



VALIDATION REPORT

VISH WIND INFRASTRUCTURE LLP

VALIDATION OF THE

GRID CONNECTED WIND ENERGY GENERATION AT ANDHRA PRADESH

REPORT NO. INDIA -VAL/414.49/2012

REVISION No. 01

BUREAU VERITAS CERTIFICATION

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VALIDATION REPORT

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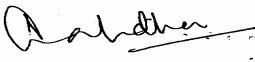
Summary:

Bureau Veritas Certification has made the validation of the "Grid Connected Wind Energy Generation at Andhra Pradesh" of Vish Wind Infrastructure LLP located in Nallakonda & Thummalpenta villages of Anantapur and Kurnool Districts in Andhra Pradesh State, India and 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 ACM0002 and version 12.2.0 and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.

Report No.: INDIA-val/414.49/2011	Subject Group: CDM
Project title: Grid Connected Wind Energy Generation at Andhra Pradesh	
Work carried out by: Mr. Bhavesh Prajapati – Team Leader Mr. V. Senthil Kumar – Team Member Mr. S. Thyagaraj – Team Member	
Internal Technical Review carried out by: Mr. H. B. Muralidhar 	
Date of this revision: 14/03/2012	Rev. No.: 01
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Work approved by:

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 “Grid Connected Wind Energy Generation at Andhra Pradesh” (hereafter called “the project”) at Nallakonda & Thummalpenta villages of Anantapur and Kurnool Districts in Andhra Pradesh State, 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
Verifier	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
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



Technical Specialist	Not Applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI
Financial Specialist	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
Internal Technical Reviewer (ITR)	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
Specialist supporting ITR	Not Applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI

*DR = Document Review; SV = Site Visit; RI = Report issuance

2 METHODOLOGY

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

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

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

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

2.1 Review of Documents

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

To address Bureau Veritas Certification corrective action and clarification requests, Vish Wind Infrastructure LLP revised the PDD and resubmitted it on 17/02/2012.



The validation findings presented in this report relate to the project as described in the PDD version 4.0 /P1/.

2.2 Follow-up Interviews

On 26/08/2011 and 27/08/2011 Bureau Veritas Certification performed 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) were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Vish Wind Infrastructure LLP	<ul style="list-style-type: none"> ➤ Project conceptualization, ➤ CDM consideration, ➤ Additionality, ➤ Operational aspects and Management Structure, ➤ Project Design Document, ➤ GHG emission reduction calculations, ➤ Application of Baseline and Monitoring Plan.
Local Stakeholder	<ul style="list-style-type: none"> ➤ Views and Concerns about the Project Activity. ➤ Confirming that Vish Wind Infrastructure LLP had conducted a formal Stakeholder Consultation Meeting.
Enercon (India) Limited (O & M Contractor)	<ul style="list-style-type: none"> ➤ Operation & Maintenance Arrangements.

2.3 Resolution of Clarification and Corrective Action Requests

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

Corrective Action Requests (CAR) is issued, where:

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



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

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

2.4 Internal Technical Review

The validation report underwent 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 Requests and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in Appendix A. The validation of the project resulted in 10 Corrective Action Requests (CARs) and 16 Clarification Requests (CLs) and no Forward Action Request (FAR).

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

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

3.1 Approval (VVM Paragraph - 49-50)

India, a party to the Kyoto Protocol, is the Host Party for the proposed CDM project activity. There are no other Host Parties involved in this project activity. M/s. Vish Wind Infrastructure LLP (VWILLP), on 10/01/2012 received the Letter of Approval (LoA) /P2/ from the Ministry of Environment and Forest (MoEF), which is the Designated National Authority (DNA) for the Host Party, India. The copy of (LoA) with Project ID No: 730/08/2011, with reference no. 4/29/2011-CCC dated, 10/01/2012 was submitted to the validation team. The validation team confirmed the authenticity of the approval from the DNA's website http://www.cdmindia.in/approved_projects.php /B1/. The information available on the website confirms the approval of the project activity by the Host Party DNA. The Letter of Approval clearly states that India has ratified the Kyoto Protocol and that the approval is for voluntary participation in the CDM project activity. The DNA approval mentions the same project title as mentioned in the PDD. Also, the letter of approval mentions the project activity contributes to sustainable development in the Host Country.

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 (LoA) 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 letters are in accordance with paragraphs 45 - 48 of the VVM, Version 01.2, EB 55 /B13/.

3.2 Participation (VVM Paragraph - 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/>.

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 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: 730/08/2011. The validation team concluded this by reviewing the Letter of Approval (LoA) Ref no: 4/29/2011-CCC dated 10/01/2012 /P2/, which describes that the participation of M/s. Vish Wind Infrastructure LLP being approved by the Host Party DNA (Government of India).

3.3 Project design document (VVM Paragraph - 57)

The validation team has compared the revised PDD (version 4.0) with the latest PDD form /B3/ and guidance documents for completion of a PDD /B4/.

The Project Design Document of the project activity titled "Grid Connected Wind Energy Generation at Andhra Pradesh" has been prepared using the latest PDD format and as per the latest guidelines for completing the project design document, version 7.0 /B4/, which is available on the UNFCCC website http://cdm.unfccc.int/Reference/Guidclarif/pdd/PDD_guid04.pdf

The validation team hereby confirms that the PDD complies with the latest forms and guidance documents for completion of PDD. The PDD is as per Guidelines for Completing the Project Design Document (CDM-PDD) (EB 41, Annex 12) /B4/.

3.4 Changes in the Project Activity

The final PDD version 4.0 /P1/ has the following changes as compared to PDD version 1.0 /P5/, which was webhosted for the Global Stakeholders' Comments:

1. The entities to which generated electricity will be supplied and sold to has been included in the section A.2 section of the PDD;
2. Substation name has been added in the section A.4.1.3 of the PDD;



3. The version and applicability conditions in the revised PDD are now updated to meet the requirements of ACM0002, Version 12.2.0, EB 65.
4. The sources and references of the assumptions made in the section B.5 of PDD are provided;
5. The benchmark in the Final Version of PDD is 17.78%, which has been arrived during the course of validation. The benchmark as per the webhosted PDD was 18.46%.
6. The common practice analysis explained in the Section B.5 of the PDD has been updated with reference to the latest "Tool to demonstrate and assessment of additionality, version 6.0.0";
7. Section B.7.1 of the PDD has been updated to indicate the correct measurement methods and QA & QC procedures;
8. Section B.7.2 of the PDD has been updated to demonstrate the actual QA & QC procedures which would be adopted at project site;
9. The entity responsible for performing the calibration of energy meters has been updated in section B.7.2 of the revised PDD;
10. Section E.1 of the PDD has now included the names of the stakeholder who had put forth there comments during the local stakeholders consultation meeting;

3.5 Project description (VVM Paragraph - 64)

The project activity involves the installation of 26 WEGs (Wind Energy Generators) at the project location, where there have been no WEG installations earlier. The WEGs are of Enercon make – E 53 Model and each WEG is of 800 kW capacity. The total installed capacity of project activity is 20.80 MW.

The proposed CDM project activity is expected to generate approximately 40.10 GWh of electricity per year. 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 (National Grid) of India. 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) /B5/ and would have led to higher GHG emissions.

The validation team undertook a visit to the site on 26/08/2011 and 27/08/2011. The validation team noted that the installation of wind energy generators have spread across two locations / sites namely Narmada Site, Anantapur District and Krishna Site, Kurnool District.



At Narmada Site, it was observed that the wind farm is divided into 13 locations and was named as EN1, EN2, EN 3, EN4, EN5, EN6 upto EN13. The WEGs of project activity are proposed to be situated in location nos: EN1 (14 WEGs) & EN3 (6 WEGs) and EN 4 (4 WEGs). The letter from equipment supplier /P6/ confirming the location of individual WEGs for the two sites has been submitted to the validation team.

The wind farm at Kurnool (Krishna Site) is divided into 7 locations and was named as EK1, EK2, EK 3, EK4, EK5, EK6 and EK7. The WEGs of project activity were commissioned and situated in location no: EK2 (2 WEGs).

The team also visited Enercon's pooling sub-stations site at Shahpuram, Anantapur District and Ankireddypalli, Kurnool District to verify and confirm 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-stations i) Shahpuram Pooling Substation for Narmada Site, Anantapur District and ii) Ankireddypalli Pooling Substation for Krishna Site, Kurnool District over a 33 kV transmission line. The electricity received at this pooling station is further transmitted to the State Electricity Board's transmission lines and injected to state utility company's substations at Hindupur (Kurnool) and Gooty (Anantapur). The validation team confirms that the power evacuation arrangements described in the PDD are implemented. The grid connection of the project activity was also validated by reviewing the Power Purchase Agreement /P7/ for the two WEGs at Krishna Site (Kurnool District) between the project participant and Central Power Distribution Company of Andhra Pradesh Limited (APCPDCL).

Based on the assessment of documents and physical verification during validation site visit, the validation team was able to confirm that the project activity is a Greenfield project and comprises of the installation of 26 new WEGs, which would constitute to a total installed capacity of 20.80 MW. At the time of the site visit, the validation team noted that only two WEGs at location no EK 2, Krishna Site (Kurnool District) were erected and not commissioned. During the course of validation the two WEGs were commissioned and the commissioning certificates were made available to the validation team. Based on the commissioning certificate /P8/ and Purchase orders of WEGs /P9/ the validation team is able to ascertain that the proposed CDM project activity is a new grid connected power project.

Although actual information pertaining to the remaining 24 WGEs in Narmada Site (Anantapur District) are not available (as the erection & commissioning are yet to be commenced), there could be a similar expectation for these remaining 24 WEGs also, since



- i) the generation capacities of all WEGs at these two locations are the same and
- ii) Moreover, the Equipment Supplier and WEG model are also the same for both the locations;
- iii) During its visit to the 2 sites at Narmada (Anantapur District) and Krishna (Kurnool District), the validation team observed that the conditions at each of these sites were also more or less similar.

The validation team hereby confirms that the project description in the revised PDD /P1/ is accurate and complete in all respects and that there are no changes to the project activity/design or boundary as compared to the webhosted PDD.

3.6 Baseline and monitoring methodology

3.6.1 General requirement (VVM Paragraph 76-77)

The proposed Project Activity “Grid Connected Wind Energy Generation at Andhra Pradesh” uses the previously approved baseline and monitoring methodology ACM 0002, Version 12.2.0 /B6/. At the time of webhosting the PP had applied ACM 0002, Version 12.1.0 /B7/.

Initially in the webhosted PDD /P5/, the justification provided for the applicability conditions of approved applied methodology were not clearly illustrated. Hence, the validation team raised corrective action request CAR 4.

The project participant in response to CAR 4 incorporated necessary changes in section B.2 of the PDD and provided justification on how the conditions are relevant and applicable in the context of the project activity.

The revised PDD was submitted to the validation team. The corrections incorporated in the revised PDD were checked and found to be satisfactory, hence CAR 4 was closed. The steps taken to assess the relevant information contained in the PDD against the applicability conditions, as stated in applied baseline and monitoring methodology ACM 0002, Version 12.2.0, are described below:

Applicability Condition: This methodology is applicable to grid-connected renewable power generation project activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield 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).



Validation Justification: The proposed CDM project activity involves installation of 26 WEGs, each of 800 KW capacity. The validation team has reviewed the Purchase orders /P9/ issued by the project participant, Power Purchase Agreement /P7/ for 2 WEGs (1.60 MW = 800kW * 2Nos.) at Krishna Site (Kurnool District) between the project participant and APTRANSCO and commissioning certificate /P8/. In addition to above, the validation team also verified the grid connection during site visit by visiting the substations. Based on the above assessment, the validation team confirms that the proposed CDM project activity is a grid connected renewable power generation project based on wind energy. Hence, this applicability condition is fulfilled.

Applicability Condition: *The project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, wave power plant/unit or tidal power plant/unit.*

Validation Justification: The purchase orders /P8/ issued by the project participant, M/s. Vish Wind Infrastructure LLP, to M/s. Enercon (India) Limited for the supply, erection and commissioning of wind energy generators (02 in Nos.) and from the physical verification at site indicates that the proposed CDM project activity involves installation of wind energy generators alone and therefore is a new renewable energy project. The purchase order and physical verification at the site confirms that the wind energy generators are new and are not transferred. The project activity is located on a leased land where no renewable power plant was operated prior to the implementation of the proposed CDM project activity and is therefore classified as Greenfield project. Hence, this applicability condition is fulfilled.

Applicability Condition: *In the case of capacity additions, retrofits or replacements (except for wind, solar, wave or tidal power capacity addition projects which use Option 2: on page 11 to calculate the parameter $EG_{PJ,y}$): the existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.*

Validation Justification: From the Purchase Order and the physical verification at the site it is confirmed that the project activity is not a retrofit or replacement of older wind energy generators with new wind energy generators. Based on the physical site visit, and documentary evidence, the validation team is able to confirm that the project activity is



a new Greenfield project and not a capacity addition. Hence, this applicability condition is not relevant to the proposed CDM project activity.

Applicability Condition: *In case of hydro power plants, one of the following conditions must apply:*

- *The project activity is implemented in an existing reservoir, with no change in the volume of reservoir, or*
- *The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/m²; or*
- *The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m².*

Validation Justification: The above mentioned criterion is not applicable to the proposed CDM project activity, since the project activity is wind energy based power project and not a hydro power project.

Applicability Condition: *The methodology is not applicable to the following:*

- *Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site;*
- *Biomass fired power plants;*
- *Hydro power plants that result in new reservoirs or in the increase in existing reservoirs where the power density of the power plant is less than 4 W/m².*

Validation Justification: As described in above applicability conditions, the proposed CDM project activity is wind energy based power project and hence this condition is not relevant to the proposed CDM project activity.

Applicability Condition: *In the case of retrofits, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is the continuation of the current situation, i.e to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance.*

Validation Justification: The clause no. 8 of approval obtained from approval from Non-Conventional Energy Development Corporation of Andhra Pradesh Limited¹, Government of Andhra Pradesh /P10/ dated

¹ Currently – New Renewable Energy Development Corporation of Andhra Pradesh Limited



20/06/2011 clearly states that “No second hand or used wind turbines, imported from abroad or procured locally shall be installed”.

Physical verification at the site confirmed that the project activity is not an add up of a renewable and non-renewable component and only wind energy generators are involved in the project activity having capacity total of 20.80 MW, which classifies as a large scale project activity (> 15 MW). The project activity does not involve switching from fossil fuels to renewable energy sources at the project activity site nor is a biomass fired power plant, but is only a wind energy based electricity generation project.

In addition to the applicability conditions of the applied baseline and monitoring methodology, the methodology also refers to the applicability of the tools referred in the applied methodology /B6/. The assessment of the applicability of the tools applied by the project activity as referred by the applied baseline and monitoring methodology, ACM0002, version 12.2.0 is as per followings:

Tool to Calculate the Emission Factor for an Electricity System, EB 65, Annex 19, version 02.2.1 refers to the following:

The tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity, i.e. where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid.

The proposed CDM project activity involves installation of new wind energy generators and supply of electricity to the grid (southern regional grid of India). The methodology prescribes the grid as the baseline and the baseline emissions are calculated for the substitution of the electricity which would have been otherwise produced by the power plants in an electricity system / grid.

The project participant has applied to latest tool for calculating emission reductions and has derived values for the same from the CO₂ Baseline Database of Central Electricity Authority (CEA). The CEA CO₂ Baseline Database has calculated the Operating Margin (OM) & Build Margin (BM) and the Combined Margin (CM) emission factor for the southern regional grid determined by, India.

The Project Participant has applied the weighted average CM method where by the two emission factors pertaining of the electricity system/ system viz., OM and BM for determining the CM. The default value of weights for $W_{OM} = 0.75$ and $W_{BM} = 0.25$ (wind & solar projects) has been applied to derive the CM for the southern regional grid.



The validation team, based on the above described assessment, is able to conclude that the tool selected, which is prescribed by the approved applied baseline and monitoring methodology is applied correctly and appropriate to the proposed CDM project activity.

The selected baseline and monitoring methodology, ACM 0002, Version 12.2.0., /B6/ is previously approved by the CDM Executive Board. The validation team hereby confirms the applicability of the applied baseline and monitoring methodology to the proposed CDM project activity.

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

3.6.2 Project boundary (VVM Paragraph - 80)

The spatial extent of the project boundary as illustrated in the PDD covers the Wind Energy Generators of the project activity, pooling substations 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 grid¹, 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 from the site visit was able to confirm that the proposed CDM project activity is located at two locations / sites namely: i) Nallakonda Village (Narmada Site) of Anantapur District & ii) Thummalapenta village (Krishna Site) of Kurnool District and 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 Shapuram (for 24 WEGs in Anantapur) and at Ankireddypalli (for 02 WEGs in Kurnool). The electricity is further transmitted in to the substations of

¹ APTRANSCO is the Electricity Transmission company of the Government of Andhra Pradesh state in India



southern regional grid located at Gooty and Hindupur, which is owned and operated by Central Power Distribution Company of Andhra Pradesh Limited (APCPDCL)¹, which forms the part of Southern Regional Grid of India. The validation team has also reviewed the Power Purchase Agreement /P7/ and 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 CO₂, the consideration of only CO₂ 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 provided by the technology supplier /P11/, noted that the technology supplier who is also the manufacturer and responsible for the operation & maintenance of the WEGs, has confirmed that the operational lifetime of the WEG is 20 years. Based on the physical verification during site visit and from the purchase orders /P9/ confirmed that all the project WEGs (including 02 WEGs which were erected and commissioned during the course of validation) are new. The validation team also checked the Annex 15 of EB 50 "Tool to determine the remaining lifetime of equipment" /B8/ 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 (Nallakonda Village of Anantapur District & Thummalapenta village of Kurnool District, Andhra Pradesh State, 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 CO₂. 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.

¹ One of Andhra Pradesh's distribution and supply companies



3.6.3 Baseline identification (VVM Paragraph 87-88)

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

Validation team assessed the baseline identification by the project participant using the provisions of the applied methodology. As per the applied methodology ACM 0002, version 12.2.0, the baseline for a new grid connected renewable power plant /unit (Greenfield project) is defined as 'Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system". The project participant has used the official published data from the Central Electricity Authority on operating margin and builds margin emission factors /B9/. The version of the data used is version 6, which was available on the start date of validation viz; webhosting of the PDD for global stakeholders' comments. This data is published by Central Electricity Authority (CEA), which is the sole government authority for the publication of such data in host country, 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 /B14/. 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 0.9172 tCO₂/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 Gooty and Hindupur substations, which are 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 adopted to determine the OM emission factor, BM emission factor and CM emission factor 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 ACM0002, version 12.2.0. 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 (VVM Paragraph 92-93)

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

As per Part II – Baseline Methodology Procedure of the applied baseline methodology ACM0002, version 12.2.0, if the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is *“Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the .Tool to calculate the emission factor for an electricity system”*.

The proposed CDM project activity involves new wind (renewable) energy based grid connected power plants. Hence, the project participant has calculated the baseline emissions by multiplication of the net electricity supplied by the project activity to the grid and the combined margin emission factor for the grid. The detailed algorithms are transparently described under sections B.6.1 and applied in section B.6.3 of the revised PDD /P1/, version 4.0, to calculate the baseline emissions.

