicly available sources, such as invoices or price indices?	VVM	111	Refer CAR 6 above		
tt. Were feasibility reports, public announcements and annual financial reports related to the proposed CDM project activity and the project participants reviewed?	VVM	111	Refer CAR 6 above		


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uu. Was the correctness of computations carried out and documented by the project participants assessed?	VVM	111	Refer CAR 6 above		
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	Yes, the same was assessed.	OK	OK
ww. Is the type of benchmark applied is suitable for the type of financial indicator presented?	VVM	112	The Cost of Equity has been taken as a benchmark for Equity IRR, which is suitable benchmark.	OK	OK
xx. Do any risk premiums applied determining the benchmark reflect the risks associated with the project type or activity?	VVM	112	Please refer CL 18 above		
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:					
i. assessing previous investment decisions by the project participants involved?	VVM	112	From the office discussions it is noted that the PP has experience in developing wind power projects. PP to clarify whether the same benchmark has been applied for other projects (implemented projects & proposed projects) for making the investment decision. PP to clarify the difference, if any, in the benchmark value when the project is being	CL 20	OK


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			developed by the same entity and almost at similar timing. The PP is also requested to explain how the benchmark has been arrived at as mentioned in the web hosted PDD in section B.5.		
ii. determining whether the same benchmark has been applied?	VVM	112	Please refer CL 20 above		
iii. determining if there are verifiable circumstances that have led to a change in the benchmark?	VVM	112	Please refer CL 20 above		
zz. Did the project participants rely on values from Feasibility Study Reports (FSR) that are approved by national authorities for proposed project activities?	VVM	113	<p>No there was no feasibility study reports approved by national authorities which was used in investment decisions. The inputs for the investment analysis were taken from the Initial Offer received from equipment supplier – Enercon, tariff orders and the relevant regulatory &amp; statutory sources. The initial offer received from Enercon (Equipment Supplier) has not been submitted by the PP.</p> <p>It is stated in the web hosted PDD that this is the first investment by the project participant. The validation team observed that there are other investments also, which are under validation or CDM pipeline. Please clarify.</p>	CL 22	OK


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aaa. If yes:	VVM	113	Not Applicable.		
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.		
ii. Are the values used in the PDD and associated annexes fully consistent with the FSR?	VVM	113	Not Applicable.		
iii. If not, was the appropriateness of the values validated?	VVM	113	Not Applicable.		
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.		
<b>d. Barrier analysis</b>					
a. Has barrier analysis been used to demonstrated the additionality of the	VVM	115	Project participant has applied Investment Barrier demonstrate additionality. Barrier	OK	OK



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proposed CDM project activity?			analysis is not applied to demonstrate additionality.		
b. If yes, does the PDD demonstrate that the proposed CDM project activity faces barriers that:	VVM	115	Not Applicable		
i. prevent the implementation of this type of proposed CMD project activity?	VVM	115			
ii. do not prevent the implementation of at least one of the alternatives?	VVM	115			
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		
d. Were the barriers determined as real by:	VVM	117	Not Applicable		
i. assssing the available evidence and/or undertaking interviews with relevant individuals (including members of industry associations, government officials or local experts if necessary) to	VVM	117			


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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			
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			
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		
<b>e. Common practice analysis</b>					
a. Is this a large-scale, or first-of-its kind small-	VVM	118	The PP has not demonstrated the additionality	OK	OK





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scale project activity?			based on the common practice analysis approach.		
b. If yes, was common practice analysis carried out as a credibility check of the other available evidence used by the project participants to demonstrate additionality?	VVM	118	Not Applicable		
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	118	Not Applicable		
d. Was a region other than the entire host country chosen?	VVM	120	Not Applicable		
e. If yes, was the explanation why this region is more appropriate assessed?	VVM	120	Not Applicable		
f. Using official sources and local and industry expertise, was it determined to what extent similar and operational projects (e.g., using similar technology or practice), other than CDM project activities, have been undertaken in the defined region?	VVM	120	Not Applicable		
g. Are similar and operational projects, other than CDM project activities, already "widely	VVM	120	Not Applicable		



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observed and commonly carried out" in the defined region?					
h. If yes, was it assessed whether there are essential distinctions between the proposed CDM project activity and the other similar activities?	VVM	120	Not Applicable		
<b>7. Monitoring plan</b>					
a. Does the PDD include a monitoring plan?	VVM	122	Yes, the PPD includes a monitoring plan.	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: AMS –ID, Version 17.	OK	OK
c. Were the list of parameters required by the the selected methodology identified?	VVM	123	Please refer CAR 3 in section 3. t. i.		
d. Does the monitoring plan contains all necessary parameters?	VVM	123	Please refer CAR 3 in section 3. t. i.		
e. Are the parameters clearly described?	VVM	123	Please refer CAR 3 in section 3. t. i.		
f. Does the means of monitoring described in the plan comply with the requirements of the methodology?	VVM	123	Please refer CAR 3 in section 3. t. i.		
g. Have all relevant parameters been monitored as indicated in the table of the methodology? PI state any deviations/omissions.	AMS	I.D	Please refer CAR 3 in section 3. t. i.		
h. Has the CO <sub>2</sub> emission factor of the grid electircity measured either by Combined	AMS	I.D			


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Margin or by the Weighted Average emission?					
i. Has the CO <sub>2</sub> emission factor of fossil fuel type i measured as per the .Tool to calculate project or leakage CO <sub>2</sub> emissions from fossil fuel combustion."	AMS	I.D	Not Applicable. The project activity is wind energy based power project and there are no fossil fuels involved in the project.	OK	OK
j. Has the Net calorific value of fossil fuel type i measured as per the .Tool to calculate project or a leakage CO <sub>2</sub> emissions from fossil fuel combustion.	AMS	I.D	Not Applicable. This is a Greenfield Wind based Power Project.	OK	OK
k. Has the Quantity of fossil fuel consumed in year y measured as per the .Tool to calculate project or a leakage CO <sub>2</sub> emissions from fossil fuel combustion.	AMS	I.D	Not Applicable. This is a Greenfield Wind based Power Project.	OK	OK
l. Has the Quantity of net electricity supplied to the grid in year y measured using energy meters.	AMS	I.D	Please refer CAR 3 in section 3. t. i.		
m. Is the quantity of net electricity supplied to the grid in year y monitored/recorded - Continuous monitoring, hourly measurement and at least monthly recording? Notes on measurement method: - Calibration should be undertaken as prescribed in the relevant paragraph of General Guidelines to SSC Methodologies. - If applicable, measurement results shall be	AMS	I.D	Please refer CAR 3 in section 3. t. i.		


