



VALIDATION REPORT TUPPADAHALLI ENERGY INDIA PRIVATE LIMITED.

VALIDATION OF THE TUPPADAHALLI WIND ENERGY PROJECT

REPORT NO. INDIA -VAL/361.49/2011
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BUREAU VERITAS CERTIFICATION

62/71 Boulevard du Chateau
92571 Neuilly Sur Seine Cdx - France



VALIDATION REPORT

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Client: Tuppadahalli Energy India Private Limited.	Client ref.: Mr. Rajnish Krishanlal Sapra

Summary:
Bureau Veritas Certification has made the validation of the Tuppadahalli Wind Energy Project of Tuppadahalli Energy India Private Limited located in Gangaondanahalli, Gondihosahalli, Attighatta, Tuppadahalli, Malahulu, Pennasamudra, Bettakadur and Devarahosahalli villages of Shimoga and Chitradurga Districts in Karnataka 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/361.49/2011	Subject Group: CDM
Project title: Tuppadahalli Wind Energy Project	
Work carried out by: Mr. H. B. Muralidhar – Team Leader Mr. V. Senthil Kumar – Team Member	
Internal Technical Review carried out by: Mr. Sanjay Patankar <i>Sanjay Patankar</i> Ms. Sapna Pednekar <i>Sapna Pednekar</i>	
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Mr. Flavio Gomes, Global Product Manager

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1 INTRODUCTION

Tuppadahalli Energy India Private Limited has commissioned Bureau Veritas Certification to validate its CDM project Tuppadahalli Wind Energy Project (hereafter called “the project”) at Tuppadahalli village in the Hollalkere and Chennagiri Taluk of Shimoga and Chitradurga Districts in Karnataka 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 meets 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	H. B. Muralidhar	☒ Yes ☐ No	☒ DR ☒ SV ☒ RI
Verifier	V. Senthil Kumar	☒ Yes ☐ No	☒ DR ☒ SV ☐ RI
Technical	Not Applicable	☐ Yes ☐ No	☐ DR ☐ SV ☐ RI



Specialist			
Financial Specialist	CA. G. N. Jayaram	☐ Yes ☐ No	☒ DR ☐ SV ☐ RI
Internal Technical Reviewer (ITR)	Mr. Sanjay Patankar	☒ Yes ☐ No	☒ DR ☐ SV ☒ RI
Internal Technical Reviewer (ITR)	Ms. Sapna Pednekar	☒ Yes ☐ No	☒ DR ☐ SV ☒ RI
Specialist supporting ITR	Not Applicable	☐ Yes ☐ No	☐ DR ☐ SV ☐ 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 Tuppadahalli Energy India Private Limited 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, Tuppadahalli Energy India Private Limited revised the PDD and resubmitted it on 05/12/2011.



The validation findings presented in this report relate to the project as described in the PDD version 01.3 /P1/.

2.2 Follow-up Interviews

On 28/04/2011 Bureau Veritas Certification performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Tuppadahalli Energy India Private Limited were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Tuppadahalli Energy India Private Limited	➤ Project conceptualization, CDM consideration, Additionality, Operational aspects and Management Structure, Project Design Document, Application of Baseline and Monitoring Plans.
Local Stakeholder	➤ Views and Concerns about the Project Activity. ➤ Confirming that Tuppadahalli Energy India Private Limited had conducted a formal Stakeholder Consultation Meeting.
Emergent Ventures India Private Limited	➤ Emission Reduction calculations.

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 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 11 Corrective Action Requests (CARs) and 18 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 this project activity. There are no other Host Parties involved in this project activity. M/s. Tuppadahalli Energy India Private Limited., on 27/09/2011 received the Letter of Approval (LoA) from the Ministry of Environment and Forest (MoEF) the DNA for India. The copy of (LoA) with Project ID No: 422/01/2011, Dt., 27/09/2011 was submitted to the validation team. The validation team confirmed the authenticity of the approval from the DNA's website http://www.cdmindia.in/approved_projects.php /B22/. 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 HCA approval and also confirmed the authenticity of the approval from the website of DNA of India.

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



Bureau Veritas Certification considers the letters are in accordance with paragraphs 45 - 48 of the VVM

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: 422/01/2011. The validation team concluded this by reviewing the Letter of Approval (LoA) Ref no: 4/12/2011-CCC dated 27/09/2011/P5/ which describes that the participation of 'M/s. Tuppadahalli Wind Energy Private Limited' being approved by the Host Party DNA (Government of India), which is a party to the Kyoto Protocol.

3.3 Project design document (VVM Paragraph - 57)

The validation team has compared the revised PDD (version 01.3) with the latest PDD forms and guidance documents for completion of a PDD.