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

$$BE_Y = EG_{p,j,y} * EF_{grid,CM,y}$$

where,

BE_y = baseline emissions

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

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

Further to the above mentioned equation, the project participant has considered the $EG_{P,J,y} = EG_{facility,y}$ (where the $EG_{facility,y}$ is Quantity of net electricity generation supplied by the project plant/unit to the grid in year y). This is in accordance with the equation 7 of the applied baseline and monitoring methodology. This is found to be appropriate as the proposed



CDM project activity is the installation of a new grid-connected renewable power plant.

The project participant has considered the project emission and leakage emissions to be zero in the proposed CDM project activity. The validation team has found this to be in accordance with the applied baseline and monitoring methodology ACM0002, version 12.2.0. The applied methodology clearly states that for the most of the renewable power generation project activity, $PE_y = 0$. Some of the project activities that may involve the project emission are Hydro power plant and geothermal power plant along with projects, which involve consumption of fossil fuel. The proposed CDM project activity is neither hydro power plant nor geothermal power plant. Further, the operation of the proposed CDM project activity does not require use of any fossil fuel as the project activity is wind energy based power generation. Hence, it is correct and appropriate to consider the project emissions and leakage emissions as zero.

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 = Emission reductions from the project activity

PE_y = Project emissions from the project activity

LE_y = Leakage emissions from the project activity

Since, there are neither project emissions nor leakage emissions involved in the proposed CDM project activity it is correct to present the emission reduction as $EG_{P,J,y} = EG_{facility,y}$. Thus the algorithms used for the calculations of the baseline emissions and hence emission reductions are found to be correct and in accordance with the applied baseline and monitoring methodology ACM0002, version 12.2.0, which is also appropriate to the type of the proposed CDM project activity.

Validation team assessed the calculations of estimated emission reductions as provided by project participant in a spreadsheet /P12/. The assumptions in this spreadsheet are validated as follows –

Parameter, Value	Source of information	Validation justification
Project Capacity, 20.80 MW	Purchase Order	The project capacity is as per the documents verified. The technical parameters in the purchase orders indicate /P9/ the same capacity for the equipment ordered. Hence, accepted by



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		the validation team.
Numbers of WEGs, 26 Nos (each of 800 kW)	Purchase Order	The number of WEGs is as per the documents verified (Purchase Order) /P9/. Hence the validation team has accepted this value.
Plant Load Factor, For Anantapur Site: 22.00% For Kurnool Site: 21.80%	Third Party Report	The PLF has been sourced from the third party assessment conducted by M/s. True Wind International Certification /P13/. This is in accordance with Annex 11 of EB 48 and hence accepted by the validation team.
Baseline Emission Factor for Southern Regional grid, 0.9172	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 exported to the grid.

The estimated annual average of emission reductions of approximately 36,738 tCO₂e and 367,380 over the 10 year crediting period, the calculation represents a reasonable estimation using the assumptions considered by the project participant in the revised PDD. All the assumptions for this estimate are derived from the relevant assumptions used for investment analysis and 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 /P12/ for calculations of emission reductions.

Based on the above assessment, the DOE hereby confirms that:

- All assumptions and data used by the project participants are listed in the PDD, including their references and sources are provided;
- All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD;
- 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 (VVM Paragraph - 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 (VVM Paragraph - 104)

The start date of this project activity is 02/04/2011 /P9/. 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 energy 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 /P9/ for the procurement of wind energy generators on 02/04/2011. The validation team verified the original Purchase Order documents and confirms that 02/04/2011 can be regarded as the “start date” of the project activity.

The start date of the proposed CDM project activity is 02/04/2011, which is after 2nd August 2008. The CDM-EB provides guidelines on the demonstration and assessment of the prior consideration of CDM [EB 62 Annex 13] /B10/. 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
01/04/2011	Consideration of the CDM in the Minutes of the Meeting of board of directors of Vish Wind Infrastructure LLP	Board Resolution dated 01/04/2011 /P14/. This has been further verified by reviewing original MOM of board meeting dated 01/04/2011.



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02/04/2011	Purchase Order placed on Enercon (India) Limited for the supply of WEGs	Purchase order /P9/ dated 02/04/2011
28/05/2011	Appointment of Bureau Veritas Certification (India) Private Limited.	Signed proposal dated 28/05/2011
28/06/2011	Submissions of Prior Consideration of the CDM form dated 28/06/2011 /P11/ notifying the commencement of the project activity and the intention to seek CDM status to UNFCCC and Indian DNA.	Email along with the form sent on 28/06/2011 /P12/

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
02/04/2011	<p>Date of Purchase order 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 same from the document /P7/ 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 and Host Party: 28/06/2011 /P12/, which are within 6 months from the start date of the proposed CDM project activity.</p>

From above table, the validation team was able to verify that the start date of the Project determined, as 02/04/2011 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] /B10/ (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 27 July 2011 to 25 August 2011, and the validation team has assessed the project participant’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 28/06/2011. This was verified by reviewing the Prior consideration of the CDM form dated 21/06/2011 submitted to NCDMA /P16/. The validation team also reviewed the original email communication at the project participant’s terminal during office discussions to confirm the submission of the prior consideration form to NCDMA.
- 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 28/06/2011. 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

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

The project activity is Greenfield project and there is no historical information available on the project timeline.

3.7.2 Identification of alternatives (VVM Paragraph - 107)

The approved baseline and monitoring methodology ACM 0002, version 12.2.0 prescribes the baseline for new grid connected renewable power



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

Hence as per paragraph 105 of VVM manual ver 1.2 which, states that in case the approved methodology that is selected by the proposed CDM project activity prescribes the baseline scenario, then no further analysis of alternatives is required. Since the applied methodology, ACM 0002, version 12.2.0, it self prescribes a pre-defined baseline scenario; no further analysis on identification of alternatives is required.

3.7.3 Investment analysis (VVM Paragraph - 114)

The project participant has demonstrated the additionality of the project activity using the investment analysis, as stated in Step 2 of the latest version of the additionality tool /B11/.

The proposed CDM 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 proposed CDM 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) /B12/.

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, hence an investment comparison analysis is not appropriate. 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 found to be correct and appropriate in accordance with the paragraph 19 of Annex 5 of EB 62 and Para 112 (a) of VVM /B12/.

Validation of Input Parameters:

Before reviewing the post tax equity IRR calculations /P17/, the validation team attempted to validate the basic input parameters listed in the web hosted PDD in accordance with Para 114 (a) 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-5. In response to the CAR-5, 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-5.

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.

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

Parameter	Value used	Source of value	Validation justification
Project Capacity in MW	20.80	WEG supplier offer dated 22 March 2011	The validation team has verified the project capacity by reviewing the original proposal submitted by WEG (technology) supplier dated 22/03/2011 /P19/. The proposal was available before the date of decision i.e. 01/04/2011 and hence appropriate. The capacity of the project activity was also cross checked with the Purchase Order /P9/ and found to be correct, Hence, accepted by the validation team.
Number of WEGs	26	WEG supplier offer dated 22 March 2011	The validation team has verified the numbers of WEGs by reviewing the original proposal submitted



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			by WEG (technology) supplier dated 22/03/2011 /P19/. The proposal was available before the date of decision i.e. 01/04/2011 and hence appropriate. The numbers of WEGs forming the project activity was also cross checked with the Purchase Order /P9/. The validation team found the number of WEGs consistent with above-mentioned documents and hence, accepted.
Total Project Cost (Million INR)	1,234.22	WEG supplier offer dated 22 March 2011	The validation team has verified the total cost of project by reviewing the original proposal submitted by WEG (technology) supplier dated 22/03/2011 /P19/. The proposal was available before the date of decision i.e. 01/04/2011 and hence appropriate. The total cost of project was also cross checked with the Purchase Orders vide reference no: VWILLP/11-12/25 and VWILLP/11-12/29 /P9/ and it was noted that the actual cost is 3.88% 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 value of the project cost as appropriate.
Plant Load Factor : For Anantapur	22.00%	Third Party PLF Assessment	The value of the PLF has been sourced from the third party PLF assessment report

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Site: For Kurnool Site:	21.80%	Report	conducted by Ravi Enteck Ltd /P13/. The validation team has reviewed the third party PLF report and found that the data used for the assessment of PLF was from 01 st April 2006 to 01 st April 2009. 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 Annex 11 of EB 48 and as per paragraph 110 of VVM 01.2. 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 22 March 2011	Based on the proposal /P19/, the operation & maintenance charges have been taken as 1.30% of the total project cost, which when calculated works out to be INR 0.617 Million per WTG. 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 consistent with each other. The O & M charge has been subjected to sensitivity analysis, details of the same is provided in the sensitivity analysis section of this validation report.
Escalation of O & M cost per annum	6%	WEG supplier offer dated 22 March 2011	Based on the proposal /P19/, the year on year escalation on operation & maintenance charge has been taken as 6% which is applicable from 2 nd year onwards. The proposal of technology



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			<p>supplier was submitted to the validation team. The information available in the proposal and financial analysis spread sheet were checked and found to be consistent.</p> <p>The validation team also reviewed the APERC tariff order, which was available at the time of decision making, where the escalation on O & M cost is mentioned as 5%. Hence, the validation team conducted an independent IRR assessment to check the impact of 5% escalation on O & M cost instead of 6%. The validation team found that the IRR with 5% year on year escalation on O & M cost comes out to be 7.70%, which is 0.1% higher than the IRR calculated with 6% year on year escalation. Thus, the change in escalation in O & M cost from 6% to 5% does not impact the additionality of the proposed CDM project activity as the IRR is well below benchmark even with 5% escalation in O & M cost.</p> <p>The validation team is of the opinion that since, the project participant has conducted the financial analysis based on the techno-commercial proposal, the use of proposal as a source of escalation in O & M cost is well justified.</p>
Insurance cost as % of capital cost	0.12%	Insurance Quote	The initial quote offered by the Insurance Company M/s. United India Insurance Co. Limited, dated 03/03/2011 was submitted to the



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			validation team. The same was checked by validation team and found to be matching with value taken in the financial analysis sheet.
Tariff (Rs./Kwh)	3.50	As per APERC tariff order 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 tariff order /P20/ was made available to the validation team. From the tariff 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, 17/12/2011 /P7/ 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 as Rs. 3.50 per kWh. This is matching with the value considered in Investment Analysis.</p>
Escalation in Tariff up to 10 years	Nil	As per APERC tariff order dated 01/05/2009	The APERC tariff order dated 01/05/2009 has been reviewed by the validation team. The team observed in the APERC tariff order /P20/ that the escalation in tariff upto 10 years is mentioned as nil. The escalation is also cross checked with the Power Purchase Agreement /P7/. It could be the assessed that the escalation has not been considered up to 10 years. Hence, the validation team has accepted the Nil

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			escalation upto 10 years.
Escalation in Tariff from 11 th year onwards	Nil	Assumed	The APERC order has not indicated any escalation after 11 th year which was cross verified with the Article 2, clause 2.2 of power purchase agreement. However, the escalation will be calculated based on the cost plus approach and the same works out to be lower than the initial tariff rate. Hence, the validation team has accepted the Nil escalation from 11 th year onwards.
Salvage Value	10%	Companies Act 1956	The project participant has sourced the salvage value based on the Sections 205 & 350 in the Schedule XIV of the Companies Act 1956. The weblink /P21/ for the same has been provided to the validation team. It is noted that asset can be depreciated upto 95% of the capital cost. The project participant has taken book depreciation upto 90%, which is more conservative and in accordance with Paragraph 4 of Guidelines on the Assessment of Investment Analysis /B12/. Hence the validation team concluded that the salvage value applied is accurate and appropriate.
Income tax depreciation rate (Written down value method)			
Income tax depreciation rate	80%	Income Tax Act	80% value has been considered based on the Section 32, Rule 5 (1), Appendix I of Indian I T Rules 1962. The validation team has accepted this value as the same is in accordance with accounting principles of



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			the Host Country and Guidelines for the assessment of investment analysis.
Additional depreciation	20%	Income Tax Act	Additional 20% according to Section 32 of I.T. Act. The validation team has accepted this value as the same is in accordance with accounting principles of the Host Country and Guidelines for the assessment of investment analysis.
Book depreciation rate (Straight Line Method)			
Book depreciation rate on all assets	4.50%	Companies Act, 1956	The rate of depreciation is as per the Schedule XIV of companies act, 1956 /P22/. 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 /P21/ for the same has been provided. It is noted that asset can be depreciated upto 95%. The project participant has taken book depreciation upto 90%,



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			which is more conservative and in accordance with Paragraph 4 of Guidelines on assessment of Investment Analysis /B12/. Hence the validation team concluded that the value applied is accurate and appropriate.
Income Tax Rates			
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 ¹ /P22/. The information is available on the public domain; the same was checked and found to be acceptable to the validation team.
AMT	19.05%		The applicable tax as per the Indian Union Budget for the FY 2009-10 as for Partnership Firms ² /P22/.

The project participant had not considered any escalation in the power tariff in the investment analysis. The validation team requested the project participant to clarify why no such escalation was considered. The validation team raised CL 9 for the same.

In response to CL 9, 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 /P20/ 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 tenth 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 9 was closed. The detailed justification for not considering escalation from 11th

¹ <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>

² <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>



year onwards is provided in Table 2 of Appendix A of this validation report.

The Indian Union Budget FY 2010-11 as per section 184 of the Income Tax has exempted Limited Liability Partnership (LLP)¹ from paying Minimum Alternate Tax. The information is available on the public domain which was checked and it was noted that the information was applicable to the project participant at the time of decision making. However, as per the requirement, the LLPs are liable to pay Alternate Minimum Tax (AMT) of 19.05%. The project participant has considered the Alternate Minimum Tax (AMT) in accordance with the accounting principles of the host country for the Limited Liability Partnership (LLP) companies, which is appropriate and correct.

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 are in line with the requirement of Paragraph 111 (b) of VVM.

Validation of Post Tax Equity IRR calculations:

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. In addition, additional 20% depreciation can be taken as per section 32 of IT Act. So the project participant has taken 100% in first year itself. Income tax has been considered at 30.90% as per the Indian Income Tax Act. The validation team hereby confirms that the project participant has applied all the statutory levies and taxes as per the 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. The project participant is exempted from paying tax as book profit is negative for the first year and carry forward loss is for first ten years. For the next consecutive five years there is no liability to pay tax at the corporate income Tax rate @ 30.90% since the project participant 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

¹ <http://indiabudget.nic.in/ub2010-11/bs/speecha.htm>



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”. This is in compliance with the local accounting principles and results in conservative calculations also.

The tax holiday can be availed of not beyond the 15th year from the year of commencement of operations of the project activity. After the 15th 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 10th year, where the 1st year the project incurs losses and in the subsequent 9 years the actual tax payable has been considered. Even though Alternate Minimum Tax is applicable to the PP, the maximum of between the two (corporate and AMT) is considered for the computation during this period is considered, which is conservative. This approach is acceptable to the validation team since the losses are carried forwarded from 2nd year to 10th 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 2009-10¹. 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

¹ indiabudget.nic.in/ub2009-10/bh/bh1.pdf



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. Karthikeyan & 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 /P23/ by the financial expert for their 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 CL 14 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, hence CL 14 was closed.

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 7.60%.

Benchmark (112)

The project participant has used the post tax equity IRR as the financial indicator for demonstrating the additionality of the proposed CDM project activity using investment analysis. The cash flow in the IRR is computed based on 100% equity investment.

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 /B12/ 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.

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

The project participant has 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) /B11/. The nominal benchmark was computed based on the default value of Cost of Equity of Host Country under Group I category (Utility sector group industries = average historical returns) along with the forecasted inflation rate of the host country. The validation team notes that the equity return for a country and for any group of industry is equal to real rate of return on US treasury long term bonds + Equity Risk Premium + discount/premium for the group of industry + Additional risk of investing in an emerging economy. The default values are based on long term excepting for country risk premiums,

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 5.40% (Reserve Bank of India Forecast)

Based on the above approach and corresponding values, the cost of equity (benchmark) is worked out to be 17.78% /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 4 previous investment decisions by the project participant. The validation team noted that the benchmark adopted for demonstrating additionality is used consistently i.e. Cost of equity has been used as benchmark in all the projects tabulated below:

Sl no.	Title	Capacity	Status	UNFCCC Ref no ¹
1	Renewable Energy Wind Power Project in Karnataka	6.40 MW	Registered CDM project	4956
2	Wind power project in Tirunelveli Tamilnadu	8.40 MW	Registered CDM project	4846
3	Bundled Wind Power Project in Jamnagar, Gujarat	9.60 MW (6.40 of Vish Wind LLP and 3.20 MW of other PP)	Registered CDM project	4964
4	Clean Energy generation from wind energy in the state of Andhra Pradesh	6.40 MW	Submitted for Request for Registration	5821

The validation team was able to conclude the uniformity of the benchmark (Cost of Equity) used by the Project Participant in the context of decision making and type of investment. The information with respect to 4 projects listed above is available on the UNFCCC website.

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 Cost of Equity. Hence the PP's approach to use the same benchmark in the current context (proposed CDM project activity) is acceptable to the validation team.

¹ <http://cdm.unfccc.int/Projects/projsearch.html>

**Conclusion:**

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

The post tax equity IRR for the investment of the project works out to be 7.60%. The Post Tax Equity IRR values are lower than the benchmark of 17.78%. 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.

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%) for the above stated parameters could be considered as reasonable in the context of the project activity, for the following reasons:

Capital Cost: At the start of validation, the purchase orders for the supply of equipments were not issued. The capital cost was subjected to two variations of +10% (increase) and -10% (decrease). The probability of reduction (by 10%) is unlikely and the same was concluded by the



validation team from purchase orders which were made available during the course of validation. From the purchase order it is noted that the capital cost / total project cost is 3.88% lower than the estimated cost considered in the IRR calculations, hence there no probability of project cost going down by (-10%). The capital cost being 10% higher than the estimated cost is also not possible since the purchase orders have already been placed on the equipment supplier during course of validation and the PP is obliged to pay the agreed on cost.

The post tax equity IRR under above mentioned two scenarios (+10 & -10%) will remain below the benchmark.

Plant Load Factor: The PLF is deduced from the third party PLF Report as 22.00% at Narmada Site (Anantapur District) and 21.80% at Krishna Site (Kurnool District) /P13/ respectively. 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 same is the result when 10% decrease in PLF is considered.

Additionally the validation team checked Andhra Pradesh Electricity Regulatory Commission's (APERC) tariff order dated, 01/05/2009 /P20/, 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 22.00% for Narmada Site (Anantapur District) and 21.80% for Krishna Site (Kurnool District) which were less than the APERC PLF. Even though the PLF prescribed is for the entire region (Andhra Pradesh State) the validation team raised CL 9 (a) and PP was requested to subject the sensitivity up to 22.50% for Narmada Site PLF and up to 23.62% for Krishna Site which would cover the 10% of sensitivity of the PLF based on APERC order i.e. 24.50%.

Based on CL 9 (a) the PP subjected the PLF of the respective sites up to 24.50% with 10% variation, the Post Tax equity IRR remained below the benchmark. The validation found the approach adopted by the PP to be satisfactory and acceptable.

Based on the satisfactory response CL 9 (a) was closed successfully.