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## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl I
<p>cross checked with records for sold/purchased electricity (e.g., invoices/receipts)</p> <p>- The net electricity export/supplied to a grid is the difference between the measured quantities of the grid electricity export and the import. If applicable, cross check net electricity supplied to a grid as gross energy generation in the project activity power plant minus the auxiliary/station electricity consumption, technical losses and electricity import from the grid to the project power plant measured at the grid interface/connection used for billing purposes</p>					
<p>n. Is the Quantity of biomass consumed in year y monitored/recorded Continuously or estimate using annual energy/mass balance?</p> <p>Notes on measurement method:</p> <ul style="list-style-type: none"> <li>- Use mass or volume based measurements.</li> <li>- Adjust for the moisture content in order to determine the quantity of dry biomass.</li> <li>- And/or perform an annual energy/mass balance that is based on purchased</li> </ul>	AMS	I.D	Not Applicable. The project activity is a Wind based Power Project.	OK	OK


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## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl I
quantities and stock. - For projects consuming biomass and fossil fuel to produce electricity, a specific energy consumption <sup>11</sup> of each type of fuel (biomass or fossil) to be used should be specified ex ante. The consumption of each type of fuel (biomass or fossil) shall be monitored. If fossil fuel is used, the electricity generation metered should be adjusted by deducting the electricity generation from fossil fuels using the specific energy consumption and the quantity of fossil fuel consumed. The amount of electricity generated using biomass fuels calculated then shall be compared with the amount of electricity generated calculated using specific energy consumption and amount of each type of biomass fuel used. The lower of the two values should be used to calculate emission reductions					
o. Is the Moisture content of the biomass residues monitored atleast on a monthly basis?	AMS	I.D	Not Applicable. The project activity is a Wind based Power Project.	OK	OK
p. Is the weighted average of the moisture content calculated for each monitoring period and used in the calculations?	AMS	I.D	Not Applicable. The project activity is a Wind based Power Project.	OK	OK


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## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl I
Notes on measurement method: On-site measurements In case of dry biomass, monitoring of this parameter is not necessary					
q. Is Net calorific value of biomass residue type k monitored annually? Notes on measurement method: Measurement in laboratories according to relevant national/international standards. Measure the NCV based on dry biomass. Check the consistency of the measurements by comparing the measurement results with measurements from previous years, relevant data sources (e.g. values in the literature, values used in the national GHG inventory) and default values by the IPCC. If the measurement results differ significantly from previous measurements or other relevant data sources, conduct additional measurements	AMS	I.D	Not Applicable. The project activity is a Wind based Power Project.	OK	OK
r. Is the Standard deviation of the annual average historical net electricity generation delivered to the grid by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity calculated from data used	AMS	I.D	Not Applicable. The project activity is a Wind based Power Project.	OK	OK


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## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl I
to establish Eghistorical?					
s. Is the parameters relevant to reservoir based hydro and geothermal plants monitored following the most recent version of ACM0002?	AMS	I.D	Not Applicable. The project activity is a Wind based Power Project.	OK	OK
t. Are the monitoring arrangements described in the monitoring plan feasible within the project design?	VVM	123	Yes, the monitoring arrangement is described in the monitoring plan.	OK	OK
u. Does the monitoring plan provide details regarding calibration of monitoring equipments/ instruments or does it include zero check as a substitute for calibration? (zero check can not be considered as a substitute for calibration)	EB 24	37	Yes, the monitoring plan provides details of calibration of energy meters, however the PP in B.7.2 section of the PDD has stated that the LCS meters does not require calibration. PP to clarify the same.	CL 23	OK
v. 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	Data Management procedures are sufficient to determine the emission reductions achieved.	OK	OK
ii. quality assurance procedures?	VVM	123	Has not been provided in the PDD.	(CAR 4)	OK
iii. quality control procedures?	VVM	123	Has not been provided in the PDD.	CAR 4)	OK
<b>8. Sustainable development</b>					


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## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl I
a. Does the CDM project activity assists Parties not included in Annex I to the Convention in achieving sustainable development?	VVM	125	The Letter of Approval (LoA) from the Host Party DNA has not been submitted by the PP.	(CL 1)	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	The Letter of Approval (LoA) from the Host Party DNA has not been submitted by the PP.	(CL 1)	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 PPs to comment on the proposed CDM project activity prior to the publication of the PDD on the UNFCCC website?	VVM	128	The PP has performed local stakeholder meeting on 07/05/2011. Invitations for the meeting were sent to the stakeholders on 28/04/11. The invitations sent to the stakeholders have not been submitted by the PP.	CL 12	OK
b. Have comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity been invited?	VVM	129	The comments received from the local stakeholders can be considered relevant to the proposed CDM project activity.		
c. Is the summary of the comments received as provided in the PDD complete?	VVM	129	Summary of comments have been provided but the names of the stakeholders who put forth these comments are not presented in the PDD.	(CAR 5)	OK





## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl I
d. Have the project participants taken due account of any comments received and described this process in the PDD?	VVM	129	From description provided in the web hosted PDD, it is not clear how the comments were received from the local stakeholder and how it was recorded.	(CL 15)	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 EIA notification – 2006. The project activity does not fall under the purview of Schedule - I of this notification. Hence it is not mandatory to perform environmental impacts analysis for this project activity.	OK	OK
b. Have the project participants undertaken an analysis of environmental impacts?	VVM	132	The project activity does not fall under the purview of Schedule - I of this notification. Hence it is not mandatory to perform environmental impacts analysis for this project activity.	OK	OK
c. Does the host Party require an environmental impact assessment?	VVM	132	As per the Schedule – I of the 2006 EIA notification, it is not mandatory to perform environmental impacts assessment for this project activity.	OK	OK
d. If yes, have the project participants undertaken an environmental impact assessment?	VVM	132	Not Applicable		

**Table 2** Specific validation activities

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
<b>1. Project design of small-scale clean development mechanism project activities</b>					
a. Does the proposed small-scale project activity meet the requirements of the simplified modalities and procedures for small-scale CDM project activities?	VVM	133	Yes the proposed small-scale CDM project activity meet the requirements of the simplified modalities and procedures for small-scale CDM project activities	OK	OK
b. Does the project activity qualify within the thresholds of the three possible types of small scale project activities? [Type (i) project activities: renewable energy project activities with a maximum output capacity equivalent to up to 15 megawatts; Type (ii) project activities: energy efficiency improvement project activities which reduce energy consumption, on the supply and/or demand side, by up to the equivalent of 15 gigawatt hours per year; Type (iii) project activities: other project activities that both reduce anthropogenic emissions by sources and directly emit less than 15 kilotonnes of carbon dioxide equivalent annually.]	VVM	134	The project activity is the installation 8 numbers new wind energy generators (WEG's) each having a capacity of 6.40 MW. Therefore, project activity is Type-1 project activity and is within the capacity of 15 MW.	OK	OK
c. Does the project activity conform to one of the approved small-scale categories?	VVM	134	The project activity conform to the approved small-scale methodology 'Grid connected renewable electricity generation' AMS 1D, Version 17.	OK	OK


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## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
d. Does the project activity apply the relevant tool and methodology?	VVM	134	The project activity has the relevant methodology and applicable tool.	OK	OK
e. Are the small-scale methodologies applied in conjunction with the general guidance to the methodologies, which provides guidance on equipment capacity, equipment performance, sampling and other monitoring-related issues?	VVM	134	The small-scale methodology is applied in conjunction with the general guidelines to SSC CDM methodologies.	OK	OK
f. Is the project activity a debundled component of a large-scale project, i.e., is there a registered small-scale CDM project activity or an application to register another CDM project activity: (a) with the same project participants; (b) in the same project category and technology/measure; and (c) registered within the previous 2 years; and (d) whose project boundary is within 1 km of the proposed boundary of the proposed small-scale activity at the closest point?	VVM	134	The project activity is not a debundled component of large scale project.	OK	OK
g. Is and assessment of the environmental impacts of the proposed CDM project activity required by the host Party?	VVM	134	As per the Schedule – I of the 2006 EIA notification, it is not mandatory to perform environmental impacts assessment for this project activity.	OK	OK
h. Is the project additional?	VVM	135	Refer to section 6 above	-	-