The Project Design Document of the project activity titled "Tuppadahalli Wind Energy Project" has been prepared using the latest PDD format and as per the latest guidelines for completing the project design document, version 7.0 /B3/, 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) (EB41 Annex 12).

3.4 Changes in the Project Activity

The final PDD version 01.3 /P1/ has the following changes as compared to PDD version 1.0 /P4/ which was webhosted for the Global Stakeholder Comments:



1. The entities to which generated electricity will be supplied and sold to has been included in the A.2 section of the PDD;
2. Substation name has been added in the A. 4.1.3 of the PDD;
3. The nearest airport, railway station to the project activity's site has been updated in the A. 4.1.4 section of the PDD;
4. Section A.4.3 of the PDD has been included the name of the regional grid;
5. The version and applicability conditions in the revised PDD are now updated to meet the requirements of ACM0002 Version 12.2.0, EB 65.
6. The sources and references of the assumptions made in the section B.5 of PDD are provided;
7. 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;
8. Section B. 7.1 of the PDD has been updated to indicate the correct measurement methods and QA & QC procedures;
9. Section B. 7.2 of the PDD has been updated to demonstrate the actual QA & QC procedures which would be adopted at project site;
10. The entity responsible for performing the calibration of energy meters has been updated in section B.7.2 of the revised PDD;
11. Section D.1 of the PDD has been updated to include the information on the impact on environment during the operational lifetime of WTGs;
12. Section E.1 of the PDD has now included the names of the stakeholder who had put forth there comments during the local stakeholder meeting;
13. Latitude and Longitude details are presented in the Annex 5 of the revised PDD;

3.5 Project description (VVM Paragraph - 64)

The project activity involves the installation of Wind Turbine Generators (WTG's) in Shimoga and Chitradurga Districts in Karnataka State, India. The proposed CDM project activity is developed by 'Tuppadahalli Energy India Private Limited', an Special Purpose Vehicle (SPV) which is registered as an Indian company which is a 100% subsidiary of the Spanish Acciona group of companies, viz., Acciona Energía Internacional, S.A. and Acciona, S.A which are based in Spain. The project activity comprises of 34 WTGs, each of capacity 1.65 MW manufactured by "Vestas Wind Technology India Private Limited", the total installed capacity of the project activity is 56.10 MW. The electricity generated from the project activity will be supplied to Mangalore Electricity Supply Company (MESCOM) of the state grid under a long-term Power Purchase Agreement (PPA). Mangalore Electricity Supply Company (MESCOM) is a licensed electricity distribution company, owned and controlled by the



State Government of Karnataka, and forms the part of Southern Regional Grid of India.

The validation team at the time of site visit and office discussions had verified the agreement between the PP & Department of Energy, Government of Karnataka /P17/, supply contract. During the course of validation, the first 15 WTGs were commissioned on 29/07/2011 /P6/ and the remaining 19 WTGs were commissioned between 02/08/2011 to 31/10/2011/P7/. The copies of the commissioning certificates were made available to the validation team. From the certificates submitted, validation team was able to ascertain that all the WTGs of project activity were connected to the grid.

Based on the document assessment and physical visit to the site, the validation team is able to confirm that the project activity is a Greenfield project with total installed capacity of 56.10 MW and total of 34 newly installed WTGs. The validation team based on the commissioning certificate is able to ascertain that the project activity is a newly grid connected power project.

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 “Tuppadahalli Wind Energy Project” uses the approved methodology ACM 0002, Version 12.2.0/B5/. At the time of webhosting the PP had applied ACM 0002, Version 12.1.0.

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.

1. The supply contract between M/s. Acciona India Energy Private Limited and M/s. Vestas Wind Technology India Private Limited /P9/ for the supply of wind turbine generators and physical verification at site indicates that the project activity involves installation of wind turbine generators alone and therefore is a renewable energy project. The supply contract and physical verification at the site confirm that the wind turbine generators are new and are not transferred. The project activity is located on a leased forest land where no renewable power plant was operated



prior to the implementation of the project activity and is therefore classified as Greenfield project.

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 EGPJ 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.