Power tariff: The PP has subjected the power tariff to +10% & -10% variations. The probability of reduction or increase of the power tariff by 10% is not possible in current context of the project activity since the Power Purchase Agreement (PPA) has been signed at the fixed rate (Rs.3.50 per kWh) for the first ten years which is determined by Andhra Pradesh Electricity Regulatory Commission (APERC). The state utility is bound to pay the agreed tariff.



For the tariff from 11th year the Andhra Pradesh Electricity Regulatory Commission (APERC) would determine a new rate which presently cannot be envisaged by the PP. Hence an approach of 10% variation (increase) in tariff over the technical life time of project activity is found to be conservative and agreeable to the validation team.

Even with variations of +10% & -10% the IRR (post-tax) still remains below the benchmark.

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	9.45%	7.60%	6.06%
PLF	6.22%	7.60%	8.88%
O&M Expenses	7.83%	7.60%	7.57%
Tariff	6.22%	7.60%	8.88%
Benchmark	17.78%		

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 17.78%.

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 7.60%.



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 does not cross the benchmark adopted. Based on assessment as per the requirements of paragraph 111 (e) of VVM 01.2, 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)

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

3.7.5 Common practice analysis (121)

The common practice analysis in the webhosted PDD was not conducted as per the requirements of tool to demonstrate additionality; hence the validation team raised CL 10. In response to the CL 10, the PP corrected the common practice discussions to meet the requirements of Sub step 4a and 4b of the additionality tool.

The Project participant has used the following criteria's for common practice analysis –

1. India (Host Country) has been considered as the default region;
2. Based on the different regulatory framework policy regime and investment climate, projects only in Andhra Pradesh State have been considered for the further analysis;
3. Wind projects in Andhra Pradesh State with the capacity of above 15 MW by a single investor with no upper scale limit and projects which were implemented at the time of decision are considered for the analysis;
4. Projects which are under the CDM pipeline are excluded as per the guidance provided by the tool for demonstration and assessment of additionality;
5. Projects implemented post the 31/03/2010 have not been considered;
6. Projects implemented prior to the year 2000 are excluded from analysis;

The details for this analysis have been derived from Indian Wind Power Directory, 2010, 10th Edition /P24/. In this 10th edition of the directory the details of project were captured up to 31/03/2010, hence the same period range (01/01/2000 to 31/03/2010) was used for the analysis.



The Tool for Demonstration and Assessment Additionality, Version 06.0.0, has defined the entire Host Country as the default geographical area for the analysis. The PP has selected India (Host Country) and further based on the criteria defined above has selected Andhra Pradesh (state) Region for common practices analysis. The PP approach to select Andhra Pradesh region where project activity is located is acceptable to the Validation team, since the regulatory and tariff policies in India with respect to the renewable energy projects (including wind based power projects also) vary from state to state in the Host Country. Each individual state has its own regulatory tariff orders and offers different incentives to wind power project developers. Therefore, the regulatory environment for the investment in wind based power plants would be comparable only at the state level. The approach adopted by the PP meets requirement of Sub step 4a of the Tool for Demonstration and assessment of additionality, version 06.0.0, Annex 21, EB 65.

The project activities with more than 15 MW installed has been considered in the common practice analysis. This ensures that the comparison is done with projects of similar scale and nature. The risk factors associated with projects of this scale (above 15 MW) would be similar in nature.

The projects which are implemented post year 2000 has been considered in the common practice analysis by the PP. The PP's selection of projects post year 2000 (start date of CDM project activity - 01 January 2000) is justifiable since it is in line with the Glossary of CDM terms. The approach to consider projects post year 2000 is acceptable to the validation team.

As per the common practice analysis conducted by the project participant, there were 02 wind power projects of owners/company and comprised of large which were commissioned and in operation as on 31/03/2010. The outcome of analysis of 02 projects is presented below:

2 Large Scale projects;

- 01 Large Scale Project registered as a CDM Project Activity – 50.40 MW of Vaayu (India) Power Corporation Private Limited
- The remaining 01 Large Scale project (20 MW by RCI Power Limited) has not been considered due to the different policy regime.

Why 20 MW wind power project by RCI Power Limited is not considered is as follows:

The project was completed in the year 2001¹. The Andhra Pradesh Electricity Regulatory Commission (Andhra Pradesh government) passed

¹ www.retscreen.net/download.php/da/33/3/WIND04-C.pdf

the order for Determination of Tariff / Power Purchase Price in respect of “New Wind Based Power Projects” on 01/05/2009.

The copy of above mentioned order was made available to the validation team and following are the observations and conclusions on why to the 20 MW Wind Power Project of RCI Power Limited was not considered for analysis is present and discussed below:

SI No.	Description	Prior to year 2009	Present	Remarks
1.	Tariff	Rs. 2.25 per kWh (in the year 1994-95) Rs. 3.37 per kWh (in 2004)	Rs. 3.50 per kWh	Different preferential tariff rates for different time periods.
2.	Escalation in Tariff	5% (In 1994-95 & 2004)	Nil	The tariff has been fixed for the first 10 year period. Applicable to PPA's signed between 01-05-2009 to 31-03-2014
3.	CDM Sharing	No	Yes – 90:10	Developer 90% and DISCOM gets 10%

The PP's approach not to include 20 MW wind power project of RCI Power Limited is acceptable to the validation team, since the project falls under different policy and tariff regime (1994-95). It may not be comparable with the proposed CDM project activity due to different tariff and policy regime.

The above approach is acceptable to the validation team since, the above meets the requirement as stated in sub step – 4a, paragraph 44 of “Tool for Demonstration and Assessment of Additionality” /B11/ which states “Projects are considered similar if they are in the same country/region and/or rely on a broadly similar technology, are of a similar scale, and take place in a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing, etc.

Since all the large scale projects in Andhra Pradesh State (region) under the consideration have seriously sought CDM related benefits to make the project viable. There are no further large projects for comparison, hence



sub step 4b of Tool for the demonstration and assessment of additionality” is not applicable.

The comparative common practice analysis carried out by the PP was submitted to the validation team. The PP’s categorization of above 15 MW with a single investor as the criteria for analysis is acceptable to the validation team. Since the risk factors associated with projects of this scale (above 15 MW) would be similar in nature but may not be same when project is being developed by multiple developers or owners.

The validation team checked the Indian wind power directory of 2010, 10th Edition to ascertain the list of projects in the state of Andhra Pradesh. From the directory it was confirmed that the 02 large scale projects mentioned in the comparative analysis were correctly quoted. The Indian Wind Power Directory is widely accepted and used in the wind energy segment. The validation team accepts that the Indian Wind Power Directory as a credible and reliable source, which was used for deriving data for the analysis.

The validation team also accessed the UNFCCC website and was able to confirm for the period up to 31/03/2010 the total large scale wind power projects in Andhra Pradesh was 01 in number (1 registered CDM project, titled: “Vaayu India Wind Power Project in Andhra Pradesh” vide reference no. 4667) which was inline with the no. of projects mentioned in the PDD.

Based on the above assessment the validation team has been able to confirm that the information provided in the comparative analysis by the PP has been deduced from reliable sources and public domain (websites) which can be clearly validated. The project related information provided in the comparative analysis by the PP is correct and accurate.

The validation team hereby confirms that the common practice analysis has been performed as per the sub-step 4a & 4b of Tool for Demonstration and Assessment of Additionality, Version 06.0.0, Annex 21, EB 65. The validation team based on the assessment is able to confirm that the proposed CDM project activity is not a common practice in the Andhra Pradesh region.

3.8 Monitoring plan (124)

The Project activity uses the approved consolidated monitoring methodology ACM 0002, Version 12.2.0.

The steps taken to assess whether the monitoring arrangements described in the monitoring plan are feasible within the project design are described below. Validation team considers the monitoring plan to be



complying with the requirements of the applied baseline and monitoring methodology for the following reasons –

1. According to the applied monitoring methodology, there is only one variable that a windmill project needs to monitor, i.e., EG_y , the net electricity supplied to the grid by the proposed CDM Project Activity.
2. $EF_{grid,CM,y}$, the emission factor is fixed ex-ante based on CEA database, Version 6. This is in line with the tool to calculation emission factor for an electricity system, which is as per the requirement of the applied monitoring methodology.
3. Project participant has provided provision for monitoring these parameters and for electronic archiving of the monitored data. This is stated in Section B.7.2 of the revised PDD.
4. Project participant has provided for archiving the data for 2 years beyond the crediting period or last issuance whichever is later.
5. The monitoring plan includes requirements for calibration of the energy meters, used for monitoring the project activity variable, EG_y , annually.

The parameter, “Quantity of net electricity supplied to the grid in year y” 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 calculated by:

$$EG_{PJ,Y} = EG_{EXPORT,Y} - EG_{IMPORT,Y}$$

Where:

$EG_{EXPORT,Y} = EG_{JMR,EXPORT,Y} \times (1 - T_E)$ = Gross Export calculated based on the total export values recorded at 33 kV cluster metering points and adjusted for transmission losses,

$EG_{IMPORT,Y} = EG_{JMR,IMPORT,Y} \times (1 - T_E)$ = Gross Import calculated based on the total import values recorded at 33 kV cluster metering points and adjusted for transmission losses,

T_E = Total percentage of transmission loss for export between the metering point at 33 kV metering points and the metering point at 132 kV at the Enercon pooling substations at Shapuram and Ankireddypally

The project participant 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, 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-stations with a bulk metering point at 132 kV at Ankireddypalli (Kurnool District) & Shahpuram (Anantapur District). State utility calculates the net electricity supplied to



the grid at the 132 kV Enercon substations at Ankireddypalli (Kurnool District) & Shahpuram (Anantapur District) by apportioning of transmission loss to the meter reading recorded at the 33 kV at Narmada Site (Anantapur District) EN1 (14 WEGs) & EN3 (6 WEGs) and EN 4 (4 WEGs) and at Krishna Site (Kurnool District) EK 2 (2 WEGs).

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 and 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:

- How the net electricity would be determined, Data management processes, QA & QC procedures, etc. had not been explained and hence the validation team raised corrective action request [CAR 7]. The procedure for data collection and archiving had also 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 project participant in reply to the above mentioned findings has incorporated the following changes in the revised PDD version 4.0,

- 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 of the meters. The meters are designated to be of accuracy class 0.2s. 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.

Having reviewed the above corrections, the validation team closed CAR 7.

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 with reference no 4/29/2011-CCC dated 10/01/2012 from DNA of India (Host Party). 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 08/06/2011.

The local stakeholder consultation meeting was held at on 24/06/2011 at Krishna Site, Kurnool District and 25/06/2011 at Narmada Site, 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 5, 6 and 7, requesting the project participant to clarify the same. The revised PDD submitted on 16/12/2011 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 5, CL 6 and CL 7 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> /P25/. 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 using methodology ACM 0002 was webhosted on the UNFCCC for global stakeholder comments as per CDM requirements. The project was webhosted from 27/07/2011 to 25/08/2011.

During the comment period a total of 08 comments were received from 01 global stakeholder. The project participant provided response to these comments. Validation team took due account of these comments and the respective responses while making the validation opinion. The details of the comments received, responses by the project participant/s and the explanation of how due account of these is taken by the validation team are attached as Appendix B with this validation report.

5 VALIDATION OPINION

Bureau Veritas Certification has performed a validation of the 'Grid Connected Wind Energy Generation at 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 36,738 tCO₂e emission reductions per annum.

The review of the project design documentation (version 4.0) 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 “Grid Connected Wind Energy Generation at Andhra Pradesh” as a CDM project activity.

6 REFERENCES

Category 1 Documents:

Documents provided by Vish Wind Infrastructure LLP that relate directly to the GHG components of the project.

- /P1/ PDD (Final), Version 4.0, Dt., 17/02/2012
- /P2/ Letter of Approval from the Host Country, Dt. 10/01/2012, Ref no: 4/29/2011-CCC
- /P3/ PDD (revised), Version 03, Dt. 16/01/2012
- /P4/ PDD (revised), Version 02, Dt. 12/10/2011
- /P5/ Webhosted PDD, Version 01, Dt. 10/07/2011
- /P6/ Letter from Equipment Supplier confirming the location & geographical coordinates
- /P7/ Power Purchase Agreement with reference no: PPA No. 04/2011-12, Dt., 17/12/2011
- /P8/ Commissioning certificate for two WEGs, with reference no: Lr.No.DEE/O/NDL/Coml./F.No.Vish Wind/D.No.1262/12, Dated 07/10/2011.
- /P9/ Purchase Order for Krishna Site (Kurnool District) for 2 WEGs (800kW * 2) – VWILLP/11-12/25, Dated, 02/04/2011
- Purchase Order for Narmada Site (Anantapur District) for 24 WEGs (800kW * 24) – VWILLP/11-12/29, Dated, 02/04/2011
- /P10/ Non-Conventional Energy Development Corporation of Andhra Pradesh Limited (NEDCAP) with Ref: NEDCAP/WE/Vish Wind/2011 Dated., 20/06/2011
- /P11/ Undertaking from Equipment Supplier –Enercon India Limited, Dated., 30/08/2011
- /P12/ Emission Reduction Calculation Sheet, Version 1.0, Dt., 10/02/2012
- /P13/ Third Party PLF Report by M/s. True Wind International Certification, Dated., 10/03/2011
- /P14/ Extract of CDM Board Resolution, Dt., 01/04/2011
- /P15/ Email communication sent to UNFCCC and Host Party DNA (MoEF)



- notifying the Prior Consideration of CDM., Dated., 28/06/2011
- /P16/ Prior Consideration of CDM Form, Dt., 21/06/2011
- /P17/ IRR Calculations Sheet, version 1.0, Dt., 12/10/2011
- /P18/ IRR Calculations Sheet, version 2.0, Dt., 20/12/2011
- /P19/ Offer Letter from Enercon (India) Limited, Dt., 22/03/2011
- /P20/ APERC Order for Determination of Tariff / Power Purchase Price in respect of "New Wind Based Power Projects", Dt., 01/05/2009
- /P21/ Schedule XIV of the Companies Act 1956,
URL: <http://asa-india.com/asa/Depreciation%20Rates%20Companies%20Act.pdf>
- /P22/ Indian Union Budget 2010-11
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>
- /P23/ Chartered Accountant Certificate, Dt., 21/02/2012
- /P24/ Indian Wind Power Association – Wind Directory 2010, 10th Edition
- /P25/ Environment Impact Assessment Notification – 2006
URL: <http://envfor.nic.in/legis/eia/so1533.doc>

Category 2 Documents:

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

- /B1/ Host Party DNA's website,
http://www.cdmindia.in/reports_list_details.php?
- /B2/ UNFCCC website, <http://maindb.unfccc.int/public/country.pl?country=IN>
- /B3/ Project Design Document form for Large Scale project activities
http://cdm.unfccc.int/Reference/PDDs_Forms/PDDs/index.html
- /B4/ Guidelines for completing the Project Design Document, Version 07.0, EB 41
- /B5/ Central Electricity Authority:
http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm
- /B6/ Approved Consolidated Methodology, ACM0002, Version 12.2.0
<http://cdm.unfccc.int/methodologies/PAmethodologies/approved>
- /B7/ Approved Consolidated Methodology, ACM0002, Version 12.1.0
<http://cdm.unfccc.int/methodologies/PAmethodologies/approved>
- /B8/ Tool to determine the remaining lifetime of equipment, EB 50, Annex 15.
- /B9/ Central Electricity Authority (CEA): CO₂ Baseline Database, version 6.0
- /B10/ Guidelines on the demonstration and assessment of the prior consideration of CDM, EB 62 Annex 13
- /B11/ Tool for the demonstration and assessment of additionality" (EB65, Version 06.0.0)
- /B12/ Guidelines on the Assessment of Investment Analysis, EB 62, Annex 5
- /B13/ Validation and Verification Manual, Version 01.2 , EB 55, URL:
http://cdm.unfccc.int/Reference/Manuals/accr_man01.pdf



- /B14/ "Tool to calculate the emission factor for an electricity system",
Version 02.2.1
- /B15/ "Tool to calculate the emission factor for an electricity system",
Version 02.0.0

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.

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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: COMPANY CDM PROJECT VALIDATION PROTOCOL

Table 1 Validation requirements based on the Clean Development Mechanism Validation and Verification Manual (Version 01.2) and methodology ACM0002 (Version 12.1.0) and subsequent (version 12.2.0) – “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
1. Approval			COUNTRY A (India)	COUNTRY B		
a. Have all Parties involved approved the project activity?	VVM	44	Letter of Approval from the Host DNA needs to be submitted by the PP	Not Applicable	CL 1	OK
b. Has the DNA of each Party indicated as being involved in the proposed CDM project activity in section A.3 of the PDD provided a written letter of approval? (If yes, provide the reference of the letter of approval, any supporting documentation, and specify if the letter was received from the project participant or directly from the DNA)	VVM	45	Please refer CL 1 above	Not Applicable		
c. Does the letter of approval from DNA of each Party involved:	VVM	45	The Letter of Approval needs to be submitted by the PP.	Not Applicable	(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, the proposed CDM project activity contributes to the sustainable development of the country?	VVM	45.c				
iv. Refers to the precise proposed CDM project	VVM	45.d				


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CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
activity title in the PDD being submitted for registration?						
d. Is(are) the letter(s) of approval unconditional with respect to (i) to (iv) above?	VVM	46	Please refer CL 1 above.			
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				
g. If yes, was verified with the DNA that the letter of approval is authentic?	VVM	48				
2. Participation			PP1 (Vish Wind Infrastructure LLP)	PP2		
a. Have all project participants been listed in a consistent manner in the project documentation?	VVM	51	The Project Participant name is mentioned as "Vish Wind Infrastructure LLP".	Not Applicable	OK	OK
b. Has the participation of the project participants in the project activity been approved by a Party to the Kyoto Protocol?	VVM	51	The PP needs to submit the LoA for this project activity.	Not Applicable	(CL 1)	OK
c. Are the project participants listed in tabular form in section A.3 of the PDD?	VVM	52	Yes, the project participant is listed in tabular form in section A.3 of the PDD.	Not Applicable	OK	OK
d. Is the information in section A.3 consistent with the contact details provided in annex 1 of the PDD?	VVM	52	Yes, the information provided in section A.3 is consistent with the contact details	Not Applicable	OK	OK


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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			provided in annex 1 of the PDD.		
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 sections of the PDD?	VVM	52	Not applicable.	OK	OK
g. Has the approval of participation issued from the relevant DNA?	VVM	53	Please refer CL 1 above.		
h. Is there doubt with respect to (g) above?	VVM	53			
i. If yes, was verified with the DNA that the approval of participation is valid for the proposed CDM project participant?	VVM	53			
3. Project design document					
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 03) and the latest guidance.		
b. Is the PDD in accordance with the applicable CDM requirements for completing the PDD?	VVM	56	Yes, the PDD is in accordance with the applicable CDM requirements of for completing the PDD (Version 05).		
c. In CDM-PDD section A.1 are the following provided?	EB 41	Ann 12			
i. Title of project	EB 41	Ann 12	Yes, the title of project is stated as "Grid Connected Wind Energy Generation at Andhra	OK	OK