**TABLE 3 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
CL 1 Letter of Approval from the Host DNA has not been submitted by the PP.	Table -1 1. a	Letter of Approval from Host DNA has been provided to DOE.	The project participant has submitted the host country approvals (letter of approval of DNA of host country) vide reference no. 4/20/2011-CCC dated 13 September 2011. Hence CL-1 is closed.
CL 2 Physical location and Longitude & latitude details of individual WEG have been provided. Proof for the same to be provided by the PP. The information has exceeded the one page limit, which is not in accordance with guidance for completing SSC PDD.	Table -1 3. f. ii	<p>PP has submitted the copy of intimation mail sent to UNFCCC for prior CDM consideration along with the filled form (F-CDM-Prior Consideration) to DOE as a proof of location and longitude &amp; latitude.</p> <p>Information has been reduced to one page limit, in accordance with guidance for completing SSC PDD</p> <p>PP has also submitted the third party PLF report, which can be referred for the cross verification of latitude and longitude details for</p>	<p>The copy of the intimation mail sent to UNFCCC for prior CDM consideration along with the filled form has been submitted and the same has been noted.</p> <p>PP has submitted the PLF Study conducted by M/s. Ravi Enteck Limited, dated 24/11/2010, The details of Latitude and Longitude are provided in this report. The same has been checked and found to be matching with the details provided in the PDD, the same is acceptable to the validation team.</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
		the project activity.	The information in the A.4.1 section of the revised PDD has now been limited to one page. The same has been checked by the validation team and found to be in accordance with Guidelines for completing the CDM SSC PDD. Hence CL 2 is closed.
<p>CL 3</p> <p>The information in the section A.4.2 of the web hosted PDD has been provided but the project category mentioned is not in line the Indicative Simplified Modalities &amp; Procedures for SSC projects. PP to clarify the same.</p> <p>It has been stated that waste generated as a result of O &amp; M activity disposed through third party as per disposal procedure of EIL. Please clarify the disposal procedure.</p>	Table -1 3. g. i	<p>Project category has been revised under Section A.4.2 as per the DOE comment.</p> <p>We would like to clarify to DOE that the solid /oily waste generated as a result of the O&amp;M activity at the site are disposed of through authorized third party for further disposal. The third party is ISO certified agency which disposes the waste according to the environmental policies prevalent in Host country.</p>	The corrections incorporated in section A.4.2 of the PDD is found satisfactory and the waste disposal mechanism is performed in an acceptable manner which meets the state & national regulation, the mechanism of disposal is achievable, hence CL 3 is closed.
CL 4	Table -1	Unit mentioned in last row of table	The revision incorporated 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 estimation of emission reductions has been provided in a tabular format in section A.4.3 of the web hosted PDD, however the unit mentioned in last row of the table is not as per the Guidelines for Completing the SSC PDD.	3. h	in section A.4.2 has been revised as per DOE observation.	section A.4.3 of the revised PDD has been checked and found to be correct, hence CL 4 is closed.
CL 5 The information that no public funding is available to the project activity has been provided in section A.4.4. PP to substantiate the means of finance with credible objective evidence.	Table -1 3. i	An undertaking regarding no public funding has been provided by PP to DOE to substantiate the means of finance. Further CA certificate has been submitted to DOE regarding 100% equity funding project.	PP has submitted a certificate dated, 28/09/2011 issued by "Mehul Vora & Co" which is a chartered accountancy firm. The certificate confirms that the project has been funded entirely by company's internal accruals. The documentary evidence submitted by the PP is acceptable, hence CL 5 is closed.
CL 6 The PP is developing a large scale project in the same region. PP to clarify how this project activity cannot be considered as debundled component of a large scale project activity in accordance with Appendix C. The distance between these projects also need to be provided by the PP.	Table -1 3. j. i	As per the "Guidelines on assessment of debundling for SSC project activities", a proposed small-scale project activity shall be deemed to be a debundled component of a large project activity if there is a registered small-scale CDM project activity or	The PP response with respect to the debundling is acceptable; the validation team had performed the physical verification of the site and was able to ascertain that there is no other CDM project activity within 1 km range with same project category and technology.



## 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>an application to register another small-scale CDM project activity:</p> <p>(a) With the same project participants;</p> <p>(b) In the same project category and technology/measure; and</p> <p>(c) Registered within the previous 2 years; and</p> <p>(d) Whose project boundary is within 1 km of the project boundary of the proposed small scale activity at the closest point.</p> <p>Since, another large scale project (20.8 MW) which is being developed by the same PP is planned to install at site Anantapur (19.2 MW) and Kurnool (1.6 MW). The Anantapur site is around 250 KM for Kurnool site and further 2 WEGs which is planned to install Kurnool site are more than 1 KM from the present CDM project activity. Since spatial distance for the both the project are more than</p>	<p>The Purchase Order (PO) of this proposed CDM project activity and the purchase orders of the other large scale project were also made available to the validation team, the POs clearly state the site details.</p> <p>From the document assessment and site visit it is confirmed that the proposed CDM project activity is not a debundled component of large scale project activity, hence CL 6 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
		1 KM (please refer point 'd' above), the small scale project is not debundled component of large scale project. Explanation has also been given in section A.4.5 of PDD.	
CL 7 The B.4 section of the web hosted PDD states that the project activity is connected to the TNEB Grid whereas the project activity is located in Andhra Pradesh. PP to clarify the same.	Table-1 3. n. iii	Correction has been made in section B.4. TNEB has been replaced with the Andhra Pradesh electricity grid.	The correction incorporated in section B.4 of the revised PDD has been checked and found to be OK. Hence CL 7 is closed.
CL 8 National Policies and Circumstances relevant to the baseline of the project activity have not been provided in the B.5 section of the web hosted PDD in accordance with Annex 3 of EB-22.	Table-1 3. o. ii	There are no national policies and circumstances relevant to the baseline of the project activity. Further as per the As per the applicable methodology AMS I.D., version 17, "The baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources	The response provided by the PP is acceptable and is in accordance with Guidelines to completing CDM SSC PDD and applied baseline methodology, hence CL 8 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
		into the grid". So in India there are no policies and circumstances which can prevent the implementation of baseline scenario.	
CL 9 PP to substantiate the operational lifetime of the WEGs.	Table-1 3. w	An undertaking regarding the operational lifetime of the WEGs has been provided by WEG Supplier	The project participant has submitted an undertaking letter issued by the manufacturer / supplier of the WEG i.e. M/s. Enercon India Ltd. The certificate mentions clearly that all the components of the WEG are designed to operate the WEG consistently at rated capacity and output for 20 years. CL 9 is closed having reviewed the undertaking of the WEG supplier.
CL 10 The information on the fixed crediting period in section C.2.2 of the web hosted PDD is not provided as required by the guidance for completing the SSC PDD.	Table-1 3. bb	Correction has been made as per DOE comment.	The revised PDD, has been submitted by the PP. The correction incorporated in the section C.2.2 of the revised PDD has been checked and found to be in accordance with the guidelines for completing CDM SSC PDD.