2. From the Supply Contract and the physical verification at the site it is confirmed that the project activity is not a retrofit or replacement of older wind turbine generators with new wind turbine generators. However, the webhosted PDD did not contain enough information to ascertain whether project activity was a capacity addition or not. Hence the validation team raised CAR 10 to have clarity as to why the proposed project activity should not be considered as capacity addition, since a statement in Section B.5 section of the webhosted PDD states that there is already a registered CDM project. The project participant in his response clarified that the proposed project activity is a Greenfield project set up under Tuppadahalli Energy India Private Limited – a new company incorporated for the purpose operating and managing the wind power project. The already registered project activity is under the company named Acciona Wind Energy Private Limited which is the sister concern of PP. Both are different entities, and the projects are implemented at two different locations at different intervals of time. The projects have different tariff rates, selling electricity to different utilities, and most of all are not sharing any expenses or revenues for tax efficiencies under Indian tax law. The PP also made available the Agreement with the Government of Karnataka /P17/ for setting up the wind project and the supply contract agreement with the equipment supplier. Both these documents confirm the name of the company which is solely responsible for establishing the project activity and implementation. Based on the physical site visit, response and documentary evidence, the validation team is able to confirm that the project activity is Greenfield project but not a capacity addition, hence the CAR 10 was closed.

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.*

3. The above mentioned criterion is not applicable to the proposed project activity since the project activity is wind based power project and not a hydro power project.

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.*

4. Not Applicable.

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.

5. Based on the agreement between the Project Participant and the Department of Energy, Government of Karnataka /P17/ it is confirmed that the electricity generated from the project activity is transmitted through Karnataka Power Transmission Corporation Limited and supplied to MESCOM, which forms the part of Southern Regional Grid of India. The same has been cross checked from Central Electricity Authority (CEA) database /B8/, Karnataka state falls under the Southern Regional Grid of India, the geographic and system boundaries of which are clearly identified and information on the characteristics of the grid is available.

Physical verification at the site confirmed that it is not an add up of a renewable and non-renewable component and only wind turbine generators are involved in the project activity and the capacity is 56.10 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.



The validation team hereby confirms that the selected baseline and monitoring methodology, ACM 0002, Version 12. 2. 0., /B5/ is previously approved by the CDM Executive Board, and is applicable to the project activity, which complies with all the applicability conditions therein.

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

3.6.2 Project boundary (VVM Paragraph - 80)

The spatial extent of the project boundary is assessed through the description in the PDD and the grid structure in India as known from the official data available from the Central Electricity Authority (CEA) /B8/. The project activity boundary therefore includes the project activity WTG and all power plants connected physically to the southern regional grid of India.

The consideration of only CO₂ gas for the baseline emissions is conservative and in line with the methodology and hence appropriate. The electricity imported by the project activity is accounted in the net electricity exported by the project activity, EGy. There are no other sources of project emissions. Hence, in line with the applied methodology, project participant has considered project emissions as zero for renewable energy projects. Further, it is also confirmed through the verification of supply contract for the WTG that the equipments of the Project Activity are new and the project does not involve any transfer of equipment from or to the project activity and thus there is no leakage accountable to the project activity.

The project design is sound and the geographical (villages of Gangaondanahalli, Gondihosahalli, Attighatta, Tuppadahalli, Malahulu, Pennasamudra, Bettakadur and Devarahosahalli of Shimoga and Chitradurga Districts of Karnataka state, India) and temporal (20 years) boundaries of the project activity are clearly defined. Project participant has taken a lifetime of 20 years for the WTG.

The validation team confirms that the only greenhouse gas relevant to the project activity is CO₂. This gas is addressed by the applied methodology. Based on the above assessment, the validation team hereby confirms that the identified boundary and the selected sources and gases are justified for the project activity.



3.6.3 Baseline identification (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", Project Participant has used the official published data on operating and build margin emission factors /B6/. The version of the data used is Version 5, which was available on the start date of validation viz; webhosting date of the PDD. This data is published by Central Electricity Authority (CEA), which is the sole authority for the publication of such data in India. This data is based on Version 1.1.0 /B13/ of the 'Tool to calculate the emission factor for an electricity system'. The project participant has used the same version of the tool and have opted to use Option I which excludes off-grid power plants. Hence CEA database can still be used. The project participant has applied weight factors for the OM and BM [75% & 25% respectively] as specified in the tool to arrive at the emission factor for the combined margin. The years considered for OM are 2006-07, 2007-08 & 2008-09 and for the BM it is 2008-09. Accordingly, the combined margin emission factor is 0.9445 tCO₂/MWh.

The Version 5.0 of CEA database has used "Tool to calculate the emission factor for an electricity system", Version 01.1.0 /B13/. The Validation Team compared the latest version of tool (EB 63, Annex 19 - Version 02.2.1/B14/ with the version 01.1.0. 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 project activity is connected to the Southern Regional Grid which is part of the Indian Regional Grid (electricity system) and this electricity /grid system is not located partially / totally in any Annex I country.



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

Hence, the CEA database version 5.0, 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 since it is based on the official background data published by 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 and its office 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.