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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			Pradesh."		
ii. Current version number and date of document	EB 41	Ann 12	The current version number is given as 01.0 and the date of document is mentioned as 10/07/2011.	OK	OK
d. In CDM-PDD section A.2 are following provided (max. one page)?	EB 41	Ann 12			
i. A brief description of the project activity covering purpose which includes the scenario existing prior to the start of project, present scenario and baseline scenario	EB 41	Ann 12	Brief description of the project activity has been provided.	OK	OK
ii. Explanation on how the GHG emission reductions are effected	EB 41	Ann 12	Explanation on how the GHG emission reductions are effected by the project activity are provided in the A.2 section of the PDD.	OK	OK
iii. The PP's views on the contribution of project activity to sustainable development	EB 41	Ann 12	The PP's views on the contribution of project activity to sustainable development are provided. Under the technological well being section the PP has stated that 2% of CDM revenues would contributed towards the sustainable development as part it's commitment to Host Party DNA. The formal undertaking for the same to be provided by the PP.	CL 2	OK
iv. Are there any changes/modifications compared to the webhosted PDD?	EB 41	Ann 12			
e. In CDM-PDD section A.3 are following provided in the tabular format?	EB 41	Ann 12			
i. List of project participants and parties	EB 41	Ann 12	Yes, the list of PP and Party are provided.	OK	Ok
ii. Identification of Host Party			Government of India, has been identified as the	OK	OK


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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			host party.		
iii. Indication whether the Party wishes to be considered as project participant	EB 41	Ann 12	Yes, the information has been provided.	OK	OK
f. In CDM-PDD section A.4.1 are following provided?	EB 41	Ann 12			
i. Technical description, location, host party(ies) and address as required	EB 41	Ann 12	Yes the same has been provided	OK	OK
ii. Detailed physical location with unique identification of the project activity (eg. Longitude/latitude) – not to exceed one page	EB 41	Ann 12	The physical location with unique identification for individual Wind Energy Generators and approaches to the site (railway station, airport) are presented in the web hosted PDD. The proof for Latitude & Longitude of Individual WEGs needs to be provided. Section A.4.1.4 is spread across more than one page and hence not in accordance with guidance to complete CDM PDD.	CL 3	OK
iii. Are there any changes/modifications compared to the webhosted PDD?	EB 41	Ann 12			
g. In CDM-PDD section A.4.2 is the list of categories of project activities provided?	EB 41	Ann 12	Yes, the category has been provided.	OK	OK
h. In CDM-PDD section A.4.3 are following provided?	EB 41	Ann 12			
i. A description of how environmentally safe and sound technology, and know-how, is transferred to the Host Party(ies)	EB 41	Ann 12	Description of how environmentally safe and sound technology, and know-how, is transferred to the Host Party(ies) has been provided but the same is not in line with Guidelines for Completing the PDD.	CAR 1	OK
ii. Explanation of purpose of project activity with	EB	Ann			


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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
scenario existing prior to the start of project, scope or present activities and the baseline scenario.	41	12			
iii. List and arrangement of the main manufacturing/production technologies, systems and equipments involved.	EB 41	Ann 12	<p>The list and arrangement of the main manufacturing / production technologies, systems and equipments involved has been provided in web hosted PDD but the no. of WEGs mentioned in the Section A. 4. 3 are not matching with the no. of WEGs mentioned in the section A. 2 section of the web hosted PDD.</p> <p>The description provided in last paragraph of the section A.4.3 of the web hosted PDD is not in accordance with CDM PDD completing guidance.</p>	CAR 2	OK
iv. The emissions sources and GHGs involved	EB 41	Ann 12	There are no emission sources and GHG emissions involved in this project activity.	OK	OK
v. Are there any changes/modifications compared to the webhosted PDD?	EB 41	Ann 12			
i. In CDM-PDD section A.4.4 is the estimation of emission reductions provided as requested in a tabular format?	EB 41	Ann 12	The estimation of emission reductions is provided in tabular format. But the time duration mentioned in the table of A. 4.4 and B. 6. 4 section of the PDD are not consistent.	CAR 3	OK
j. In CDM-PDD section A.4.5 is Information regarding Public funding provided?	EB 41	Ann 12	Information is provided.	OK	OK
k. In CDM-PDD section B.1 are following provided?	EB 41	Ann 12			


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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. The approved methodology and version number	EB 41	Ann 12	Approved methodology ACM0002 with Version 12.1.0 – “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” has been used by the PP	OK	OK
ii. Any methodologies or tools which the above approved methodology draws upon and their version number	EB 41	Ann 12	The following tools applicable to this project with their version are provided in the PDD: 1. Tool to calculate the emission factor for an electricity system (Version 02.2) 2. Tool for the demonstration and assessment of additionality (Version 5.2, EB39)	OK	OK
I. In CDM-PDD section B.2 are following provided?	EB 41	Ann 12			
i. Justification of the choice of methodology that the project activity meets each of the applicability conditions	EB 41	Ann 12	First paragraph of the section B.2 i.e. justification of choice of the methodology is not in accordance with the applied baseline and monitoring methodology. The justification of the choice of methodology has been provided, but the justification of the project activity meeting each of the applicability conditions has not been provided in the PDD.	CAR 4	OK
ii. Documentations with references that had been used. This can be provided in Annex 3 instead	EB 41	Ann 12	No the documentation references have not been provided.	CAR 5	OK
m. In CDM-PDD section B.3 are following provided?	EB 41	Ann 12			
i. Description of all sources and gases included in	EB	Ann	The information has been provided.	OK	OK


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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
the project boundary in the table	41	12			
ii. A flow diagram of the project boundary physically delineating the project activity	EB 41	Ann 12	Flow diagram of the project boundary physically delineating the project activity has been provided.	OK	OK
iii. The flow diagram with all equipments, systems and flows of mass and energy etc	EB 41	Ann 12	Not Applicable		
n. In CDM-PDD section B.4 are following provided?	EB 41	Ann 12			
i. Explanation how the most plausible baseline scenario is identified in accordance with the selected baseline methodology	EB 41	Ann 12	The approved methodology ACM 0002 version 12.1.0 prescribes the baseline as "Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources". But the description provided in the PDD is not in line with the approved applied baseline and monitoring methodology.	CAR 6	OK
ii. Justification of key assumptions and rationales	EB 41	Ann 12	The justification of key assumptions and rationales are provided in the B.4 section of the PDD.	OK	OK
iii. Transparent illustration of all data used to determine the baseline scenario (variables, parameters, data sources, etc.)	EB 41	Ann 12	The data used for determining the baseline emissions have been transparently illustrated in the B.4 section and Annex 3 of the PDD.		
iv. A transparent and detailed description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed project activity	EB 41	Ann 12	The description has been provided in the PDD which is inline with the approved methodology.	OK	OK
v. Are there any changes/modifications compared to the webhosted PDD?	EB 41	Ann 12			



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
o. In CDM-PDD section B.5 are following provided?	EB 41	Ann 12			
i. Explanation of how and why this project activity is additional and therefore not the baseline scenario in accordance with the selected baseline methodology	EB 41	Ann 12	B.5 section provides the explanation of how and why the project activity is additional.	OK	OK
ii. Justification of key assumptions and rationales	EB 41	Ann 12	The justification of key assumptions and rationales are provided in the PDD.	OK	OK
iii. Transparent illustration of all data used to determine the baseline scenario (variables, parameters, data sources etc)	EB 41	Ann 12	The applied approved methodology prescribes grid as the baseline and data used is provided.	OK	OK
iv. Evidence that the incentive from the CDM was seriously considered in the decision to proceed with the project activity, if the starting date of the project activity is before the date of validation	EB 41	Ann 12	The detailed discussion has been presented in the B.5 section of the PDD. The detailed discussions on how the CDM was considered is provided in the B.5 section.	OK	OK
p. In CDM-PDD section B.6.1 are following provided?	EB 41	Ann 12			
i. Explanation as to how the procedures, in the approved methodology to calculate project emissions, baseline emissions, leakage emissions and emission reductions are applied to the proposed project activity	EB 41	Ann 12	Explanation has been provided in the B.6.1 section.	OK	OK
ii. Equations used in calculating emission reductions.	EB 41	Ann 12	The equations have been correctly quoted and applied.	OK	OK
iii. Explanation and justification for all relevant methodological choices, including different scenarios or cases, options and default values	EB 41	Ann 12			
q. In CDM-PDD section B.6.2 are following	EB	Ann			



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
provided?	41	12			
i. A compilation of information on the data and parameters that are not monitored throughout the crediting period but that are determined only once and thus remains fixed throughout the crediting period AND that are available when validation is undertaken	EB 41	Ann 12	The operating margin, build margin and combined margin emission factor have been fixed ex-ante for the ten year (fixed) crediting period.	OK	OK
ii. The actual value period	EB 41	Ann 12	10 years	OK	OK
iii. Explanation and justification for the choice of the source of data	EB 41	Ann 12	The data is sourced from Central Electricity Authority (CEA), the justification for the same has is provided in the PDD.	OK	OK
iv. Clear and transparent references or additional documentation in Annex 3	EB 41	Ann 12	References for the source of data has been provided.	OK	OK
v. Where values have been measured, a description of the measurement methods and procedures (e.g. which standards have been used), indicated the responsible person/entity having undertaken the measurement, the date of measurement(s) and the measurement results	EB 41	Ann 12	Not applicable	OK	Ok
r. In CDM-PDD section B.6.3 are following provided?	EB 41	Ann 12			
i. A transparent <i>ex ante</i> calculation of project emissions, baseline emissions (or, where applicable, direct calculation of emission reductions) and leakage emissions expected during the crediting period, applying all relevant equations provided in the approved	EB 41	Ann 12	Paragraph 11 of ACM 0002, version 12.1.0 has the following equation: $ER_y = BE_y - PE_y$, the same equation has been used in the PDD.	OK	OK


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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
methodology					
ii. Documentation how each equation is applied, in a manner that enables the reader to reproduce the calculation	EB 41	Ann 12	Please refer the CL1 above.		
iii. Additional background information and or data in Annex 3, including relevant electronic files (i.e. spreadsheets)	EB 41	Ann 12	Background information is provided in the B.6.1 section of the PDD	OK	OK
s. In CDM-PDD section B.6.4 are the results of the <i>ex ante</i> estimation of emission reductions for all years of the crediting period, provided in a tabular format?	EB 41	Ann 12	Yes, the ex-ante estimation of emission reductions is provided in a tabular format for the 10 years (renewable) crediting period.	OK	OK
t. In CDM-PDD section B.7.1 are following provided?	EB 41	Ann 12			
i. Specific information on how the data and parameters that need to be monitored would actually be collected during monitoring for the project activity	EB 41	Ann 12	The information on the data monitoring and collection has been explained in the PDD. However in the subsequent section of this validation report the issues with respect to the monitoring have been discussed in detail.	OK	OK
ii. For each parameter the following below information, using the table provided:	EB 41	Ann 12			
a. The source(s) of data that will be actually used for the proposed project activity (e.g. which exact national statistics). Where several sources may be used, explain and justify which data sources should be preferred.	EB 41	Ann 12	The source of data is stated in the PDD. 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 7	OK


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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			"Value of the data" is not mentioned in section B.7.1 of the web hosted PDD.		
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 relevant: any further comment. Provide any relevant further background documentation in Annex 4.	EB 41	Ann 12	Please refer CAR 7 above		
u. In CDM-PDD section B.7.2 are following provided?	EB 41	Ann 12			
i. A detailed description of the monitoring plan	EB 41	Ann 12	The detailed description of the monitoring plan is provided in the B.7.2 section of the PDD.	OK	OK
ii. The operational and management structure that the project operator will implement in order to monitor emission reductions and any leakage effects generated by the project activity	EB 41	Ann 12	The operational and management structure for monitoring the parameters pertaining to emission reductions are stated in the B.7.2 section.	OK	OK


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iii. The responsibilities for and institutional arrangements for data collection and archiving	EB 41	Ann 12	The responsibilities and arrangements for data collection and archiving has been illustrated in the PDD	OK	OK
iv. Indication that the monitoring plan reflect good monitoring practice appropriate to the type of project activity	EB 41	Ann 12	The monitoring plan covers the parameters required by the approved monitoring plan.	OK	OK
v. Relevant further background information in Annex 4	EB 41	Ann 12	The information has been presented in the B.7.2 and further information is provided in the Annex 4 of the PDD.	OK	OK
v. In CDM-PDD section B.8 are following provided?	EB 41	Ann 12			
i. Date of completion of the application of the methodology to the project activity study in DD/MM/YYYY	EB 41	Ann 12	The date of completion of the application of the methodology to the project activity study is provided in DD/MM/YYYY format.	OK	OK
ii. Contact information of the person(s)/entity(ies) responsible for the application of the baseline and monitoring methodology to the project activity	EB 41	Ann 12	The same has been provided.	OK	OK
iii. Indication if the person/entity is also a project participant listed in Annex 1	EB 41	Ann 12	Yes, the entity is also the project participant listed in the Annex 1 of the document.	OK	OK
w. In CDM-PDD section C.1.1 are following provided?	EB 41	Ann 12			
i. The starting date of a CDM project activity, which is the earliest of the date(s) on which the implementation or construction or real action of a project activity begins/has begun (EB33, Para 76/CDM Glossary of terms/EB41, Para 67)	EB 41	Ann 12	The date of purchase order placed on the WEG supplier is taken as the starting date of this CDM project activity.	OK	OK
ii. A description of how this start date has been determined, and a description of the evidence	EB 41	Ann 12	The date of purchase order placed on WEG supplier, the description of the same has been	OK	OK



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available to support this start date			provided in the PDD.		
iii. If this starting date is earlier than the date of publication of the CDM-PDD for global stakeholder consultation by a DOE, description in Section B.5 contain a of how the benefits of the CDM were seriously considered prior to the starting date (EB41, Para 68).	EB 41	Ann 12	The starting date is earlier than the date of publication of the CDM-PDD for global stakeholder consultation. The description how seriously CDM related benefits were considered has been illustrated in the B.5 section the PDD.	OK	OK
x. In CDM-PDD section C.1.2 is the expected operational lifetime of the project activity in years and months provided?	EB 41	Ann 12	The expected operational lifetime is indicated as 20 years and 0 months. However, the operational lifetime of WEG is not substantiated with objective evidence.	CL 4	OK
y. In CDM-PDD section C.2 is it stated whether the project activity will use a renewable or a fixed crediting period and is C.2.1 or C.2.2 completed accordingly?	EB 41	Ann 12	The PP has opted for the fixed crediting period, the same has been stated in the PDD.	OK	OK
z. In CDM-PDD section C.2.1 is it indicated that each crediting period shall be at most 7 years and may be renewed at most two times, provided that, for each renewal, a designated operational entity determines and informs the Executive Board that the original project baseline is still valid or has been updated taking account of new data where applicable?	EB 41	Ann 12	Not Applicable, since the PP has opted for fixed crediting period.	OK	OK
aa. In CDM-PDD section C.2.1.1 are dates in the following format: (DD/MM/YYYY) provided?	EB 41	Ann 12	Not Applicable, since the PP has opted for fixed crediting period.	OK	OK
bb. In CDM-PDD section C.2.1.2 is the length of the first crediting period in years and months provided?	EB 41	Ann 12	Not Applicable, since the PP has opted for fixed crediting period.	OK	OK
cc. In CDM-PDD section C.2.2 is the fixed crediting	EB	Ann	Yes, the PP has chosen fixed crediting period of	OK	OK


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period at most ten (10) years provided?	41	12	ten years.		
dd. In CDM-PDD section C.2.2.1 are the dates provided in the following format: (DD/MM/YYYY)?	EB 41	Ann 12	The registration date has been mentioned as 01/12/2011 which is in DD/MM/YYYY format.	OK	OK
ee. In CDM-PDD section C.2.2.2 is the length of the crediting period in years and months Provided?	EB 41	Ann 12	Not Applicable.		
ff. In CDM-PDD section D.2 are the conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the Host Party, if environmental impacts are considered significant by the project participants or the Host, provided?	EB 41	Ann 12	The host party does not mandate Environmental Impact Assessment study to be conducted for wind power projects.	OK	OK
gg. In CDM-PDD section E.1 are the following provided?	EB 41	Ann 12			
i. The process by which comments by local stakeholders have been invited and compiled. An invitation for comments by local stakeholders shall be made in an open and transparent manner, in a way that facilitates comments to be received from local stakeholders and allows for a reasonable time for comments to be submitted.	EB 41	Ann 12	Project Participant has invited the local stakeholders by sending invitations. The invitations sent to the stakeholders are not submitted to the validation team.	CL 5	OK
ii. The project activity is described in a manner, which allows the local stakeholders to understand the project activity, taking into account confidentiality provisions of the CDM modalities and procedures.	EB 41	Ann 12	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.	CL 6	OK
iii. The local stakeholder process has been completed before submitting the proposed	EB 41	Ann 12	Yes, the local stakeholder process was completed before the PDD was submitted to the validation	OK	OK


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project activity to the DOE for validation.			team.		
hh. In CDM-PDD section E.2 are following provided?	EB 41	Ann 12			
i. Identification of local stakeholders that have made comments	EB 41	Ann 12	Section E.2 of the web hosted PDD is not presented in accordance with guidance of completing CDM PDD.	CAR 10	OK
ii. A summary of this comments.	EB 41	Ann 12	Summary of comments has been provided.	OK	OK
ii. In CDM-PDD section E.3 is the explanation of how due account have been taken of comments received from local stakeholders provided?	EB 41	Ann 12	From description provided in the web hosted PDD is not clear how the comments were received from the local stakeholder and how it was recorded.	CL 7	OK
jj. In CDM-PDD Annex 1 are the following provided?	EB 41	Ann 12			
i. Contact information of project participants	EB 41	Ann 12	Yes, the contact information of project participant is provided.	OK	OK
ii. For each organisation listed in section A.3 the following mandatory fields: Organization, Name of contact person, Street, City, Postfix/ZIP, Country, Telephone and Fax or e-mail	EB 41	Ann 12	The project activity has only one PP and information of this PP has been provided as per the requirements.	OK	OK
kk. In CDM-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 41	Ann 12	Provided, there is no public funding involved in this Project Activity.	OK	OK
ll. In CDM-PDD Annex 3 is the background information used in the application of the baseline methodology provided?	EB 41	Ann 12	Cross reference to B.6.1 is provided.	OK	OK



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mm. In CDM-PDD Annex 4 is the background information used in the application of the monitoring methodology provided?	EB 41	Ann 12	Cross reference to B.7 is provided.	OK	OK
4. Project description					
a. Does the PDD contain a clear description of 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?	VVM	58	The description of the project activity is provided in a manner where the reader can understand the precise nature and technical aspects of its implementation.	OK	OK
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			
c. Is the proposed CDM project activity in existing facilities or 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	Yes the project is large scale project.	OK	OK
ii. Non-bundled small scale projects with emission reductions exceeding 15,000 tonnes per year?	VVM	60	Not Applicable	OK	OK
iii. Bundled small scale projects, each with	VVM	60	Not Applicable	OK	OK