## 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
CL 11 In the C.2.2.1 section of the web hosted PDD, date is provided in DD/MM/YYYY format. The date of registration is mentioned as 01/09/2011, the date has already elapsed.	Table-1 3. cc	Date of registration has been revised to 01/03/2012 in section C.2.2.1.	Hence CL 10 is closed. The same has been checked in the revised PDD and found to be acceptable to the validation team as expected date of registration, hence CL 11 is closed.
CL 12 The PP has performed local stakeholder meeting on 07/05/2011. Invitations for the meeting were sent to the stakeholders on 28/04/11. The invitations sent to the stakeholders have not been submitted by the PP.	Table-1 3. ff. I & 9. a	Copy of invitations sent to local stakeholders has been submitted to DOE.	The copies of invitations sent to the stakeholders have been submitted by the PP. The validation team, having reviewed confirms the correctness of the invitation process. Hence CL 12 is closed.
CL 13 The PP to clarify how the description of the project activity was provided to the local stakeholders, which enabled the stakeholders to understand the objective and purpose of the project activity. The same is not clearly described in the web hosted PDD.	Table-1 3. ff. ii	First description of project activity was given through the invitation of stakeholder meeting sent to local stakeholders. Invitation had the brief description of project activity along with venue and date of meeting conducted by PP so that stakeholder could understand the project in details. Further PP conducted the local stakeholder meeting at Anantapur	The minutes of the stakeholder meeting conducted on 07/05/2011 has been submitted by the PP. From the MoM it is noted that the officials of Equipment Supplier who are also the O&M contractors for this project had participated in the meeting along with representatives of the PP. Since, the conversation in the local stakeholders' meeting was in local language, the local



## 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
		District in Andhra Pradesh on 7 May 2011 at 10:30 am to 12:30 pm. Representative of PP and officials from Enercon gave the presentation to the stakeholder about the objective & purpose of project activity though verbal communication in local language. Minutes of meeting has been provided to DOE for reference.	stakeholders could understand the purpose of project activity and were able to comment correctly on the proposed CDM project activity. The validation team has confirmed the same during site visit by interacting with local stakeholders. Also, the invitation letters were sent to the local stakeholders 9 days prior to the date of LSM. This has also given them sufficient time to understand and inquire about the project activity. As the over all process of local stakeholder consultation meeting is satisfactory and appropriate, the validation team has closed CL 13.
CL 14 From description provided in the web hosted PDD, it is not clear how the comments were received from the local stakeholder and how it was recorded.	Table-1 3. hh	PP conducted the local stakeholder meeting at Anantapur District in Andhra Pradesh on 7 May 2011 at 10:30 am to 12:30 pm. PP had a direct interaction with the stakeholder asked them to provide their comments &	The minutes of meeting submitted has recorded the comments provided by the stakeholders and these comments are presented in section E.2 of the revised PDD. CL 14 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
		suggestion regarding the project activity. Further stakeholders were requested to provide the comments through mail & direct contact details as mentioned in Public notice. Minutes of meeting were recorded on by Enercon officials. Signed minutes of meeting have been provided to DOE for reference.	
CL-15 The project participant has not included applicability condition 2 of the applied baseline and monitoring methodology AMS I D.	Table-1 5.b.d.ii	As per DOE comment the applicability condition 2 has been included in section B.2 of revised PDD.	The PP has included in the applicability condition of the applied approved Methodology – AMS ID, Version 17, in the revised PDD. The same has been checked and found to be acceptable, hence CL 15 is closed.
CL 16 PP to clarify why the cost of major maintenance and or rehabilitation has not been included in the financial analysis.	Table-1 6. c. f	We would like to clarify to DOE that the project activity is installed on the barren land and there is no local population staying there which doesn't lead to rehabilitation that's why cost of rehabilitation has not been included in financial	The Operation & Maintenance Expense incurred year on year basis is already a part of the financial analysis; the same has been checked and found to be corrected.



## 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>From the IRR computations it is noted that the O&amp;M expenses for the 2<sup>nd</sup> year have been calculated including escalation.</p>		<p>analysis. The project life is 20 years and the maintenance requirement for the project activity does not include major maintenance for the lifetime. Therefore this has not been included in the investment analysis.</p> <p>Correction has been made in O&amp;M expenses. Further being conservative PP has taken zero O&amp;M cost for year 2011 &amp; 2012. PP has also done the sensitivity analysis based on the actual O&amp;M contract.</p>	<p>The response provided by the PP with respect to Displacement or Rehabilitation is accepted, since the land, where the WEGs are located were dry and barren lands, the information that the land was dry and barren is available in the two Lease Deeds dated 07/03/2011 (for two sites).</p> <p>Having reviewed the Operation &amp; Maintenance Agreement, the validation team is able to conclude there will always be a scheduled plant maintenance activity of proposed CDM project activity.</p> <p>Based on the satisfactory response and documentary evidence submitted to the validation team, CL 16 is closed.</p>
<p>CL 17 The fair value has been calculated in accordance to the local accounting</p>	<p>Table-1 6. c. h</p>	<p>As per the section 32 of the Income tax Act, 1961, plant &amp; machinery are allowed</p>	<p>The project participant has referred to the Company's Act as a source of the salvage / fair value.</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
regulations in the investment analysis. The source for the reference of local regulation to be provided by the PP.		<p>depreciation up to 90%, (web link: <a href="http://taxguru.in/income-tax/understanding-deprecation-section-32-income-tax-act-1961-latest-case-laws.html">http://taxguru.in/income-tax/understanding-deprecation-section-32-income-tax-act-1961-latest-case-laws.html</a>).</p> <p>Considering the 20 years useful life of the wind energy generators the rate of depreciation is to be 4.5% per annum as per SLM approach.</p> <p>Since the WEGs are depreciated up to 90% of value hence the salvage value of 10% of project cost has been taken at the 20<sup>th</sup> year of investment analysis.</p>	<p>This is in accordance with the accounting principle of the host country and hence appropriate in line with requirement of guidelines on the investment analysis. However, the APERC tariff order dated 01/05/2009 mentions that the depreciation on WEGs can be claimed up to 90%. Thus, the project participant has considered the values of fair value as 10%, which is conservative of the two sources. But the basis source of the fair value calculations is Company's Act. The PP has used applicable regulations as reference for the salvage value in the computation of IRR. The revised IRR sheet has been submitted and the same has been checked and found to be ok. Hence CL 17 is closed.</p>
CL 18 The PP has selected 5 companies while	Table-1 6. c. jj	PP has selected the beta values of those power generating companies	PP has chosen the default value and forecast of inflation rate 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
determining the benchmark (cost of equity). PP to clarify the basis for selection of these 5 companies.		in India which are listed on the stock exchange at the time of investment decision and have sufficient data for past three years 3 years prior to decision making date so that the beta is reflective of the recent market risk.	host country while computing the benchmark. PP to clarify whether the forecast information of the inflation rate was available at the time of decision making.
CL 19 The PLF study has been conducted by a third party M/s. Ravi Enteck Limited, Chennai, India, has been submitted to the validation team. The PLF as per the third party report is 23.80%, whereas from the Andhra Pradesh Electricity Regulatory Commission (APERC tariff order dated 01/05/2009 it is noted that APERC has accepted 24.5% as the PLF. PP to clarify the conservativeness of the PLF applied in the Investment Analysis.	Table-1 6. c. qq. li	PP has considered the third party PLF based on the "Guidelines for the reporting and validation of Plant load factors", EB 48, annex 11, which states that :  The plant load factor shall be defined ex-ante in the CDM-PDD according to one of the following three options: (a) 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;	As clarified by the project participant, though the PLF indicated by APERC is higher than the PLF estimated by third party, the PLF has been considered in investment analysis to adhere the requirement of the Annex 11 of EB-48. This acceptable to validation team as the source of PLF, however the validation team would like PP to perform the sensitive analysis of +10% sensitivity of PLF provided by the APERC tariff order viz., 24.50%. The PP has subjected the PLF of APERC order to +10% & -10% variation. It is noted that IRR is still