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emission reductions not exceeding 15,000 tonnes?					
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	The physical site inspection was conducted by the validation team on 26/08/11.	OK	OK
f. If yes to (d.iii) above, was the number of physical site visits base on sampling?	VVM	60	Not Applicable	OK	OK
g. If yes is the sampling size appropriately justified through statistical analysis?	VVM	60	Not Applicable	OK	OK
h. For other individual proposed small scale CDM project activities with emission reductions not exceeding 15,000 tonnes per year, was a physical site inspection conducted?	VVM	61	Not Applicable		
i. For all other proposed CDM project activities not referred to in paragraphs 59 – 61, was a physical site inspection conducted?	VVM	62	Not Applicable		
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	The project activity is a Greenfield project.	OK	OK
l. If yes, does the project description clearly state the differences resulting from the project activity compared to the pre-project situation?	VVM	63	Not Applicable.	OK	OK
5. Baseline and monitoring methodology					
a. General requirement					
a. Do the the baseline and monitoring	VVM	65	Yes, the baseline and monitoring methodology	OK	OK


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methodologies selected by the project participants comply with the methodologies previously approved by the CDM Executive Board?			selected by the project participant is ACM 0002, version 12.1.0 which is approved by the CDM Executive Board.		
b. Is the selected methodology applicable to the project activity?	VVM	66	Refer to (5.b.a) below	-	-
c. Had the PP correctly applied the selected methodology?	VVM	66	Refer to (5.b.d) below	-	-
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			
i. Has the additionality of the project activity been demonstrated and assessed using the latest version of the "Tool for the demonstration and assessment of additionality" agreed by the Board, which is available on the UNFCCC website?	ACM	0002 v.12. 1.0	Yes, the additionality of the project activity has been demonstrated and assessed using the "Tool for the demonstration and assessment of additionality", the latest version 05.2 available on the UNFCCC website has been used.	OK	OK
h. Had the selected methodology been correctly applied with respect to monitoring methodology?	VVM	67	Refer to (7.g), (7.h), (7.i), (7.j) and (7.k) sections below.	OK	OK
b. Applicability of the selected methodology to the project activity					


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a. Is the selected baseline and monitoring methodology, previously approved by the CDM Executive Board, applicable to the project activity? Is the used version valid?	VVM	68	The selected methodology ACM 0002, version 12.1.0 is approved by the CDM executive board. The project activity being new installation of new wind energy generators and with the objective of selling the generated electricity to the grid, which is applicable under this methodology. The version of used methodology is valid from 17/10/2010 onwards.	OK	OK
i. This methodology is applicable to grid-connected renewable power generation project activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plants); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).	ACM	0002 v.12. 1	The project activity involves the installation of a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity. This methodology is applicable to grid connected renewable power generation project activity.	OK	OK
b. Has the DOE applied specific guidance provided by the CDM Executive Board in respect to the applicable approved methodology?	VVM	69			
c. Is the methodology correctly quoted?	VVM	70	Yes the methodology has been correctly quoted.	OK	OK
d. Are the applicability conditions of the methodology met?	VVM	71			
i. The project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind	ACM	0002 v.12. 1	The project activity is the new installation of wind based power plant.	OK	OK


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power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit					
ii. In the case of capacity additions, retrofits or replacements (except for wind, solar, wave or tidal power capacity addition projects which use Option 2: on page 10 to calculate the parameter $EG_{PJ,y}$): the existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.	ACM	0002 v.12. 1	Not applicable	OK	OK
iii. In case of hydro power plants, one of the following conditions must apply: - The project activity is implemented in an existing reservoir, with no change in the volume of reservoir; or - The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/m ² ; or - The project activity results in new reservoirs	ACM	0002 v.12. 1	Not applicable. The project activity is a wind power project.	OK	OK


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and the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m ² .					
iv. The methodology is not applicable to the following conditions. Please confirm - Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity - Biomass fired power plants; - Hydro power plants that result in new reservoirs or in the increase in existing reservoirs where the power density of the power plant is less than 4 W/m ² .	ACM	0002 v.12. 1	Not Applicable, the project activity is a wind energy based power project.	OK	OK
v. In the case of retrofits, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, i.e. to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance".	ACM	0002 v.12. 1.0	Not Applicable. The project is a Greenfield project.	OK	OK
e. Is the project activity expected to result in emissions other than those allowed by the methodology?	VVM	71	No.	OK	OK
f. Is the choice of the methodology justified?	VVM	71	Yes the choice of the methodology has been justified.	OK	OK
g. Have the project participants shown that the	VVM	71	Refer to (5.b.d) above	-	-



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project activity meets each of the applicability conditions or the approved methodology?					
h. Have the project participants shown that the project activity meets each of the applicability conditions of any tool or other methodology component referred to the methodology?	VVM	71			
i. Are each of the applicability conditions of the "Tool to calculate the emission factor for an electricity system" met?	EB 50	Ann 40	The applicability conditions of the Tool to Calculate the Emission Factor have been met.	OK	OK
ii. Are each of the applicability conditions of the "Tool for the demonstration and assessment of additionality" met?	EB 39	Ann 10	The applicability conditions of the – Tool for the demonstration and assessment of additionality are met.	OK	OK
iii. Are each of the applicability conditions of the "Combined tool to identify the baseline scenario and demonstrate additionality" met?	EB 28	Ann 14	Not Applicable.		
iv. Are each of the applicability conditions of the "Tool to calculate project or leakage CO ₂ emissions from fossil fuel combustion" met?	EB 41	Ann 11	Not Applicable		
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	Yes, the information sourced is from reliable and credible sources.	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 information gathered during the site visit was the primary comparable source of information used to compare the PDD against.	OK	OK
k. Can a determination regarding the applicability of the selected methodology to the proposed CDM	VVM	72	Yes	OK	OK



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project activity be made?					
l. If no, clarification of the methodology was requested, in accordance with the guidance provided by the CDM Executive Board?	VVM	72	Not applicable		
m. If answer to (5.b.d) above is "no", revision or deviation from the methodology was requested, in accordance with the guidance provided by the CDM Executive Board?	VVM	73	Not applicable		
n. If yes to (5.b.l) and (5.b.m) above, a request for registration was submitted before the CDM Executive Board has approved the proposed deviation or revision?	VVM	74	Not applicable		
c. Project boundary					
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 extent of the project boundary, as described in the PDD, includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to?	ACM	0002 v12. 1.0	The PDD provides the description project boundary includes the physical delineation of the proposed CDM project activity. However during the validation site visit it was noted that the sub-station name stated in the PDD and actual sub-station names were not matching.	CAR 8	OK
ii. Are the greenhouse gases and emission sources that are included in or excluded from the project boundary shown in a table format as per applicable methodology?	ACM	0002 v 11	Table showing sources and gases included in project boundary are not as per the applied baseline and monitoring methodology.	CAR 8 (a)	OK


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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	Yes the delineation has been provided in the PDD.	OK	OK
c. Does the delineation in the PDD of the project boundary meet the requirements of the selected baseline?	VVM	79	Yes, it meets requirements of the selected baseline.	OK	OK
d. Have changes been made to the project boundary in comparison to the webhosted PDD. If yes please comment on the reason for the changes.	VVM	79	To be assessed upon the submission of the revised PDD by the PP.	OK	OK
e. Have all sources and GHGs required by the methodology been included within the project boundary?	VVM	79	Yes included.	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	Not Applicable		
g. If yes, have the project participants justified that choice?	VVM	79	Not Applicable		
h. If yes, is the justification provided reasonable? (provide reference to the supporting documented evidence provided by the project participants)	VVM	79	Not Applicable		
d. Baseline identification					
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	VVM	81	The methodology prescribes grid as the baseline which is applicable to the project activity.	OK	OK


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CDM project activity?					
b. Has any procedure contained in the methodology to identify the most reasonable baseline scenario, been correctly applied?	VVM	82			
i. If the project activity is the install a new grid-connected renewable power plant/unit (greenfield plant), is the baseline scenario identified appropriately in accordance with the ACM0002 ver.12.2.0?	ACM	0002 v12. 2.0	The project activity involves the installation of new grid connected wind energy based power plant.	OK	OK
ii. If the project activity is a capacity addition to existing grid-connected renewable power plant/unit, is the baseline scenario identified appropriately in accordance with the ACM0002 ver. 12.2.0? And is the point of time at which the generation facility would likely be replaced or retrofitted (DATE Baseline Retrofit) reasonably defined?	ACM	0002 v12. 2.0	Not Applicable		
iii. If the project activity is the retrofit or replacement of existing grid-connected renewable power plant/unit, is the baseline scenario identified following the step-wise procedure in accordance with the ACM0002 ver.12.2.0?	ACM	0002 v12. 2.0	Not Applicable		
iv. Are the realistic and credible alternative baseline scenarios for power generation appropriately identified following the Step 1 of the "Combined tool to identify the baseline scenario and demonstrate additionality"? (Step 1)	ACM	0002 v12. 2.0	Not Applicable		



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v. Are the realistic and credible alternative baseline scenarios i.e. P1, P2 and P3 appropriately applied Barrier analysis following the Step 2 of the “Combined tool to identify the baseline scenario and demonstrate additionality”? (Step 2)	ACM	0002 v12. 2.0	Not Applicable, as the methodology prescribes the baseline.		
vi. If more than one alternative is remaining after Step 2, is Investment analysis appropriately applied (apply an Investment Comparison as per step 3 of the “Combined tool to identify the baseline scenario and demonstrate additionality” or a Benchmark Analysis as per step 2b of the “Tool for the demonstration and assessment of additionality”)? (Step 3)	ACM	0002 v12. 2.0	Not Applicable		
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 demonstrate additionality”) to establish the baseline scenario?	VVM	82	Yes, the PP has applied - Tool for the demonstration and assessment of additionality.	OK	OK
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	Yes	OK	OK
e. Does the methodology require several alternative scenarios to be considered in the identification of the most reasonable baseline scenario?	VVM	83	The methodology prescribes grid as the baseline, hence identification of several alternative scenarios is not required.	OK	OK
f. If yes, are all scenarios that are considered by the project participants and are supplementary to	VVM	83	Not Applicable		


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those required by the methodology reasonable in the context of the proposed CDM project activity?					
g. Has any reasonable alternative scenario been excluded?	VVM	83	Not Applicable		
h. Is the baseline scenario identified reasonably supported by:	VVM	84	Not Applicable		
i. Assumptions?	VVM	84			
ii. Calculations?	VVM	84			
iii. Rationales?	VVM	84			
i. Are the documents and sources referred to in the PDD correctly quoted and interpreted?	VVM	84	Yes the references and sources are correctly quoted in the PDD.	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	The information has been derived from the Central Electricity Authority (CEA), which is a credible source. The information provided in PDD was cross checked on the CEA public domain.	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 prescribes the baseline and the PP has taken into account the conditions prescribed in the methodology for applying grid as the baseline.	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	Yes	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 same has been provided.	OK	OK



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<i>e. Algorithms and/or formulae used to determine emission reductions</i>					
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 baseline, project emissions and leakage are provided.	OK	OK
b. Have the equations and parameters in the PDD been correctly applied with respect those in the select approved methodology?	VVM	90	Paragraph 11 of ACM 0002, version 12.2.0 has the following equation: $ER_y = BE_y - PE_y$, The same equation is used in the webhosted PDD to determine the Emission Reductions.	OK	OK
i. Are the Project emissions appropriately calculated?	ACM	0002 v.12. 2.0	There are no project emissions involved in this project activity.	OK	OK
ii. Are the Baseline emissions appropriately calculated specifically for (a) greenfield plants or (b) retrofit and replacements or (c) capacity additions?	ACM	0002 v.12. 2.0	Baseline emissions have been calculated with respect to the Greenfield plant by the PP, which meets the requirement of applied methodology ACM 0002.	OK	OK
iii. Are the Leakage appropriately calculated?	ACM	0002 v.12. 2.0	The project activity does not involve any leakage.	OK	OK
iv. Are the Emission reductions appropriately calculated?	ACM	0002 v.12. 2.0	Yes the calculation of emission reduction is as per approved methodology and appropriate.	OK	OK
c. Have project participants prepared as part of the CDM-PDD an estimate of likely emission reductions for the proposed crediting period? This estimate should, in principle, employ the	ACM	0002 v.12. 2.0	Yes the PP has prepared the estimations of the likely emission reductions for the proposed crediting period.	OK	OK


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same methodology as selected for the calculation of emission reductions. Where the grid emission factor (EFCM,grid,y) is determined ex post during monitoring, project participants may use models or other tools to estimate the emission reductions prior to validation.					
d. Does the methodology provide for selection between different options for equations or parameters?	VVM	90	Yes the methodology provides options for different equations.	OK	OK
e. 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	Yes, the adequate justification is provided.	OK	OK
f. If yes, have correct equations and parameters been used, in accordance with the methodology selected?	VVM	90	Refer to (5.e.b) above	-	-
g. Will data and parameters be monitored throughout the crediting period of the proposed CDM project activity?	VVM	91	The parameters that would not be monitored through out the crediting period.	OK	OK
h. If no, and these data and parameters will remain fixed throughout the crediting period, are all data sources and assumptions:	VVM	91	The parameters are fixed ex-ante for the 10 year fixed crediting period.		
i. Appropriate and correct?	VVM	91	Yes		
ii. Applicable to the proposed CDM project activity?	VVM	91	Yes it is applicable to the proposed project activity.	OK	OK
iii. Resulting in a conservative estimate of the emission reductions?	VVM	91	Yes	OK	OK
i. Will data and parameters to be monitored on implementation and hence become available only	VVM	91	Yes	OK	OK



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after validation of the project activity?					
j. If yes, are the estimates provided in the PDD for these data and parameters reasonable?	VVM	91	Yes the estimates and data used are reasonable.	OK	OK
6. Additionality of a project activity					
a. Does the PDD describe how a proposed CDM project activity is additional?	VVM	94	Description of the project activity being additional is provided in the B.5 section. Details how the project is additional is provided in the subsequent sections of this report.	OK	OK
b. Does the CDM-PDD state the latest version of the additionality tool being used?	ACM	0002 v.12. 2.0	Yes the PP has used the latest additionality tool, version 6.0.0, EB 65 which is available on the UNFCCC website.	OK	OK
c. Were the following steps of the tool to assess additionality used:	EB 39	Ann 10			
i. Identification of alternatives to the project activity?	EB 39	Ann 10	Yes, the identification of alternative is as per the applied methodology.	OK	OK
ii. Investment analysis to determine that the proposed project activity is either: 1) not the most economically or financially attractive, or 2) not economically or financially feasible?	EB 39	Ann 10	Investment analysis is approach applied by the PP to determine that the proposed project activity is whether financially attractive or not without the revenue from sale of certified emission reductions (CERs).	OK	OK
iii. Barriers analysis?	EB 39	Ann 10	The PP has not applied Barrier Analysis to demonstrate additionality.	OK	OK
iv. Common practice analysis?	EB 39	Ann 10	Yes, the PP has used common practice analysis to demonstrate additionality.	OK	OK
d. In step 1 (i) have all the sub-steps as below been followed?	EB 39	Ann 10			
i. Sub-step 1a: Define alternatives to the project activity	EB 39	Ann 10	The most plausible baseline scenarios identified for the project activity are:	OK	OK


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			(a) The Project is undertaken without registering it as a CDM activity. (b) Equivalent amount of electricity being generated through operation of grid-connected power plants and addition of new generation sources.		
ii. Sub-step 1b: Consistency with mandatory laws and regulations	EB 39	Ann 10	Yes, the step 1b has been followed.	OK	OK
e. Have the following alternatives been included while defining alternatives as per sub-step 1a?	EB 39	Ann 10			
i. (a) The proposed project activity undertaken without being registered as a CDM project activity;	EB 39	Ann 10	Yes the same has been included while defining the alternatives.	OK	OK
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	The same has demonstrated in the PDD.	OK	OK
f. Has the project participant included the technologies or practices that provide outputs or services with comparable quality, properties and application areas as the proposed CDM project activity and that have been implemented previously or are currently being introduced in the	EB 39	Ann 10	Not Applicable.		


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relevant country/region?					
g. Has the outcome of Step 1a: Identified realistic and credible alternative scenario(s) to the project activity done correctly? Please briefly mention the outcome.	EB 39	Ann 10	Yes, the outcome of the Step 1a is in line with the "Tool to calculate the emission factor for an electricity system". The Continuation of present scenario of grid-supplied power would be a conservative approach to baseline establishment.	OK	OK
h. Is the alternative(s) in compliance with all mandatory applicable legal and regulatory requirements, even if these laws and regulations have objectives other than GHG reductions, e.g. to mitigate local air pollution.?	EB 39	Ann 10	The PP in the PDD has stated that the alternatives are in compliance with mandatory legislation and regulations taking into account the enforcement in the region. However the PDD is silent on the applicable regulation or policies that prevent the alternatives from occurring.	CAR 9	OK
i. If an alternative does not comply with all mandatory applicable legislation and regulations, has it been shown that, based on an examination of current practice in the country or region in which the law or regulation applies, those applicable legal or regulatory requirements are systematically not enforced and that noncompliance with those requirements is widespread in the country?	EB 39	Ann 10	Not Applicable		
j. Has the outcome of Step 1b: Identified realistic and credible alternative scenario(s) to the project activity that are in compliance with mandatory legislation and regulations taking into account the enforcement in the region or country and EB decisions on national and/or sectoral policies and regulations done correctly? Please state the outcome.	EB 39	Ann 10	Please refer CAR 9 above.		