## 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) The plant load factor determined by a third party contracted by the project participants (e.g. an engineering company);</p> <p>PP has contracted M/s. Ravi Enteck Limited, Chennai, India, for PLF estimation of Site. As per the PLF report submitted by M/s. Ravi Enteck, the estimated PLF of site is 23.80% and same has been selected for Investment analysis.</p> <p>PP has conducted the sensitivity analysis of 10% on PLF up to PLF value of 26.18% and PLF value of 24.5 % as accepted by APERC has been covered under the sensitivity analysis.</p> <p>The project is additional up to PLF value of 39.23%, which is 64.85% higher than the base PLF of</p>	<p>below the benchmark.</p> <p>The corrections incorporated and response provide by the PP is satisfactory and acceptable to the validation team, hence CL 19 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
		23.80% provided by third party, which covers the sensitivity range of +/-10% and PLF provided by APERC order.	
<p>CL 20</p> <p>From the office discussions it is noted that the PP has experience in developing wind power projects. PP to clarify whether the same benchmark has been applied for other projects (implemented projects &amp; proposed projects) for making the investment decision. PP to clarify the difference, if any, in the benchmark value when the project is being developed by the same entity and almost at similar timing. The PP is also requested to explain how the benchmark has been arrived at as mentioned in the web hosted PDD in section B.5.</p> <p>PP has demonstrated Benchmark based on the latest Guidelines on the Assessment of Investment Analysis, EB 62, Annex 5. PP is requested to demonstrate the additionality based on a conservative benchmark.</p>	Table-1 6. c. yy. i	<p>PP has initiated other projects in different states of India at the time of investment decision of project activity and all of the projects are under the CDM pipeline and the same benchmark approach of cost of equity was selected for the all the projects. Detailed calculation of benchmark calculation has been provided in revised PDD. PP has calculated the benchmark cost of equity based on the data sources available in the market and benchmark cost of equity is 16.40%.</p> <p>Based on the latest guidelines of EB 62 the cost of equity benchmark has also been calculated based on default values</p>	<p>When the benchmark to be compared is a nominal one, the IRR which is sought to be compared has to be also a nominal one. The IRR computed is without any inflation.</p> <p>PP also to justify the applicability of inflation rate of the Host Country at the time of decision making.</p> <p>The Reserve Bank of India's report has been provided as the reference for determining the inflation rate. The webpage link provided has been checked by the validation team, from the webpage it is noted that date of publication of this report is on 03/05/2010. Hence the validation team is able</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>and nominal benchmark cost of equity is 17.34%.</p> <p>For the demonstration of additionality and based on the conservative approach PP has selected the benchmark of 16.40% cost of equity out of above two values.</p>	<p>to conclude that the information was available to the PP at the time of decision making.</p> <p>The validation team has conducted validation of both the benchmarks and found them to be appropriate to the type of approach for each of them in decision making context. However, the benchmark calculated as per the CAPM based on the standard market data available is found to be the most conservative of the two and hence accepted by the validation team for the purpose of demonstration of additionality of the proposed CDM project activity through investment analysis</p> <p>The response provided by the PP is acceptable to the validation team hence CL 20 is closed.</p>
CL 21	Table 1	Andhra Pradesh state electricity	The validation team checked 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>The sensitivity analysis has been performed and the presented in the web hosted PDD. Plant Load Factor, Project Cost, operation &amp; maintenance and Tariff Rate are selected as the parameters for the analysis. PP has stated that the tariff taken for the analysis is conservative and there would be no escalation after the 10<sup>th</sup> year, PP to substantiate how this tariff would remain the same for the entire operational lifetime of the proposed CDM project activity.</p>	6.c.II	<p>commission has fixed the constant tariff of INR 3.50/ kWh for the period of 10 years.</p> <p>The tariff is subject to change at the end of the term of PPA. The commission has determined the cost plus approach. The excerpts from the tariff order are as follows (Refer Para 7, page of tariff order dated 01 May 2009.):</p> <p><i>"In a cost plus approach, the key elements that influence the determination of tariffs are: (a) Capital Cost (b) Capacity Utilization Factor (c) Operation and Maintenance Cost (d) Depreciation (e) Return on Equity (f) Interest cost on Debts (g) Debt Equity Ratio."</i> (Refer Para 7, page of tariff order dated 01 May 2009.)</p> <p>The key elements as per the tariff order are analyzed hereunder:-</p> <p>-Capital Cost : Rs.4.70 Crs. / MW</p>	<p>APERC tariff order, the approach adopted by the regulatory commission to determine the tariff for new wind based projects. From the order it is noted that the commission has envisaged that the tariff would decreases year and year and beyond the tenth year the commission has not indicated any tariff or stated anything on escalation. The validation team finds the approach adopted by the PP to be justifiable and acceptable; hence CL 21 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
		<p>-Capacity Utilization Factor: 24.5 %</p> <p>-Operation and Maintenance Cost: 1.25% of the project cost with an escalation of 5% per annum thereafter.</p> <p>-Depreciation: 4.5% per annum</p> <p>-Return on Equity: 15.5% pre tax</p> <p>-Interest rate: 12% per annum</p> <p>-Debt Equity Ratio: 70:30</p> <p><i>"The tariff stream with the above key elements has been worked out by the Commission, for arriving at levelised cost using discount rate at weighted average cost of capital i.e 13.05 % which works out to a fixed tariff for 20 years at Rs 3.43 per unit. However, in view of the urgent need to exploit the available potential of about 2100 MWs, out of which only about 100 MWs has been harnessed as on date, the Commission has decided to fix the</i></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><i>Single Part tariff for the first ten years at Rs. 3.50 Per unit and the tariff for the next ten year period will be decided thereafter."</i></p> <p>To derive the tariff after 10 years the electricity sale income after 10 years is needed to be adjusted so that the levelised cost of tariff work out Rs 3.43 per unit for 20 years.</p> <p>On computation the average tariff after 10<sup>th</sup> year onwards based on APERC assumptions works out to be INR 2.10 per unit. Detailed calculation sheet of tariff calculation after 10<sup>th</sup> year is attached with the IRR calculation sheet.</p> <p>Therefore it is considered appropriate to conduct sensitivity on tariff at the rate of INR 2.10 per unit. The equity IRR at tariff of INR 2.10 per unit after 10<sup>th</sup> year is</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>5.46%, which is lower than the benchmark.</p> <p>Though being conservative PP has selected the tariff of INR 3.50 per unit after term of PPA and equity IRR is 8.05% which is less than the benchmark. Further PP has done sensitivity of +10% on tariff after 10<sup>th</sup> year and equity IRR is 8.57% which is lower than the benchmark.</p>	
<p>CL 22 The initial offer received from Enercon (Equipment Supplier) has not been submitted by the PP.</p> <p>It is stated in the web hosted PDD that this is the first investment by the project participant. The validation team observed that there are other investments also, which are under validation or CDM pipeline. Please clarify.</p>	<p>Table-1 6. c. zz</p>	<p>Initial offer received from Enercon (Equipment Supplier) has been submitted to DOE.</p> <p>We would like to clarify to DOE that This is the first investment by Vish Wind Infrastructure LLP in the state of Andhra Pradesh. PP placed different purchase orders for the wind installation in 5 different states (Gujarat, Karnataka, Tamil Nadu, Rajasthan</p>	<p>Initial offer dated, 25/06/2010; received from the equipment supplier (Enercon) has been submitted to the validation team.</p> <p>The response provided by the PP is acceptable the validation team, hence CL 22 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
		& Andhra Pradesh (project activity)) on dated 10 <sup>th</sup> July 2010.	
CL 23 The PP, in B.7.2 section of the PDD, has stated that the LCS meter does not require calibration. PP to clarify the same.	Table-1 7. u.	We would like to clarify to DOE that all the LCS meter generation data is shared by O&M contractor with PP only to monitor the performance of individual of WEGs on daily basis and there is no impact of LCS data of monitoring of emission reduction.	The project participant does not use the LCS controller data for the purpose of monitoring of the project activity and hence CL 23 is closed.
CAR 1 Procedures to calculate project emissions, baseline emissions, leakage and emission reductions have been provided under section B.6.1 of the PDD. However the Combined Margin Emission Factor mentioned in B.6.1 section of the PDD is not consistent with the B.6.2 & Annex 3 of the PDD.	Table-1 3. p. i	As per the DOE comment the inconsistency in combined margin in section B.6.1 has been removed from revised PDD.	The revised PDD has been submitted by the PP. It is noted that the values of combined margin emission factor used in the relevant sections of the PDD are consistent, hence CAR 1 is closed.
CAR 2 The 3 years vintage period for deducing Operating Margin (OM) mentioned in the B.6.2 section of the PDD is not consistent with years mentioned in the Annex 3 of the PDD.	Table-1 3. q. ii & 3. kk.	Correction has been made in Annex -1 of revised PDD to make the OM & BM period consistent.  Corrections has been made under Annex 3 and appropriately applied	The correction incorporated in the section B.6.2 is now consistent with the Annex 3 of the revised PDD. However the response provided by the PP is not appropriate with respect to 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
		to the other sections of the PDD as well	<p>CAR 2.</p> <p>The revised PDD, version 4.0 has been submitted and the corrections have been checked by the validation team and found to be consistent with information provided in B.6.2 section of the PDD. Hence CAR 2 is closed.</p>
<p>CAR 3</p> <p>a. Information on how the data and parameters that need to be monitored are provided in the PDD, however from the site visit and the office discussions it is noted that the project activity is connected to a common substation where the electricity generated from the WEGs of the project activity and other WEGs which are not the part of this project activity are also supplying electricity. PP is requested to demonstrate how the Net Electricity is being determined.</p> <p>b. The source of data for <math>EG_{BL,y}</math> is not</p>	<p>Table-1</p> <p>3. t. i &amp; 3. t. ii. A</p>	<p>a. Calculation to derive the net electricity supplied to grid by project activity has been added in section B.7.2 of revised PDD.</p> <p>b. <math>EG_{BL,y}</math> is calculated value and</p>	<p>a. The project activity comprises of 8 WEGs however the PDD states that there are 9 Metering points. PP to clarify the same. The procedure for claiming emission reductions if the crediting period starts in between the billing period has been detailed, however PP to provide to more clarity on the same in the revised PDD.</p> <p>b. The revised PDD has been</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
stated in the web hosted PDD.		<p>calculation procedure has been added in section B.7.2 of revised PDD.</p> <p>This to confirm that 8 WEGs of project activity is connected to total 3 cluster metering points at the project site and same has been corrected in PDD.</p> <p>Further in case the date of registration or start date of the crediting period of the project activity does not match with the date of joint meter report or billing cycle, PP will forego the emission reductions for that particular period.</p>	<p>submitted. The information provided in the B.7.2 section of the revised PDD, version 4.0 by the PP illustrates the actual metering procedure at the site and systems engaged to determine the emissions reductions conservatively.</p> <p>The procedure presented in the PDD is found to be achievable and acceptable to the validation team.</p> <p>Hence CAR 3 is closed.</p>
<p>CAR 4</p> <p>The PDD is silent on the Quality Assurance and Quality Control Procedures.</p>	<p>Table-1</p> <p>3. t. iii. c &amp; 7. v. ii &amp; iii.</p>	<p>Quality Assurance and Quality Control Procedures has been added in section B.7.1 &amp; annex -4 of revised PDD.</p> <p>In case both main and check meters are found not to be working</p>	<p>The QA &amp; QC procedures have been detailed in sections B.7.1, B.7.2 and Annex 4 of the revised PDD, hence CAR 4 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
		in the accuracy range during the calibration test, both the meters shall be replaced immediately and the correction will be applied to the consumption registered by the main meter to arrive the correct delivered energy for the billing purpose for the period of one month up to the time of such test check, computation of the delivered energy for the period thereafter till the next monthly meter reading shall be as per the replaced main meter. Same explanation has been added in section B.7.2 & annex 4 of revised PDD.	
CAR 5 The local stakeholder who had put forth their comments are not been identified in E.2 section of the PDD.	Table-1 3. gg.i. & 9. c	Name of the local stakeholder who had put forth their comments have been added in E.2 section of the PDD.	The Minutes of Meeting for both the locations have been submitted. From the MoM it is noted that the names of stakeholders who had put forth there comments during this meeting are the same as mentioned in E.2 section 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>CAR 6</p> <p>The sources and documentary evidence for the information presented in the B.5 section and financial spreadsheet to be provided by the PP.</p>	Table-1 6. c. m.	Sources and documentary evidence for the information presented in the B.5 section and financial spreadsheet has been added in spreadsheet and supporting documents has been submitted to DOE for reference.	<p>PDD. Hence CAR 5 is closed.</p> <p>The sources have been provided and relevant documentary evidence has been submitted by the PP. Hence CAR 6 is closed.</p>
<p>CAR 7</p> <p>(a) In the cashflow sheet of the financial analysis the PP has stated two components under Cash Outflow, PP to justify the basis of arriving at "Increase/(decrease) in Current Assets."</p> <p>(b) The approach adopted by the PP to calculate working capital needs to be explained by the PP.</p> <p>Normally only concerns which have a manufacturing activity/ trading activity and which are supposed to maintain stocks would have a working capital requirement. Here, a working capital is</p>	Table-1 6. c. q	<p>(a) &amp; (b):</p> <p>We would like to submit to DOE that according to the supplier's offer, PP need to pay the O&amp;M expenses quarterly in advance to the O&amp;M contractor and there is billing cycle of 30 days, since PP need to pay the repay the loan and to full fill other expenses there is requirement of working capital. Working capital has additional financial implications on the project and hence needs to be considered in the investment analysis. Based on the above requirements PP has considered the WC in P&amp;L</p>	<p>(a) The PP's approach to calculate the increase/decrease in Current Assets is based on the working capital which has to be capitalized for power projects. The same approach has been taken by the PP in computation of the IRR which is acceptable to validation team.</p> <p>(b) The approach adopted by the PP to calculate working capital has been provided.</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>envisaged which is the sum total of the last month receivables and the O &amp; M expenditure is calculated. Though as per accounting norms, these are classified as current assets, they do not signify any capital requirement and hence working capital loan requirement here cannot be substantiated. In order to secure a working capital loan, there has to be a working capital gap in the balance sheet as on that date. But in this case, since the cash profits accumulated for the earlier 11 months will be available. The WCG would not be there and hence no scope for working capital loan and consequently the outgo towards interest on working capital loan may not be there.</p>		<p>of investment analysis.</p> <p>Increase/Decrease in current assets requires the PP to supplement the investment by the amount of working capital. If the requirement of this additional capital is not adjusted, the cash flow will be overestimated and hence the project IRR will not be true. Therefore we have considered it appropriate to consider adjustment of the current asset in computing cash flow.</p> <p>Working Capital can be funded by debt or internal accruals (equity). Cost of debt is less than cost of equity and therefore cost of debt is used for fulfilling WC requirement.</p> <p>We will like to state that working capital interest has not been accounted in the spreadsheet (refer 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>(c) It is observed that Surcharge has not accounted for Income tax calculations.</p> <p>(d) The calculation of O &amp; M cost is not correct with reference to the expected commissioning date and proposal submitted by Enercon India Ltd.</p>		<p>spreadsheet). They are accounted under increase/decrease in current asset under the cash flow.</p> <p>(c) Surcharge is not applicable for Limited Liability partnerships companies and therefore is not included in the investment analysis. (<a href="http://www.llponline.in/tax_llp.php">http://www.llponline.in/tax_llp.php</a>)</p> <p>(d) O&amp;M is free for first year i.e FY 2011. The project was expected to be commissioned as per offer letter on 30 Sep 2010. Therefore PP has to pay for O&amp;M starting from 01 October 2011. However for simplicity of calculation, O&amp;M cost has been considered from 01 April 2012 i.e. no O&amp;M cost is considered from 30 Sep 2010</p>	<p>(c) The PP's approach to not account surcharge in Income Tax calculations is acceptable, since as per the applicable laws surcharge is not applicable to Limited Liability partnerships.</p> <p>(d) The approach adopted by the PP to calculate the O&amp;M expenses is acceptable to the validation team.</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
(e) It is observed that the tariff cost has been taken Rs.3.50 / unit but the PP may have to include 5% electricity tax also.		<p>till 31 Mach 2012.</p> <p>(e) The electricity tax is applicable to the consumers and not generators (except for third party sale). Therefore this has not been included in the analysis.</p> <p>The provision of application of electricity duty can be found at <a href="http://www.aponline.gov.in/Quick%20Links/Departments/Energy/RTI%20Act/functions%20of%20department.html">http://www.aponline.gov.in/Quick%20Links/Departments/Energy/RTI%20Act/functions%20of%20department.html</a>.</p>	<p>(e) PPA has been submitted which clearly states that project activity generates and supplies electricity to grid. The response provided by the PP is acceptable, however the PP is requested to provide the source / documentary evidence which states that electricity tax is not applicable to generators.</p> <p>Based on satisfactory response and documentary evidence, CAR 7 is closed.</p>