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k. Has PP selected Step 2 (Investment analysis) or Step 3 (Barrier analysis) or both Steps 2 and 3?	EB 39	Ann 10	The PP has selected Step 2 (Investment) only.	OK	OK
l. In step 2, have all the sub-steps as below been followed?	EB 39	Ann 10			
i. Sub-step 2a: Determine appropriate analysis method;	EB 39	Ann 10	Yes, the PP has followed the appropriate analysis method.	OK	OK
ii. Sub-step 2b: Option I. Apply simple cost analysis;	EB 39	Ann 10	The project activity generates financial income from sale of power to the grid, the PP as the has ruled out Option I of Applying simple cost analysis.	OK	OK
iii. Sub-step 2b: Option II. Apply investment comparison analysis;	EB 39	Ann 10	The PP has chosen to use the Option III: Applying Benchmark Analysis.	OK	OK
iv. Sub-step 2b: Option III. Apply benchmark analysis;	EB 39	Ann 10	The PP has chosen to use the sub-step 2b: Option III and has applied Benchmark Analysis.	OK	OK
v. Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III);	EB 39	Ann 10	The calculation and comparison of financial indicators have been presented in the B.5 section of the PDD.	OK	OK
vi. Sub-step 2d: Sensitivity analysis (only applicable to Options II and III).	EB 39	Ann 10	Yes, sensitivity analysis has been performed and presented in the PDD.	OK	OK
m. In sub-step 2a has the determination of appropriate method of analysis done as per the guidance as below?	EB 39	Ann 10			
i. Simple cost analysis if the CDM project activity and the alternatives identified in Step 1 generate no financial or economic benefits other than CDM related income (Option I).	EB 39	Ann 10	Not Applicable, The project activity generates financial income from sale of power to the grid, the PP has ruled out the Option I of Applying simple cost analysis.	OK	OK
ii. Otherwise, use the investment comparison analysis (Option II) or the benchmark analysis (Option III). Specify option used with justification.	EB 39	Ann 10	Option III : Benchmark analysis has been used by the PP and justification of the same is provided in the PDD.	OK	OK


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n. Has the below guideline followed for sub-step 2b Option I. Apply simple cost analysis? Document the costs associated with the CDM project activity and the alternatives identified in Step1 and demonstrate that there is at least one alternative which is less costly than the project activity.	EB 39	Ann 10	Not applicable.		
o. Has the below guideline followed for sub-step 2b Option II. Apply investment comparison analysis? Identify the financial indicator, such as IRR, NPV, cost benefit ratio, or unit cost of service most suitable for the project type and decision-making context. Please specify	EB 39	Ann 10	Not Applicable		
p. Has the below guideline followed for Sub-step 2b: Option III. Apply benchmark analysis?	EB 39	Ann 10			
i. Identify the financial/economic indicator, such as IRR, most suitable for the project type and decision context.	EB 39	Ann 10	Post tax Equity IRR has been selected as the financial indicator for the project activity.	OK	OK
ii. When applying Option II or Option III, the financial/economic analysis shall be based on parameters that are standard in the market, considering the specific characteristics of the project type, but not linked to the subjective profitability expectation or risk profile of a particular project developer. Only in the particular case where the project activity can be implemented by the project participant, the specific financial/economic situation of the company undertaking the project activity can be considered.	EB 39	Ann 10	Based on the documents and financial analysis spreadsheet it is noted that the parameters that are standard in the market and relevant to the project activity.	OK	OK


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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 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.	EB 39	Ann 10	The PP has used cost of equity / Required return on equity as the benchmark for this project activity. The validation team from discussions with the PP noted that the PP has other wind power projects which are also being taken CDM Projects and the benchmark value in these projects are different from the current project activity. PP to clarify the difference 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 as per the paragraph 6 of Step 2 b of "Tool for the demonstration and assessment of additionality, Version 5.2".	CL 8	OK
q. Has the below guideline followed for Sub-step 2c: Calculation and comparison of financial indicators	EB 39	Ann 10			


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(only applicable to Options II and III)?					
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	Post-tax IRR is selected as the financial indicator for the proposed project activity.	OK	OK
ii. Present the investment analysis in a transparent manner and provide all the relevant assumptions, preferably in the CDM-PDD, or in separate annexes to the CDM-PDD.	EB 39	Ann 10	The sources and documentary evidence for the information presented in the B.5 section and financial spreadsheet to be provided by the PP.	CAR 5	OK
iii. Justify and/or cite assumptions.	EB 39	Ann 10	Please refer CAR 5 above		
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	Please refer CAR 5 above		
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	Please refer CAR 5 above		
vi. Present in the CDM-PDD a clear comparison of	EB	Ann	Please refer CAR 5 above		



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the financial indicator for the proposed CDM activity. Please specify details for above.	39	10			
r. Has the below guideline followed for Sub-step 2d: Sensitivity analysis (only applicable to Options II and III)? Include a sensitivity analysis that shows whether the conclusion regarding the financial/economic attractiveness is robust to reasonable variations in the critical assumptions.	EB 39	Ann 10	The sensitivity analysis has been performed and the presented in the web hosted PDD. Plant Load Factor, Project Cost, operation & 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 th year, PP to substantiate how this tariff would remain the same for the entire operational lifetime of the proposed CDM project activity.	CL 9	OK
s. Has the outcome of Step 2 clearly mentioned with justification?	EB 39	Ann 10			
t. In step 3: Barrier analysis have all the sub-steps as below been followed?	EB 39	Ann 10	Not Applicable, since the PP has not applied the barrier analysis for demonstrating the additionality.	OK	OK
i. Sub-step 3a: Identify barriers that would prevent the implementation of the proposed CDM project activity;	EB 39	Ann 10	Not applicable.		
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.		
u. Has the below guideline followed for Sub-step 3a: Identify barriers that would prevent the implementation of the proposed CDM project?	EB 39	Ann 10	Not applicable. Please refer 6.t above.		
i. (a) Investment barriers: For alternatives undertaken and operated by private entities: Similar activities have only been implemented	EB 39	Ann 10			


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with grants or other non-commercial finance terms. No private capital is available from domestic or international capital markets due to real or perceived risks associated with investment in the country where the proposed CDM project activity is to be implemented, as demonstrated by the credit rating of the country or other country investments reports of reputed origin.					
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. Please refer 6.t above.		
iii. (c) Barriers due to prevailing practice: The project activity is the "first of its kind".	EB 39	Ann 10	Not Applicable, since the PP has not applied the barrier analysis for demonstrating the additionality.		


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iv. (d) Other barriers, preferably specified in the underlying methodology as examples.	EB 39	Ann 10			
v. Has the outcome from Step 3a clearly mentioned in PDD?	EB 39	Ann 10	Not Applicable, since the PP has not applied the barrier analysis for demonstrating the additionality.		
w. Has the below guideline followed for Sub-step 3 b: Show that the identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed project activity)?	EB 39	Ann 10	Not Applicable, since the PP has not applied the barrier analysis for demonstrating the additionality.		
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			
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			
iii. The type of evidence to be provided should include at least one of the following: (a) Relevant legislation, regulatory information or industry norms; (b) Relevant (sectoral) studies	EB 39	Ann 10			


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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.					
x. Has the outcome from Step 3 clearly mentioned in PDD?	EB 39	Ann 10	Not Applicable, since the PP has not applied the barrier analysis for demonstrating the additionality.		
y. 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	Yes, the sub-step 4 a: analyzing other activities similar to the proposed project activity has been followed.	OK	OK
ii. Sub-step 4b: Discuss any similar Options that are occurring.	EB 39	Ann 10	Since sub-step 4a is satisfied, hence the PP has not applied Sub-step 4b..	OK	OK
z. Has the below guideline followed for Sub-step 4a: Analyze other activities similar to the proposed project activity? Provide an analysis of any other activities that are operational and that are similar to the proposed project activity. Other CDM project activities are not to be included in this analysis. Provide documented evidence and, where relevant, quantitative information. On the	EB 39	Ann 10	The guideline for sub-step 4a has been applied, Webhosted PDD contains the description of similar project activities, the PP to clarify how this is in line with point (1) of Sub-step 4a: Analyze other activities similar to the proposed project activity. The comparative analysis and list of projects in the region to be submitted by the PP.	CL 10	OK


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basis of that analysis, describe whether and to which extent similar activities have already diffused in the relevant region.					
aa. Has the below guideline followed for Sub-step 4b: Discuss any similar Options that are occurring? If similar activities are identified, then it is necessary to demonstrate why the existence of these activities does not contradict the claim that the proposed project activity is financially/economically unattractive or subject to barriers. This can be done by comparing the proposed project activity to the other similar activities, and pointing out and explaining essential distinctions between them that explain why the similar activities enjoyed certain benefits that rendered it financially/economically attractive (e.g., subsidies or other financial flows) and which the proposed project activity cannot use or did not face the barriers to which the proposed project activity is subject. In case similar projects are not accessible, the PDD should include justification about non-accessibility of data/information.	EB 39	Ann 10	The guideline of Sub-step 4b has not been applied.	OK	OK
bb. Has the outcome from Step 4 clearly mentioned in PDD?	EB 39	Ann 10	Not Applicable.	OK	OK
cc. Has it been proved that the project is additional?	EB 39	Ann 10	Please refer CL 10 above.		
a. Prior consideration of the clean					



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development mechanism					
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's start date is prior to the date of publication of the PDD for Global 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	The PP has informed the UNFCCC and Host DNA about the intention of seeking CDM status for the proposed project activity. The proof for serious CDM consideration has been submitted by the PP.	OK	OK
c. Is the start date of the project activity, reported in the PDD, in accordance with the "Glossary of CDM terms", which states that "The starting date of a CDM project activity is the earliest date at which either the implementation or construction or real action of a project activity begins."?	VVM	99	The purchase order placed on the equipment supplier has been taken as the start date of the project activity.	OK	OK
d. Does the project activity require construction, retrofit or other modifications?	VVM	99	Yes the project activity requires construction	OK	OK
e. If yes, is it ensured that the date of commissioning cannot be considered as the project activity start date?	VVM	99	The purchase order placed on the equipment supplier is considered as the start date of project activity.	OK	OK
f. Is it a new project activity (a project activity with a start date on or after 02 August 2008) or an existing project activity (a project activity with a start date before 02 August 2008)?	VVM	100	The project activity is a new project with a start date after 02/08/2008.	OK	OK
g. For a new project, for which PDD has not been published for global stakeholder consultation or a	VVM	101	The information provided in the PDD states that	OK	OK


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new methodology proposed to the CDM Executive Board before the project activity start date, had PPs informed the host Party DNA and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status? (Provide reference to such confirmation from host Party DNA and UNFCCC secretariat).			the PP has informed the host party DNA and the UNFCCC in writing about the commencement of the project activity and their intention to seek CDM status. The intimated sent to UNFCCC and Host Party DNA has been submitted by the PP.		
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			
ii. evidence that must indicate that awareness of the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project, including, inter alia:	VVM	102	PP also to clarify how they were aware of CDM related benefits and how it was a decisive factor for serious consideration of CDM.	CL 11	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?	VVM	102	Please refer CL 11 above.		


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iii. reliable evidence from project participants that must indicate that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation, including, inter alia:	VVM	102	The copy of board resolution of the meeting held on 01/04/2011 has been submitted by the PP. The PP has placed the purchase order on the equipment supplier on 02/04/2011. The intimation to UNFCCC and Host Past party were sent on 28/06/2011 which is within the two months of the real start date of the project. Based on the documentary evidence it can be concluded that the PP has taken necessary steps to secure the registration of the project as CDM project activity	OK	OK
a. contract with consultants for CDM/PDD/methodology services?	VVM	102	Not Applicable		
b. Emission Reduction Purchase Agreements or other documentation related to the sale of the potential CERs (including correspondence with multilateral financial institutions or carbon funds)?	VVM	102	Not Applicable		
c. evidence of agreements or negotiations with a DOE for validation services?	VVM	102	Not Applicable		
d. submission of a new methodology to the CDM Executive Board?	VVM	102	Not Applicable		
e. publication in newspaper?	VVM	102	Not Applicable		
f. interviews with DNA?	VVM	102	Not Applicable		
g. earlier correspondence on the project with the DNA or the UNFCCC secretariat?	VVM	102	Not Applicable		
h. Has the chronology of events including time lines been appropriately captured and explained/detailed in the PDD?	VVM	102	The chronology of events is presented in the B.5 section of the PDD	OK	OK



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<i>b. Identification of alternatives</i>					
a. Does the approved methodology that is selected by the proposed CDM project activity prescribe the baseline scenario and hence no further analysis is required?	VVM	105	The approved methodology prescribes the grid as baseline and following is stated in the methodology: “Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations.”	OK	OK
b. If no, does the PDD identify credible alternatives to the project activity in order to determine the most realistic baseline scenario?	VVM	105	Not Applicable		
c. Does the list of alternatives given in the PDD ensure that:	VVM	106	The approved methodology prescribes the grid as baseline. Hence the following is not applicable.	OK	OK
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 applicable and enforced legislation?	VVM	106	Not Applicable		



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<i>c. Investment analysis</i>					
a. Has investment analysis been used to demonstrate the additionality of the proposed CDM project activity?	VVM	108	Yes, Investment analysis has been used by the PP to demonstrate additionality.	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			
ii. economically or financially feasible, without the revenue from the sale of certified emission reductions (CERs)?	VVM	108	Yes, it is demonstrated that the proposed CDM project activity would not be economically or financially feasible, without the revenue from the sale of certified emission reductions (CERs).	OK	OK
c. Was this shown by one of the following approaches?	VVM	109			
i. The proposed CDM project activity would produce no financial or economic benefits other than CDM-related income. Document the costs associated with the proposed CDM project activity and the alternatives identified and demonstrate that there is at least one alternative which is less costly than the proposed CDM project activity.	VVM	109	Not Applicable. The Project Activity has revenue from the sale of electricity to the grid.	OK	OK
ii. The proposed CDM project activity is less economically or financially attractive than at least one other credible and realistic alternative.	VVM	109	Not Applicable		
iii. The financial returns of the proposed CDM project activity would be insufficient to justify the required investment.	VVM	109	The PP has used this approach to demonstrate the additionality.	OK	OK


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d. Is the period of assessment limited to the proposed crediting period of the CDM project activity?	EB 51	Ann 58	The period of assessment is for the entire lifetime of the equipment (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 51	Ann 58	Equity IRR has been chosen, the period of assessment is for the entire lifetime of the equipment (20 years).	OK	OK
f. Does the IRR calculation include the cost of major maintenance and/or rehabilitation if these are expected to be incurred during the period of assessment?	EB 51	Ann 58	PP to clarify why the cost of major maintenance and or rehabilitation has not been included in the financial analysis.	CL 11	OK
g. Do the project participants justify the appropriateness of the period of assessment in the context of the underlying project activity, without reference to the proposed CDM crediting period?	EB 51	Ann 58	Yes the PP has justified the same. Eventhough the PP have chosen the fixed crediting period, the assessment is conducted for entire operational life time of the WEGs .	OK	OK
h. Does the cash flow in the final year include a fair value of the project activity assets at the end of the assessment period?	EB 51	Ann 58	Yes, the fair value is included in the cash flow in the final year.	OK	OK
i. Has the fair value been calculated in accordance with local accounting regulations where available, or international best practice?	EB 51	Ann 58	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 12	OK
j. Does the fair value calculations include both the book value of the asset and the reasonable expectation of the potential profit or loss on the realization of the assets?	EB 51	Ann 58	The fair value calculated is only on the book value of the asset.	OK	OK


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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 51	Ann 58	The depreciation and other non cash items related to the project activity are added back while calculating IRR.	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 51	Ann 58	Yes the taxation has been included.	OK	OK
m. Are the input values used in all investment analysis valid and applicable at the time of the investment decision taken by the project participant?	EB 51	Ann 58	The sources and documentary evidence for the information presented in the B.5 section and financial spreadsheet to be provided by the PP.	CAR 5	OK
n. Is the timing of the investment decision consistent and appropriate with the input values?	EB 51	Ann 58	The initial offer received from equipment supplier - Enercon to be submitted by the PP.	CL 13	OK
o. Are all the listed input values been consistently applied in all calculations?	EB 51	Ann 58	The input values have been consistently applied in all the calculations.	OK	OK
p. Does the investment analysis reflect the economic decision making context at point of the decision to recommence the project in the case of project activities for which implementation ceases after the commencement and where implementation is recommenced due to consideration of the CDM?	EB 51	Ann 58	Not Applicable.		
q. Have project participants supplied the spreadsheet versions of all investment analysis?	EB 51	Ann 58	The spreadsheet versions of all the investment analysis is submitted by the PP	OK	OK
r. Are all formulas used in this analysis readable and all relevant cells be viewable and	EB 51	Ann 58	Yes, all the cells are viewable and unprotected	OK	OK


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unprotected?					
s. In cases where the project participant does not wish to make such a spreadsheet available to the public has the PP provided an exact read-only or PDF copy for general publication?	EB 51	Ann 58	Not Applicable		
t. In case the PP wishes to black-out certain elements of the publicly available version, is it justifiable?	EB 51	Ann 58	Not Applicable		
u. Was the cost of financing expenditures (i.e. loan repayments and interest) included in the calculation of project IRR?	EB 51	Ann 58	Not Applicable, PP has used Equity IRR.		
v. In the calculation of equity IRR, has only the portion of investment costs which is financed by equity been considered as the net cash outflow?	EB 51	Ann 58	The PP has opted for Equity IRR. In the cashflow sheet of the financial analysis the PP has stated two components under Cash Outflow, PP clearly the basis of arriving at "Increase/(decrease) in Current Assets".	CL 14	OK
w. Has the portion of the investment costs which is financed by debt been considered a cash outflow in the calculation of equity IRR? (this is not allowed)	EB 51	Ann 58	Not Applicable. The project is developed by 100% equity and no debt..		
x. Was a pre-tax benchmark be applied?	EB 51	Ann 58	Not Applicable, post-tax benchmark has been applied by the Project Participant.	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 51	Ann 58	The project participant has applied Post-tax benchmark in the investment analysis for the demonstration of additionality. The PP is required to clarify the followings: It is observed that Surcharge has not accounted for Income tax calculations.	CL 15	OK


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			PP needs to explain how the tax under MAT is considered for LLP.		
z. In such situations, was interest calculated according to the prevailing commercial interest rates in the region, preferably by assessing the cost of other debt recently acquired by the project developer and by applying a debt-equity ratio used by the project developer for investments taken in the previous three years?	EB 51	Ann 58	Not Applicable		
aa. In cases where a benchmark approach is used is the applied benchmark appropriate to the type of IRR calculated?	EB 51	Ann 58	Post-tax Cost of Equity has been calculated which is appropriate for Equity IRR.	OK	OK
bb. Has local commercial lending rates or weighted average costs of capital (WACC) selected as appropriate benchmarks for a project IRR?	EB 51	Ann 58	Not Applicable.		
cc. Has required/expected returns on equity selected as appropriate benchmark for an equity IRR?	EB 51	Ann 58	Yes the. required/expected returns on equity selected as appropriate 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 51	Ann 58	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 51	Ann 58	Yes, the benchmark is applied based on the publicly available data sources which can be validated.	OK	OK
ff. Have internal company benchmarks/expected returns (including those used as the expected	EB 51	Ann 58	The benchmark used by the PP is not the internal benchmark.	OK	OK


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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
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?					
gg. In such cases, have these values been used for similar projects with similar risks, developed by the same company or, if the company is brand new, would have been used for similar projects in the same sector in the country/region?	EB 51	Ann 58	Not applicbale		
hh. Has a minimum clear evidence of the resolution by the company's Board and/or shareholders been provided to the effect as above?	EB 51	Ann 58	The resolution of the company's board has been provided.	OK	OK
ii. Has a thorough assessment of the financial statements of the project developer - including the proposed WACC - to assess the past financial behavior of the entity during at least the last 3 years in relation to similar projects been conducted?	EB 51	Ann 58	The WCC calculations used in the project activity is for the first time. This is the first project activity of the PP.	OK	OK
jj. Does the risk premiums applied in the determination of required returns on equity reflect the risk profile of the project activity being assessed, established according to national/international accounting principles? (It is not considered reasonable to apply the rate general stock market returns as a risk premium for project activities that face a different risk profile than an investment in such indices.)	EB 51	Ann 58	Yes, it is established according to the national accounting principles.	OK	OK
kk. Has an investment comparison analysis and not a benchmark analysis used when the proposed	EB 51	Ann 58	The PP has used the benchmark analysis. Hence this is not applicbale.	OK	OK


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baseline scenario leaves the project participant no other choice than to make an investment to supply the same (or substitute) products or services?					
ll. Have variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues been subjected to reasonable variation (positive and negative) and the results of this variation been presented in the PDD and be reproducible in the associated spreadsheets?	EB 51	Ann 58	Yes, the parameters such as PLF, Project Cost, Operation & Maintenance cost and Tariff have been subjected to the Sensitivity Analysis.	OK	OK
mm. Have a corrective action been raised for a variable to be included in the sensitivity analysis which constitute less than 20% and have a material impact on the analysis ?	EB 51	Ann 58	Not Applicable.	OK	OK
nn. Is the range of variations selected is reasonable in the project context?	EB 51	Ann 58	Yes, the range of variation selected is reasonable in the project context.	OK	OK
oo. Do the variations in the sensitivity analysis at least cover a range of +10% and -10%, unless this is not deemed appropriate in the context of the specific project circumstances?	EB 51	Ann 58	Yes, the range covers a range of +10% and -10%	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	EB 51	Ann 58	In none of the scenarios the project activity has passed the benchmark, justification for the same is provided in the B.5 section of the PDD.	OK	OK