**Appendix B: COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS**

<b>Sr. No.</b>	<b>Details of the commenter</b>	<b>Date of Comment</b>	<b>Comment [unedited]</b>	<b>Response by project participant</b>	<b>Explanation on how account is taken by DOE</b>
1.	Submitted by: Sud	Between 01/07/2011 to 30/07/2011	DOE to be more careful so that this is a genuine CDM project. What is the exact project cost? The project cost is covering what? Each value considered must be validated with proof. The machinery is second hand purchased or fresh and new from an OEM? In either case DOE to check all the quotations, proposals, purchase orders, invoices, way bills, transport bills, proof of payments like bank statements. DOE to check with banks by way of written confirmation the amount transacted, to whom the money is paid, when the money is paid, is the party paid is the correct party as shown in the purchase orders. It may so happen that the values, party names, dates are fabricated and misrepresented in this project. DOE should terminate their contract for this project immediately. This is the only	Copy of Supplier offer, Purchase order, O&M contract and other supporting documents have been submitted to DOE for verification.	The validation team has reviewed the original offer letter and purchase order, and has discussed how the values used in IRR were assessed and accepted in the preceding sections of this validation report.



## VALIDATION REPORT

<b>Sr. No.</b>	<b>Details of the commenter</b>	<b>Date of Comment</b>	<b>Comment [unedited]</b>	<b>Response by project participant</b>	<b>Explanation on how account is taken by DOE</b>
			way out to protect the value of CDM process. If the PP is purchasing second hand or second quality equipment and inflating the purchase order values and invoices, this must be probed thoroughly and real values to taken for additionality calculation. Then I'm sure the additionality is not there at all in such a situation.		
2.	Submitted by: Sud	Between 01/07/2011 to 30/07/2011	How is the base line defined in this project? Is Base line hypothetically defined with no proper evidences and proper justification? In such case, DOE cannot take the base line as suggested by the PDD. Please check that there are real emission reductions beyond the real and factual base line. It may so happen that this project qualifies for no CER's. DOE cannot assume values and things as giving by this PP. Whatever values are considered throughout the project in all documents including the real DPR (not the one prepared for	Baseline selection has been done based on the latest tool & guidelines available. PP has used AMS.I.D. Version 17.0 to determine the baseline. As per paragraph 10 of applied methodology- "The baseline scenario is that the 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 into the grid". Detailed explanation on	The baseline has been defined the methodology itself. Hence the validation team is of the opinion that the selection of baseline by the Project Participant to be appropriate.




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<b>Sr. No.</b>	<b>Details of the commenter</b>	<b>Date of Comment</b>	<b>Comment [unedited]</b>	<b>Response by project participant</b>	<b>Explanation on how account is taken by DOE</b>
			CDM, the one given to the banks and others), they must be validated, verified and double checked. Do not ask PP for DPR. Ask the parties who have been given DPR by the PP. Get directly from the bank and others by each page of the DPR and Feasibility report signed. Such document can be considered as a real DPR or FR. UNFCCC CDM process cannot be degraded by fabricating and misinterpreting the project base line and additionality.	baseline selection has been provided in PDD.	
3.	Submitted by: Sud	Between 01/07/2011 to 30/07/2011	Has the PP considered the CDM revenues while envisaging the project? Without CDM the project was not viable, is it right? This project is having a debt component? Then how bankers or lenders gave the loan? Have the bankers or lenders considered the CDM revenues while agreeing to give loan to this project? If not this project should be rejected right away by DOE by terminating the contract forthwith. If yes, where is	CDM revenues were considered by PP while envisaging the project activity. Certified true copy of Board Resolution has been submitted to DOE for reference. The project is funded through 100% equity and certified CA certificate has been submitted to DOE for reference.	The comment is not appropriate in the context of the proposed CDM project activity, since the funding of this project activity is entirely based on internal accruals /equity of the firm.



## VALIDATION REPORT

<b>Sr. No.</b>	<b>Details of the commenter</b>	<b>Date of Comment</b>	<b>Comment [unedited]</b>	<b>Response by project participant</b>	<b>Explanation on how account is taken by DOE</b>
			<p>the proof? What is the date of the evidence document from bank? Is this document printed now a day or earlier? DOE to independently check the same. If the document is available from Bank it must be checked from all angles so that it is genuine and not forged and date changed by putting back dated. This is normally done, DOE to be aware of this please. Please check the communication the PP had during that time with banks, emails and postal receipts and the weights and dates mentioned on the receipts. Do not believe in courier bills and receipts since these can be cooked up easily. Insist on government owned postal service receipts only. If the project is fully equity project then on what basis the PP has invested full equity in to the project while considering the CDM revenue? DOE to check the same in detail and bring out the facts. Is there any past record of</p>		



## VALIDATION REPORT

<b>Sr. No.</b>	<b>Details of the commenter</b>	<b>Date of Comment</b>	<b>Comment [unedited]</b>	<b>Response by project participant</b>	<b>Explanation on how account is taken by DOE</b>
			this PP to invest or not to invest at returns what he is talking about in this project? Proper evidences must be reviewed and digged out by the DOE and take decision on the project based on established facts. Do not ask documents from PP, DOE to collect the same from different sources to do independent evaluation.		
4.	Submitted by: Sud	Between 01/07/2011 to 30/07/2011	Is the project equipment purchased second hand equipment or sourced from cheap foreign sources? If yes, the issue must be probed by DOE since invoices will invariably be inflated and forged. Total project costs mentioned by PP will not be the same as originals. Hence no additionality. These facts must be probed in full by DOE by checking all documents and money transactions along with bank statements and certified accounts by a legally acceptable financial analyst.	Project equipments are new one and supplied by Enercon. Purchase order has been submitted to DOE for verification.	From the Purchase Order and Physical verification of the site it is confirmed that the WEGs are new not second hand.



## VALIDATION REPORT

<b>Sr. No.</b>	<b>Details of the commenter</b>	<b>Date of Comment</b>	<b>Comment [unedited]</b>	<b>Response by project participant</b>	<b>Explanation on how account is taken by DOE</b>
5.	Submitted by: Sud	Between 01/07/2011 to 30/07/2011	From DOE side which auditor has done marketing and business development for acquiring this business of validating this project? With whom he or she was co-ordinating at PP or CER buyer? The same person who has done the marketing and business development to acquire the business do validation or participate in any manner what so ever in the validation process? One cannot do like that. It is against the accreditation rules and norms followed since ages. DOE should send auditors from different offices or countries to do this validation audit. DOE must take care of impartiality and accreditation rules. Due to the targets set by the DOE managements auditors are doing marketing and meeting clients and giving promises that the project will be taken care. Is it acceptable and fair? This must be stopped. No auditor should do marketing. Only	Comment is addressed to DOE.	The team involved in marketing and validation team is different and probability of conflict of interest has been addressed by the DOE's internal systems & procedures.



## VALIDATION REPORT

<b>Sr. No.</b>	<b>Details of the commenter</b>	<b>Date of Comment</b>	<b>Comment [unedited]</b>	<b>Response by project participant</b>	<b>Explanation on how account is taken by DOE</b>
			non-auditing staff should do marketing. DOE to ensure the same please.		
6.	Submitted by: Sud	Between 01/07/2011 to 30/07/2011	DOE to ensure that the PDD values are consistent and ensure that the CDM project is a genuine project	All the supporting documents towards the verification of input parameters have been submitted to DOE.	Explanation of how the input values have been checked and accepted has been detailed in the preceding sections of this validation report.
7.	Submitted by: Sud	Between 01/07/2011 to 30/07/2011	DoE to check the Detailed Project Report and Feasibility Report which is submitted to the other agencies and Banks by Project owner and ensure that the values match with the DPR/FR submitted to DoE also.	Project is 100% equity financed project. All the supporting documents towards the verification of input parameters have been submitted to DOE.	Not applicable to the context of the proposed project activity, however explanation of how the input values have been checked and accepted have been detailed in the preceding sections of this validation report.
8.	Submitted by: Sud	Between 01/07/2011 to 30/07/2011	Careful study must be done so that the DPR/FR is not in different versions made and submitted with different purposes to different agencies, which is totally unacceptable, illegal and unethical.	All the supporting documents towards the verification of input parameters have been submitted to DOE.	Not applicable to the context of the proposed project activity, however explanation of how the input values have been checked and accepted have been detailed in the preceding sections of this validation report.


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<b>Sr. No.</b>	<b>Details of the commenter</b>	<b>Date of Comment</b>	<b>Comment [unedited]</b>	<b>Response by project participant</b>	<b>Explanation on how account is taken by DOE</b>
9.	Submitted by: Sud	Between 01/07/2011 to 30/07/2011	Project owner should show some undertaking letter from bank manager to DoE stating that both DPR's are same. These kinds of letters should not be accepted and entertained by DoE at face value, but must be checked independently. While collecting the DPR/FR from banks and other agencies, all DPR/FR pages should be counter signed by Banks and other agencies so that the real DPR/FR given to other parties by the PP/Consultant is same as the one submitted to DOE.	Project is 100% equity financed project hence comment is not relevant for the project activity. All the supporting documents towards the verification of input parameters have been submitted to DOE.	The comment is not appropriate in the context of the proposed CDM project activity, since the funding of this project activity is entirely based on internal accruals /equity of the firm.
10.	Submitted by: Sud	Between 01/07/2011 to 30/07/2011	DPR/FR values must be probed fully. DOE must take a written undertaking from the PP/Consultant about the list of parties to whom this DPR/FR is submitted and for what purposes. Then DOE should cross check with all the parties and confirm that the same DPR/FR is submitted to all the parties correctly without any changes. DOE must not	All the supporting documents towards the verification of input parameters have been submitted to DOE.	Explanations of how the input values have been checked and accepted have been detailed in the preceding sections of this validation report.


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VERITAS**

## VALIDATION REPORT

<b>Sr. No.</b>	<b>Details of the commenter</b>	<b>Date of Comment</b>	<b>Comment [unedited]</b>	<b>Response by project participant</b>	<b>Explanation on how account is taken by DOE</b>
			accept any reports and undertakings from PP/Consultant. DOE must make independent evaluation and use totally different parties without informing the PP or Consultant to cross check the facts.		
11.	Submitted by: Sud	Between 01/07/2011 to 30/07/2011	DOE to write to the party who prepared the DPR/FR which is submitted to the banks and other agencies and the same is verified against the one submitted to the DOE by PP/Consultant.  DOE must not entertain this project any more if found the DPR/FR is tampered with at any point in time. PP can not give different DPR's and FR's. They must submit only the one given to Banks and other agencies while obtaining loans and decision making time.	Project is 100% equity financed project. All the supporting documents towards the verification of input parameters have been submitted to DOE.	Explanations of how the input values have been checked and accepted have been detailed in the preceding sections of this validation report.
12	Submitted by: : Karthikeyan	Between 01/07/2011 to	DOE should not only get a declaration on 100% equity finance for the project from the PP but	Project is 100% equity financed project and certified statement of chartered	For ascertaining, the same the Project Participant has made available the certificate dated



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		30/07/2011	should also check the annual accounts of the firm to see whether there is any borrowing.	accountant has been submitted to DOE for verification.	28/09/2011 of M/s. Mehul Vora & Co, who is a qualified Chartered Accountant, which confirms that the project is funded 100% by internal accruals of the company. The same has been accepted by the validation team.
13	Submitted by: : Karthikeyan	Between 01/07/2011 to 30/07/2011	When APERC has recommended PLF of 24.5%, on what basis the projects have taken 23.8% PLF. DOE should check the actual generation before accepting the PLF of 23.8%	Sensitivity analysis has been done on PLF to cover the APERC recommended PLF of 24.5% and same has been incorporated in PDD. Further actual generation reports have been submitted to DOE for further reference.	The project participant has considered the same and has subjected the PLF to the APERC tariff order PLF also, even in this scenario the IRR remains below the benchmark. The validation team also checked the actual generation and it was noted that the PLF was 22.37% which was lower than the projected PLF in the PDD.
14	Submitted by: : Karthikeyan	Between 01/07/2011 to 30/07/2011	None of the manufacturer's charge more than 5% escalation. Enercon itself has charged only 5% escalation in the case of recently registered project No. 3350. DOE	PP has taken the input parameters from the supplier offer available at the time of investment decision. Though PP has done the sensitivity	The validation team has considered the same and found that the escalation of O&M charges have been derived from the Offer Letter





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			should not accept this escalation	analysis on the escalation of O&M cost.	which was available to the Project Participant at the time of decision making.
15	Submitted by: : Karthikeyan	Between 01/07/2011 to 30/07/2011	DOE should check the purchase order and take the cost as per purchase order and should not blindly go by offer letter	Copy of purchase order has been submitted to DOE for verification.	The validation team has checked the offer letter and purchase order. The detailed description of the assessment is provided in section 3.7.3 of this validation report.
16	Submitted by: : Karthikeyan	Between 01/07/2011 to 30/07/2011	Why does the company want working capital? What is the capital blocked to generate power? Other than O&M cost, no funds are blocked.	We would like to submit to DOE that according to the supplier's offer, PP need to pay the O&M expenses quarterly in advance to the O&M contractor and there is billing cycle of 30 days, since PP need to pay the repay the loan and to full fill other expenses there is requirement of working capital.	The same has been addressed in section 3.7.3 of this validation report.
17	Submitted by: : Karthikeyan	Between 01/07/2011 to 30/07/2011	The project's start date is 10/07/2010. Therefore, it should have started operation before March 2011. Hence, the investment will be in the same year as the start	Investment analysis has been done based on the same approach mentioned in GSH comment.	The comment is valid and a similar approach has been adopted in the IRR computation by the project participant. The same has



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			of operation. DOE should deduct the investment from the cash generation of the first year in computing IRR.		been accepted by the validation team.