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as well as the specific socio-economic and policy context of the project activity?					
qq. Was the plant load factor defined ex-ante in the CDM-PDD according to one of the following options:	EB 48	Ann 11			
i. The plant load factor provided to banks and/or equity financiers while applying the project activity for project financing, or to the government while applying the project activity for implementation approval?	EB 48	Ann 11	Not Applicable	OK	OK
ii. The plant load factor determined by a third party contracted by the project participants (e.g. an engineering company)?	EB 48	Ann 11	The PLF determined by a third party "M/s. True Wind International Certification" has been submitted by the PP. However, In section B.5, source of PLF value has been mentioned inconsistently.	CL 9 (a)	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	The thorough assessment of all the parameters was performed by the financial expert.	OK	OK
ss. Were the parameters cross-checked against third-party or publicly available sources, such as invoices or price indices?	VVM	111	The initial offer received from the equipment supplier to be submitted by the PP.	CL 13	OK
tt. Were feasibility reports, public announcements and annual financial reports related to the proposed CDM project activity and the project participants reviewed?	VVM	111	The annual reports of Vish Wind Infrastructure LLP to be submitted by the PP.	CL 16	OK


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uu. Was the correctness of computations carried out and documented by the project participants assessed?	VVM	111	Yes the same were assessed.	OK	OK
vv. Was the sensitivity analysis by the project participants to determine under what conditions variations in the result would occur, and the likelihood of these conditions assessed?	VVM	111	Yes, the sensitivity analysis was performed and under what conditions variations in the result would occur, and the likelihood of these conditions were assessed.	OK	OK
ww. Is the type of benchmark applied is suitable for the type of financial indicator presented?	VVM	112	Yes, the Post-tax Benchmark is suitable for the Post-Tax IRR, which is in line with latest Investment analysis guidelines.	OK	OK
xx. Do any risk premiums applied determining the benchmark reflect the risks associated with the project type or activity?	VVM	112	Not Applicable.		
yy. To determine this, was it assessed whether it is reasonable to assume that no investment would be made at a rate of return lower than the benchmark by:	VVM	112			
i. assessing previous investment decisions by the project participants involved?	VVM	112			
ii. determining whether the same benchmark has been applied?	VVM	112	The PP to clarify whether the same benchmark has applied across for other projects (implemented projects & proposed projects) for making the investment decision.	CL 8	OK
iii. determining if there are verifiable circumstances that have led to a change in the benchmark?	VVM	112			
zz. Did the project participants rely on values from Feasibility Study Reports (FSR) that are approved by national authorities for proposed	VVM	113	Not Applicable		


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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
CDM project activities?					
xx. If yes:	VVM	113			
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		
d. Barrier analysis					
a. Has barrier analysis been used to demonstrated the additionality of the proposed CDM project activity?	VVM	115	Not applicable, the PP has not chosen the barrier analysis to demonstrate the additionality.	OK	OK
b. If yes, does the PDD demonstrate that the proposed CDM project activity faces barriers that:	VVM	115	Not applicable, the PP has not chosen the barrier analysis to demonstrate the additionality.	OK	OK



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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
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, the PP has not chosen the barrier analysis to demonstrate the additionality.	OK	OK
d. Were the barriers determined as real by:	VVM	117	Not applicable, the PP has not chosen the barrier analysis to demonstrate the additionality.	OK	OK
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 determine whether the barriers listed in the PDD exist?	VVM	117			
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?	VVM	117			



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(If yes, this barrier cannot be considered as adequately substantiated)					
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, the PP has not chosen the barrier analysis to demonstrate the additionality.	OK	OK
e. Common practice analysis					
a. Is this a proposed large-scale, or first-of-its kind small-scale project activity?	VVM	119	The project activity is a large scale project activity.	OK	OK
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	119	The common practice analysis has been carried out by the PP.	OK	OK
c. Was it assessed whether the geographical scope (e.g. defined region) of the common practice analysis is appropriate for the assessment of common practice related to the project activity's technology or industry type? (For certain technologies the relevant region for assessment will be local and for others it may be transnational/global.	VVM	120	The assessment has been performed at the state (Andhra Pradesh) level.	OK	OK
d. Was a region other than the entire host country chosen?	VVM	120	No, the PP has chosen the host country as default region and for further based on state policies &	OK	OK



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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			regulations, Andhra Pradesh state where the project activity is located has been chosen for the assessment.		
e. If yes, was the explanation why this region is more appropriate assessed?	VVM	120	The PDD provides the justification for selecting the region.	OK	OK
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	PP to provide the complete details of the comparative analysis and list of projects in the region to be submitted by the PP.	CL 10	OK
g. Are similar and operational projects, other than CDM project activities, already "widely observed and commonly carried out" in the defined region?	VVM	120	The projects similar to this have been implemented in the defined region.	OK	OK
h. If yes, was it assessed whether there are essential distinctions between the proposed CDM project activity and the other similar activities?	VVM	120	The assessment and justification has been provided in the B.5 section PDD.	OK	OK
7. Monitoring plan					
a. Does the PDD include a monitoring plan?	VVM	122	Yes the PDD includes the monitoring plan.	OK	OK
b. Is this monitoring plan based on the approved monitoring methodology applied to the proposed CDM project activity?	VVM	122	The monitoring plan of the CDM project activity is based approved monitoring methodology.	OK	OK
c. Were the list of parameters required by the the selected methodology identified?	VVM	123	Yes, the list of parameters required by the selected methodology is presented in the PDD.	OK	OK


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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
d. Does the monitoring plan contains all necessary parameters?	VVM	123	The source of data is stated in the PDD, 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 CDM 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. "Value of the data" is not mentioned in section B.7.1 of the web hosted PDD.	CAR 7	OK
e. Are the parameters clearly described?	VVM	123	Please refer CAR 7 above		
f. Does the means of monitoring described in the plan comply with the requirements of the methodology?	VVM	123	Yes the monitoring plan complies with the requirements of the methodology.	OK	OK
g. Are all data and parameters monitored as per monitoring methodology?	ACM	0002 v.11	The data parameters required by the monitoring methodology are monitored.	OK	OK
h. Are all data collected as part of monitoring archived electronically and kept at least for 2 years after the end of the last crediting period?	ACM	0002 v.11	Yes, the data would be archived electronically and also in hard format and kept at least for 2 years after the end of the last crediting period.	OK	OK
i. Are 100% of the data monitored, if not indicated otherwise?	ACM	0002 v.11	The data required by the monitoring methodology are monitored 100%.	OK	OK
j. Are measurements conducted with calibrated measurement equipment according to relevant industry standards?	ACM	0002 v.12. 1.0	Information about the calibration of energy meters used for measurements is clearly defined in the PDD.	OK	OK
k. Are the monitoring provisions in the tools referred to in the methodology correctly applied?	ACM	0002 v.12. 1.0	Yes the same has been applied correctly.	OK	OK


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l. Are the monitoring arrangements described in the monitoring plan feasible within the project design?	VVM	123	The monitoring arrangements described in the monitoring plan are feasible within the project design.	OK	OK
m. Are the following means of implementation of the monitoring plan sufficient to ensure that the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex post and verified:	VVM	123			
i. data management procedures?	VVM	123	Yes	OK	OK
ii. quality assurance procedures?	VVM	123	Yes	OK	OK
iii. quality control procedures?	VVM	123	Yes	OK	OK
8. Sustainable development					
a. Does the CDM project activity assists Parties not included in Annex I to the Convention in achieving sustainable development?	VVM	125	Not Applicable.	OK	OK
b. Does the letter of approval by the DNA of the host Party confirm the contribution of the proposed CDM project activity to the sustainable development of the host Party?	VVM	126	Please refer CL 1 in Section 1.a of Table 1		
9. Local stakeholder consultation					
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	Yes, the local stakeholders were invited by the Project Participant for the consultation meeting, which was prior to the publication of the PDD on the UNFCCC website.	OK	OK



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b. Have comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity been invited?	VVM	129	The comments put forth by the local stakeholder are presented in the PDD and are considered relevant to the proposed CDM project activity.	OK	OK
c. Is the summary of the comments received as provided in the PDD complete?	VVM	129	The summary of the comments put forth by the local stakeholder are provided in the PDD.	OK	OK
d. Have the project participants taken due account of any comments received and described this process in the PDD?	VVM	129	The PDD is silent on how the comments were received and recorded. The PP is requested to clarify the same.	CL 7	OK
10. Environmental impacts					
a. Have the project participants submitted documentation on the analysis of the environmental impacts of the project activity?	VVM	131	The Project Activity does not require any environmental impacts analysis to be conducted.	OK	OK
b. Have the project participants undertaken an analysis of environmental impacts?	VVM	132	Yes, but as a voluntary measure the PP have undertaken an analysis of environmental impacts of the project activity.	OK	OK
c. Does the host Party require an environmental impact assessment?	VVM	132	The host party does not require environmental impact assessment to be conducted for wind energy projects.	OK	OK
d. If yes, have the project participants undertaken an environmental impact assessment?	VVM	132	Not Applicable.		

Table 2 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. To checklist question in Table 1	Summary of project owner response	Validation team conclusion
CL 1 Letter of Approval from the Host DNA needs to be submitted by the PP.	Table -1 1. a	Letter of Approval is being awaited from Host DNA and shall be submitted immediately to DOE once it is obtained.	The letter of approval from the Host Party DNA dated 10/01/2012 has been submitted. Hence CL 1 is closed.
CL 2 The PP's views on the contribution of project activity to sustainable development are provided. Under the technological well being section the PP has stated that 2% of CDM revenues would be contributed towards the sustainable development as part of its commitment to Host Party DNA. The formal undertaking for the same to be provided by the PP.	Table -1 3. d. iii	Undertaking for 2% of CDM revenues would be contributed towards sustainable development as part of its commitment to Host Party DNA. The same has been provided by Vish Wind Infrastructure LLP (hereafter VWIL) to the DOE.	The undertaking by the PP dt., 05/09/2011 has been submitted. The undertaking from the PP confirms that the 2% of CDM revenues would be contributed towards sustainable development as part of the PP's commitment to the Host Party DNA. Hence CL 2 is closed.
CL 3 The physical location with unique identification for individual Wind Energy Generators and approaches to the site (railway station, airport) are presented in the web hosted PDD. The proof for Latitude & Longitude of Individual WEGs needs to be provided. Section A.4.1.4 is spread across more than one	Table -1 3. f. iii	Nallakonda site are changed later which were not included in the prior consideration form. This is because of the uncertain land mass at few locations which were detrimental for foundation. Final location details have been updated in revised PDD. The final locations will remain same	The latitude and longitude detail provided by the equipment supplier has not been submitted to the validation team. The location numbers and geographical coordinates of the individual WTGs have been



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Draft report clarifications and corrective action requests by validation team	Ref. To checklist question in Table 1	Summary of project owner response	Validation team conclusion
page and hence not in accordance with guidance to complete CDM PDD.		for the entire crediting period. In addition to the declaration on location details, a third party 'PLF report provided by True Wind International Certification' is also presented to the DOE. Section A.4.1.4 is compressed to one page in the revised PDD.	provided. The information provided in the revised PDD, version 3.0 has been checked against the letter and found to be matching. Hence CL 3 is closed.
CL 4 The expected operational lifetime is indicated as 20 years and 0 months. However, the operational lifetime of WEG is not substantiated with objective evidence.	Table -1 3. x	The declaration of 20 years of operational lifetime is given by WTG supplier (EIL) which is provided to the DOE.	The deceleration letter, Dt., 30/08/2011, from Equipment Supplier for operational lifetime of the WTG has been submitted by the PP. The validation team has checked the deceleration letter which confirms 20 years as the operational lifetime. The response and evidence submitted by the PP are acceptable and hence CL 4 is closed.
CL 5 Project Participant has invited the local stakeholders by sending invitations. The invitations sent to the stakeholders are not	Table -1 3. gg. I	Invitation letters to the stakeholders are already submitted to the DOE (letter dated, 08 June, 2011).	The invitation letters sent to the respective stakeholders have been submitted, however Invitations sent to Mr. Krishna Reddy, Mr. Ibrahim and Mr. N. Narasimhulu have not



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Draft report clarifications and corrective action requests by validation team	Ref. To checklist question in Table 1	Summary of project owner response	Validation team conclusion
submitted to the validation team.		<p>Invitation letter no.1 is sent to Mr Krishna Venkateswara Reddy and the short for Krishna Reddy is depicted in the PDD.</p> <p>The invitation letters were sent to Mr M Narappa and Mr G Kondamma. Mr Ibrahim represented Mr M Narappa and Mr N Narasimhulu represented Mr G Kondamma of Kurnool site which is confirmed from the site personnel.</p>	been submitted. The invitation letters have been submitted. Hence CL 5 is closed.
<p>CL 6</p> <p>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.</p>	Table-1 3. gg. li	<p>The stakeholders meeting for Kurnool and Anantapur locations were held on 24 June and 25 June, 2011 respectively. The EIL and VWIL representatives narrated project details to the stakeholders. There were interactive sessions amongst the stakeholders and EIL and VWIL personnel which are clearly depicted in the Minutes of Meeting that had already been submitted to the DOE.</p> <p>The names in the MoM and section E.3 of the revised PDD made</p>	<p>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 their comments during this meeting are not the same as mentioned in E.3 section of the PDD.</p> <p>The minutes of meeting and revised PDD, version 3.0 has been checked and it is confirmed that the local stakeholders name who had put forth the comments are now presented in the PDD. Hence CL 6 is closed.</p>



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Draft report clarifications and corrective action requests by validation team	Ref. To checklist question in Table 1	Summary of project owner response	Validation team conclusion
		consistent.	
CL 7 From description provided in the web hosted PDD is not clear how the comments were received from the local stakeholder and how it was recorded.	Table-1 3. ii	The comments were received by the stakeholders during the stakeholder consultation meeting. The comments were compiled in the form of minutes of meeting during the stakeholder consultation. The minutes of meeting have been provided to the DoE for verification. The same are provided in Section E.2 and E.3 of the PDD as well.	Minutes of Meeting for both the sites, Dt., 24/06/2011 & 25/06/2011 have been submitted. The description how the comments were recorded has been stated in the revised PDD section E.2 & E.3. Based on the response and documentary evidence provided are found to be acceptable and satisfactory to the validation team, hence CL 7 is closed.
CL 8 The PP has used cost of equity / Required return on equity as the benchmark for this project activity. The validation team from discussions with the PP noted that the PP has other wind power projects which are also being taken CDM Projects and the benchmark value in these projects are different from the current project activity. PP to clarify the difference 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 as per the paragraph 6 of Step 2 b of "Tool	Table-1 6. p. iii & 6. c. yy. ii	We would like to clarify to DOE that PP has five other project in different states of India apart from the project activity. The investment decision of all the other 5 project was 10 July 2010 , while the investment decision of this project activity is 02 April 2011. The latest guideline on default values of cost of equity as per 'Guidelines on the Assessment of Investment Analysis'_ver 5.0_EB 62_Annex 5, came post 10 July 2010, hence for	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. PP also to justify the applicability of inflation rate of the Host Country at the time of decision making. The Reserve Bank of India's report has been provided as the reference



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Draft report clarifications and corrective action requests by validation team	Ref. To checklist question in Table 1	Summary of project owner response	Validation team conclusion
for the demonstration and assessment of additionality, Version 5.2".		<p>the past 5 projects PP calculated cost of equity based on the parameters available in public domain.</p> <p>Further during the course of validation the project activity the latest guideline of EB 62 was available, which provides two options for calculating the benchmark (1) Default values of cost of equity as provided in Annex 5 of EB 62 or (2) calculating the cost of equity using best financial practices, based on data sources which can be clearly validated by the DOE, PP selected the option (1) of default values to calculate cost of equity. Detailed calculation of cost of equity benchmark has been given in section B.5, sub step 2(b) of PDD.</p>	<p>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 02/02/2011. Hence the validation team is able to conclude that the information was available to the PP at the time of decision making. Hence CL 8 is closed.</p>
<p>CL 9</p> <p>The sensitivity analysis has been performed and the presented in the web hosted PDD. Plant Load Factor, Project Cost, operation & maintenance and Tariff Rate are selected as the parameters for</p>	<p>Table-1</p> <p>6. r</p>	<p>In the financial model that the tariffs from the 11th to 20th year have accordingly been considered based on costs plus the 15.5% return on equity that APERC considers for</p>	<p>The validation team checked the APERC tariff order, the approach adopted by the regulatory commission to determine the tariff for new wind based projects. From</p>



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Draft report clarifications and corrective action requests by validation team	Ref. To checklist question in Table 1	Summary of project owner response	Validation team conclusion
<p>the analysis. PP has stated that the tariff taken for the analysis is conservative and there would be no escalation after the 10th year, PP to substantiate how this tariff would remain the same for the entire operational lifetime of the proposed CDM project activity.</p>		<p>setting wind power tariff. The reason why the tariff number comes down substantially after the 10th year is because the largest component of tariff being the debt service (principal repayment and interest payments) is over by the 10th year of operations and these have already been factored in while determining the regulated tariff for the first 10 years. In fact APERC, while working out the tariff schedule for wind energy projects for the first 10 years, has noted that the reduction in tariff from year to year is mainly on account of repayment of debts and also that there are no running costs other than O&M costs which increases only marginally from year to year.</p> <p>Thus, from the 11th year to the 20th year, the tariff number cannot contain the element of debt service (principal repayment and interest payment) and even with the increased operating costs; the overall tariff number is lower in the</p>	<p>the order it is noted that the commission has envisaged that the tariff would decrease 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 9 has been closed.</p>



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Draft report clarifications and corrective action requests by validation team	Ref. To checklist question in Table 1	Summary of project owner response	Validation team conclusion
		<p>11th year. It is therefore clear that the tariff for the project activity beyond the initial PPA period would be lower. This is bound to happen in any regulated tariff structure and several instances are available in the cost plus tariff regulated power projects where the tariff comes down significantly after the debt service is over. The tariff beyond the term of PPA for our project works out to be INR 2.10 per kWh which is taken conservatively as INR 3.50 per kWh for investment analysis.</p> <p>The levelized tariff calculation including the tariff beyond the 10th year is added to the revised investment analysis spreadsheet.</p>	
<p>CL 9 (a) In section B.5, source of PLF value has been mentioned inconsistently. The APERC Order, 2009 specifies 24.50% PLF. PP to subject the PLF of 24.50% with variations in the sensitivity analysis.</p>	<p>Table-1 6.qq.ii</p>	<p>The source of PLF is corrected and made consistent in Section B.5 in the revised PDD. The source is mentioned as an independent third party assessment report in accordance with “ Guidelines for the reporting and validation of Plant Load Factor” , EB 48, Annex 11.</p>	<p>The corrections incorporated in the revised PDD have been checked by the validation team and found to be OK. Further the PP has subjected the PLF based on APERC order viz., 24.50% for 10%(+/-) variation. The same is checked and found to be OK.</p>



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Draft report clarifications and corrective action requests by validation team	Ref. To checklist question in Table 1	Summary of project owner response	Validation team conclusion
		Further sensitivity analysis has been done up to the point where IRR crosses the benchmark values.	Hence CL 9 (a) is closed.
<p>CL 10</p> <p>The guideline for sub-step 4a has been applied, Web hosted PDD contains the description of similar project activities, the PP to clarify how this is in line with point (1) of Sub-step 4a: Analyze other activities similar to the proposed project activity. The comparative analysis and list of projects in the region to be submitted by the PP.</p>	<p>Table-1</p> <p>6. z</p>	<p>The other activities in the region similar to the project activity have been analyzed in the revised PDD, in line with Sub-step 4a.</p> <p>In Andhra Pradesh initially projects were installed under MNES policy, which was superseded by the state policy by the orders of the state electricity regulatory commission (APERC). APERC issued first order for renewable projects on 20.03.2009 and replace the MNES policy framework. MNES regime is a different regulatory and investment environment and hence cannot be compared to the proposed project activity which falls under the tariff order of the electricity regulatory commission.</p> <p>After the analysis of large scale wind power projects in Andhra Pradesh no similar project was found which is under the same</p>	<p>PP to clarify how Common Practice Analysis defined in the revised PDD is meeting the requirements of 'Guidelines on Common Practice', Annex 12 of EB 63.</p> <p>The latest tool for demonstration and assessment additionality clearly states the steps to be adopted for the Common Practice Analysis, based on the same the PP has revised the PDD and the same has been submitted. The revised PDD and sub step 4a & 4b were analyzed and it was noted that the Project Participant has carried out the common practice as per the requirements of the tool for demonstration and assessment additionality (Version 6.0.0 EB 65), hence CL 10 is closed.</p>



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Draft report clarifications and corrective action requests by validation team	Ref. To checklist question in Table 1	Summary of project owner response	Validation team conclusion
		regulatory regime and installation of project activity is not the common practice in the state.	
CL 11 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	Wind power projects do not require displacement of local habitation and hence there is no cost associated with rehabilitation. Also, since PP has considered O & M costs on a per annum basis, which also include preventive maintenance procedures, a further major maintenance cost is not envisaged, and hence the same has not been considered in the analysis.	<p>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 OK.</p> <p>The response provided by the PP with respect to Displacement or Rehabilitation is accepted, since the land where the WTGs are located were Dry Lands, the information that the land was Dry is available in the two Lease Deeds dated 23/06/2011 (for two sites).</p> <p>Based on the satisfactory response and documentary evidence submitted, the validation team has closed CL 11.</p>
CL 12 The fair value has been calculated in accordance to the local accounting regulations in the investment analysis. The source for the reference	Table-1 6. c. i	AS per the section 205 & 350 of companies act 1956, schedule XIV, depreciation is allowed up to 95% of asset values (web-link :	The project participant has referred to the Company's Act as a source of the salvage / fair value. This is in accordance with the accounting



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Draft report clarifications and corrective action requests by validation team	Ref. To checklist question in Table 1	Summary of project owner response	Validation team conclusion
of local regulation to be provided by the PP.		<p>http://www.mca.gov.in/Ministry/pdf/Companies_Act_1956_13jun2011.pdf)</p> <p>Though being conservative PP has taken 10% as fair value after the 20 years of useful life of WEG.</p>	<p>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 12 is closed.</p>
<p>CL 13</p> <p>The initial offer received from equipment supplier - Enercon to be submitted by the PP.</p>	<p>Table-1</p> <p>6. c. h</p>	<p>The original supplier offer of equipment supplier from EIL is submitted to DOE.</p>	<p>The original supplier offer from Enercon India Limited, Dt., 22/03/2011, has been submitted by the PP. The supplier offer has been verified by the validation team and it is confirmed that the assumptions</p>



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Draft report clarifications and corrective action requests by validation team	Ref. To checklist question in Table 1	Summary of project owner response	Validation team conclusion
			deduced in the investment analysis with respect to project cost, O&M and erection and commissioning charges are the same. Hence CL 13 is closed.
<p>CL 14</p> <p>The PP has opted for Equity IRR. In the cashflow sheet of the financial analysis the PP has stated two components under Cash Outflow, PP to clarify the basis of arriving at "Increase/(decrease) in Current Assets".</p>	<p>Table-1</p> <p>6. c. v</p>	<p>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.</p> <p>Working capital has additional financial implications on the project and hence needs to be considered in the investment analysis.</p> <p>Based on the above requirements PP has considered the WC in P&L 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</p>	<p>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. Hence CL 14 is closed</p>



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Draft report clarifications and corrective action requests by validation team	Ref. To checklist question in Table 1	Summary of project owner response	Validation team conclusion
		capital is not adjusted, the cash flow will be overestimated and hence the equity IRR will not be true. Therefore we have considered it appropriate to consider adjustment of the current asset in computing cash flow.	
<p>CL 15</p> <p>The project participant has applied Post-tax benchmark in the investment analysis for the demonstration of additionality. The PP is required to clarify the followings:</p> <p>It is observed that Surcharge has not accounted for Income tax calculations.</p> <p>PP needs to explain how the tax under MAT is considered for LLP.</p>	Table-1 6. c. y	<p>Surcharge is not applicable for Limited Liability partnerships companies and therefore is not included in the investment analysis. Please refer : http://www.llponline.in/tax_llp.php)</p> <p>“MAT” is a typological error but “AMT” or Alternate Minimum Tax is considered as it is scheduled in last union budget 2011. Under the Finance Bill 2011, Section 115JC, Chapter XII-BA LLPs are liable to pay AMT at an effective rate of 19.055 per cent considering a 3% education cess.</p>	<p>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>As per the Indian Union Budget - 2011 the validation team has confirmed that LLP’s are applicable to pay the Alternate Minimum Tax (AMT) not Minimum Alternate Tax of 19.05%. The correction has been incorporated in the revised PDD, version 3.0 is found to be ok and acceptable, and hence CL15 is closed.</p>
CL 16 The annual reports of Vish Wind Infrastructure	Table-1	The Annual Reports for the year 2008, 2009 and 2010 are provided	Annual Reports for the last three years (2008, 2009 & 2010) have



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Draft report clarifications and corrective action requests by validation team	Ref. To checklist question in Table 1	Summary of project owner response	Validation team conclusion
LLP to be submitted by the PP.	6. c. tt	to DOE.	been submitted by the PP. Hence CL 16 is closed.
<p>CAR 1</p> <p>Description of how environmentally safe and sound technology, and know-how, is transferred to the Host Party(ies) has been provided but the same is not in line with Guidelines for Completing the PDD.</p>	Table-1 3. h. i	The description of how environmentally safe and sound technology, and know-how, is transferred to the Host Party(ies) has been provided in line with the Guidelines for Completing the PDD in the revised PDD Section A.4.3	The description about transfer of technology has been provided in the revised PDD, version 2.0. However the PDD is silent on how environmentally safe and sound technology is. The PP has submitted the revised PDD, version 3.0. The description provided meets the requirements the Guidelines for completing PDD, the same has been checked and found to be ok. Hence CAR 1 is closed.
<p>CAR 2</p> <p>The list and arrangement of the main manufacturing / production technologies, systems and equipments involved has been provided in web hosted PDD but the no. of WEGs mentioned in the Section A. 4. 3 are not matching with the no. of WEGs mentioned in the section A. 2 of the web hosted PDD.</p> <p>The description provided in last paragraph of the section A.4.3 of the web hosted PDD is not in accordance with CDM PDD completing guidance.</p>	Table-1 3. h. iii	<p>There are 26 WTGs under the project activity and same has been made consistent in the revised PDD.</p> <p>The Section A.4.3 is corrected in line with the PDD completing guidance.</p>	<p>The revised PDD has been submitted by the PP.</p> <p>The validation team noted that the no. of WTGs mentioned in the section A.2 & A.4.3 are now consistent. The no. of WTGs from the two purchase orders placed by the PP on the equipment supplier (Enercon India Limited) has also been cross checked and it is confirmed that the project activity</p>



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Draft report clarifications and corrective action requests by validation team	Ref. To checklist question in Table 1	Summary of project owner response	Validation team conclusion
			<p>consists of 26 WTGs.</p> <p>The description in the last paragraph of section A.4.3 of the PDD has been modified to meet the requirements of 'Guidelines for completing the PDD', the same has been checked by the validation team and found to be satisfactory. Based on the response and corrections incorporated in the PDD (version 2.0) CAR 2 is closed.</p>
<p>CAR 3</p> <p>The estimation of emission reductions is provided in tabular format. But the time duration mentioned in the table of A. 4.4 and B. 6. 4 section of the PDD are not consistent.</p>	Table-1 3. i	The time duration (crediting period time) had made consistent in Section A.4.4 and B.6.4 in the revised PDD from February 2012 to February 2022.	<p>The revised PDD, version 2.0 has been submitted.</p> <p>The time duration of crediting period for claiming estimation of emission reductions is now consistent. The corrections incorporated in the PDD are found to be acceptable, hence CAR 3 is closed.</p>
<p>CAR 4</p> <p>First paragraph of the section B.2 i.e. justification of choice of the methodology is not in accordance</p>	Table-1 3.1. i & 5. b.	Section B.2 is revised and made in line with the methodology ACM0002, version 12.1.0 in the	The revised PDD has been submitted by the PP. From the PDD it is noted that all the



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Draft report clarifications and corrective action requests by validation team	Ref. To checklist question in Table 1	Summary of project owner response	Validation team conclusion
<p>with the applied baseline and monitoring methodology.</p> <p>The justification of the choice of methodology has been provided, but the justification of the project activity meeting each of the applicability conditions has not been provided in the PDD.</p>	h	<p>revised PDD.</p> <p>Each of the applicability criterion (as per ACM0002, version 12.1.0) is mentioned clearly with justification in Section B.2 of the revised PDD.</p>	applicability conditions prescribed in the methodology ACM0002, version 12.1.0 have been justified and met, hence CAR 4 is closed.
<p>CAR 5</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 3. I. ii & 6. q. ii	The sources for input values have been incorporated in the PDD under section B.5. Also the sources for input values have been incorporated in the spreadsheet provided to the DoE.	The revised PDD and financial analysis spreadsheet has been submitted by the PP. The validation team has checked the same and found to be satisfactory, hence CAR 5 is closed.
<p>CAR 6</p> <p>The approved methodology ACM 0002 version 12.1.0 prescribes the baseline as "Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources". But the description provided in the PDD is not in line with the approved applied baseline and monitoring methodology.</p>	Table-1 3. n. i.	<p>In pg 4, Para II (Identification of the baseline scenario), it is clearly mentioned that, "If the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following:</p> <p><i>Electricity delivered to the grid by the project activity would have otherwise been generated by the</i></p>	The response provided by the PP is acceptable since the description provided in the PDD is in line with the applied approved methodology, hence CAR 6 is closed.



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Draft report clarifications and corrective action requests by validation team	Ref. To checklist question in Table 1	Summary of project owner response	Validation team conclusion
		<p><i>operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the .Tool to calculate the emission factor for an electricity system.</i></p> <p>The project activity involves installation of grid-connected renewable power plant (WEGs), supplying electricity to the state grid. In the absence of the project activity, equivalent electricity would have been supplied by the grid-connected power plants and by the addition of new generation sources.</p> <p>Hence, the description of how the baseline scenario is identified and description of the identified baseline scenario is in line with the approved baseline and monitoring methodology.</p>	
<p>CAR 7</p> <p>The source of data is stated in the PDD. From the site visit and the office discussions it is noted that</p>	<p>Table-1</p> <p>3.t.ii.a and 7.d</p>	<p>The procedure for calculating the</p>	<p>The procedure of how the net electricity is determined has been described in the revised PDD. The</p>



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Draft report clarifications and corrective action requests by validation team	Ref. To checklist question in Table 1	Summary of project owner response	Validation team conclusion
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. "Value of the data" is not mentioned in section B.7.1 of the web hosted PDD.		net electricity has been described in detail in Section B.7.2 of the revised PDD. Estimated value of data has been mentioned in Section B.7.1 of the revised PDD.	approach adopted by the PP to determine the net electricity generation is agreeable to the validation team, hence CAR 7 is closed.
CAR 8 The PDD provides the description project boundary includes the physical delineation of the proposed CDM project activity. However during the validation site visit it was noted that the substation name stated in the PDD and actual substation names were not matching.	Table-1 5. c. a. i	The substation names in the PDD have been revised in line with the actual situation. The same have been mentioned below: Anantapur substation – Shahpuram Kurnool substation - Ankireddypalli	The revised PDD, Version 2.0 has been submitted by the PP. The validation team checked the B.3 section of the revised PDD and it was confirmed that the substation names mentioned in the PDD are same as the actual substation identified by the validation team during physical site visit. Hence CAR 8 is closed.
CAR 8 (a) Table showing sources and gases included in project boundary are not as per the applied baseline and monitoring methodology.	Table 1 5.c.a.ii	Table in Section B.3 mentioning the sources and gases is corrected in line with the applied baseline and monitoring methodology ACM0002, version 12.1.0.	The table in section B.3 of the PDD has been revised. The same has been checked by the validation team and found be to be in accordance with the applied baseline and monitoring methodology ACM0002, version



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			12.1.0., hence CAR 8(a) has been closed.
CAR 9 The PP in the PDD has stated that the alternatives are in compliance with mandatory legislation and regulations taking into account the enforcement in the region. However the PDD is silent on the applicable regulation or policies that prevent the alternatives from occurring.	Table-1 6. h.	There are no such regulations or policies which prevent any of the alternatives from occurring. Descriptions regarding non-applicability of any such policies or regulations that may prevent the alternatives from occurring have been included in the revised PDD.	The revised PDD, version 2.0 has been submitted, however the description provided in the PDD is not in line with the "Guidelines for completing PDD". The revised PDD, version 3.0 has been submitted by the PP. Section B.5 of the PDD has been checked and found to be in line with the Guidelines for completing PDD, hence CAR 9 is closed.
CAR 10 Section E.2 of the web hosted PDD is not presented in accordance with guidelines for completing the PDD.	Table 1 3.hh.i	The referred Section E.2 is presented in the revised PDD in accordance with guidance of completing CDM PDD.	The PP has revised E.2 section in accordance with the guidelines for completing the PDD. The revised PDD, version 2.0 has been checked and found to be meeting the requirements of the guidelines, hence CAR 10 is closed.

VALIDATION REPORT

COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

Sr. No.	Details of the commenter	Date of Comment	Comment [unedited]	Response by project participant	Explanation on how account is taken by DOE
1.	Submitted by: : Karthikeyan	Between 27/07/2011 to 25/08/2011	The return of 18.46% is very high. APERC has recommended a return of only 16%. EB has recommended much lower return. Why the PP has not given the calculation? The PDD is not transparent. DOE should not have published this PDD. PP should be asked to re webhost the PDD with all calculations on benchmark calculations so that global stakeholders can comment.	We would like to clarify that the Executive Board in EB 40 has ruled that the 16% post tax rerun on equity considered by regulatory commission is not a suitable benchmark. PP has calculated the benchmark cost of equity based on the latest guidelines of UNFCCC 'guidance to investment analysis issued in EB 62, Annex 5'. Detailed explanation on benchmark has been provided in PDD.	For ascertaining the same the Project Participant has made available the certificate dated 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.
2.	Submitted by: : Karthikeyan	Between 27/07/2011 to 25/08/2011	PLF is given as 22% and conveniently third party report is given as the base. There are other projects which have projected much higher PLF. APERC has also recommended higher PLF than what the third party has estimated. DOE should check actual generation and should not accept this PLF if it is higher. DOE is required to use its sectoral and local expertise in validating the input parameters	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 : Further PP has conducted the sensitivity analysis of 10% on PLF. Being more conservative PP did the analysis on PLF up to the value at which IRR crosses the benchmark which covers the PLF values of 24.5% as accepted by	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.



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<i>Sr. No.</i>	<i>Details of the commenter</i>	<i>Date of Comment</i>	<i>Comment [unedited]</i>	<i>Response by project participant</i>	<i>Explanation on how account is taken by DOE</i>
				APERC in tariff order. IRR crosses the benchmark at the PLF of 42.28 % for Anantpur site & PLF of 41.90% for Kurnool site, which is 92.20% higher than the base PLF of both the sites, provided by third party.	
3.	Submitted by: : Karthikeyan	Between 27/07/2011 to 25/08/2011	O&M cost cannot be more than Rs.6 lakhs and the escalation not more than 5%. Offer letter cannot be used to make the project additional. DOE should check other projects based on Enercon windmills. VVM does not require the DOE to accept the offer letter blindly, but requires it to use its sectoral and local expertise and also not to omit any evidence if it affects additionality.	Being conservative PP has done PP has done the sensitivity on 0% O&M cost and the IRR for the project activity is 8.79% which is below the benchmark value.	The validation team has considered the same and found that the escalation of O&M charges have been derived from the Offer Letter which was available to the Project Participant at the time of decision making.
4.	Submitted by: : Karthikeyan	Between 27/07/2011 to 25/08/2011	Besides taking a declaration from the PP, DOE should also check the annual accounts of the firm to ensure that the project is not financed by loan.	CA certificate has been submitted to DOE regarding 100% equity funding project.	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.
5.	Submitted by: : Karthikeyan	Between 27/07/2011 to 25/08/2011	For a wind mill project where is the question of receivables? What is the finance blocked to generate power. This should not be allowed. O&M cannot be for more than 30 days. DOE should check the O&M agreement	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.



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Sr. No.	Details of the commenter	Date of Comment	Comment [unedited]	Response by project participant	Explanation on how account is taken by DOE
				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&L of investment analysis. Further it is clarify that O&M agreement has not been executed till now since as per the offer letter O&M is free for 1 st year of operation.	
6.	Submitted by: : Karthikeyan	Between 27/07/2011 to 25/08/2011	It is a LLP. How can MAT be applicable to this firm? On what basis the consultant is providing for MAT? Moreover, why will firm apply book depreciation?	"MAT" is a typological error but "AMT" or Alternate Minimum Tax is considered as it is scheduled in last union budget 2011. Under the Finance Bill 2011, Section 115JC, Chapter XII-BA LLPs are liable to pay AMT at an effective rate of 19.055 per cent considering a 3% education cess. Further book depreciation has been applied as per Schedule XIV of companies act 1956.	The comment is valid and a similar approach has been adopted in the IRR computation by the project participant. The same has been accepted by the validation team.
7.		Between 27/07/2011 to 25/08/2011	DOE should check whether the consultant has taken tax savings into account in calculating financial indicator and the tax holiday. For this project with given parameters, the IRR cannot be this low.	Tax saving under section 80IA (100% Tax exemption in 10 consecutive years out first 15 years of operations) has already been considered in investment analysis sheet.	The assessment for the same has revealed that PP has taken the tax holiday into consideration in the computation of IRR.
8.		Between 27/07/2011	DOE should ensure that consultant does not add any inputs or modify	All the supporting documents have been submitted to DOE for	The supporting and evidence for the assumptions made has been



VALIDATION REPORT

<i>Sr. No.</i>	<i>Details of the commenter</i>	<i>Date of Comment</i>	<i>Comment [unedited]</i>	<i>Response by project participant</i>	<i>Explanation on how account is taken by DOE</i>
		to 25/08/2011	inputs to make the project additional	verification.	submitted by the PP.