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

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

- (a) All the assumptions and data used by the project participants are listed in the PDD, including their references and sources;
- (b) All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD;
- (c) Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable;
- (d) 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 ACM 0002, version 12.2.0, the baseline for a new grid connected renewable power plant /unit (green-field project) is defined as 'Electricity



delivered to the grid by the project activity' would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system". The project participant has calculated the baseline emissions by multiplication of the net electricity supplied by the project activity to the grid and the grid emission factor. The detailed algorithms are transparently described under sections B.6.3 of the revised PDD /P1/.

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

$$BE_y = EG_y * EF_{grid, CM, y}$$

where,

BE_y = baseline emissions

EG_y = quantity of net electricity supplied to the grid by the project activity

$EF_{grid, CM, y}$ = combined margin CO_2 emission factor of the grid

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

$$ER_y = BE_y - PE_y$$

where,

ER_y = emission reductions from the project activity

PE_y = project emissions from the project activity

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

Validation team assessed the calculations of estimated CERs as provided by project participant in a spreadsheet /P18/. The assumptions in this spreadsheet were validated as follows -

Parameter	Source	Validation Justification
Capacity of Project = 56.10 MW	Supply Contract between the equipment supplier and PP.	The total capacity of the project activity in the PDD is matching with the capacity mentioned in the supply contract. The erection & commissioning agreement has also been crosschecked to ascertain that the capacity is same as mentioned in the PDD.
No. of WTGs = 34 in	Supply Contract	The no. of WTGs



Nos.	between the equipment supplier and PP.	stated in the PDD and those mentioned in the supply contract are matching. The erection and commissioning agreement has also been cross checked to ascertain the no. of WTGs.
Plant Load Factor: 27.75%	Technical Report of the Project Participant, which is basis for decision making.	The PLF value has been derived from the Technical Report, which is based on the PP's resource analysis. 26.50% is the PLF as per KERC Tariff Order Dt., 11/12/2009, paragraph 'b' (page 25 of the order) /P12/.. This is based on actual PLF achieved by the wind power plants already in operation in the state of Karnataka. The validation team is of opinion that the PLF used by the PP in the PDD as appropriate and conservative.
Baseline Emission Factor for Southern Regional Grid: 0.9445tCO ₂ /MWh.	Central Electricity Authority, CO ₂ baseline database, Version 05.	CEA database is an official source of data and Version 5 was the version available at the start of validation viz; webhosting of the PDD for global stakeholder comments and hence acceptable

The estimated annual average of emission reductions is approximately 128, 809 tCO₂e over the 07 year renewable crediting period of emission reduction represents a reasonable estimation using the assumptions given by the project activity. All the assumptions for this estimate either come from the assumptions used for investment analysis or grid emission factor as taken from CEA website. These are already validated in section 3.6.3



of this report. The validation team confirms that the estimates of baseline emissions can be replicated using the information provided. It also can be verified using the spreadsheet /P18/ for calculations of CERs.

CL 1 was raised since the PP in webhosted PDD had not used the correct equation for the calculation of emission factor as per approved applied methodology. The PP in response to CL1 revised the PDD, which now describes transparently the algorithms used for calculating the emission factor in Section B.6.3, the same has been checked by the validation team, and hence CL 1 was satisfactorily closed.

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

- (a) All assumptions and data used by the project participants are listed in the PDD, including their references and sources;
- (b) All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD;
- (c) All values used in the PDD are considered reasonable in the context of the proposed CDM project activity;
- (d) The baseline methodology has been applied correctly to calculate project emissions, baseline emissions and emission reductions;
- (e) All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.

3.7 Additionality of a project activity (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 13/09/2010. 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 project activity is a Greenfield wind based power project 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 supply contract on the equipment supplier /P9/ for the supply Wind Turbine Generators (34 in Nos.). The validation team verified the original Supply Contract document and on the basis of the same confirms that 13th of September 2010 could be regarded as the “start date” of the project activity.



Prior to the placement of supply contract on the equipment supplier, PP had intimated the UNFCCC secretariat and Host Party DNA by submitting the “Prior Consideration of CDM Form on 23/08/2010 /P19/” thus meeting the requirement of EB 62 Annex 13 (guidance pertaining to parallel action towards securing the CDM status) for the project activity.

The PP had initially not submitted the proof of the intimation sent to UNFCCC secretariat and the Host Party DNA, hence the validation team raised CAR 7 and CL 9. In response to the CAR 7 & CL 9 PP submitted the email exchanges and Prior Consideration of the CDM form to the validation team. Hence CAR 7 and CL 9 were closed.

The validation team checked the UNFCCC website to ascertain that the said intimation was available, the team accessed the following URL and found that the intimation was available as on 23/08/2011.

<http://cdm.unfccc.int/Projects/PriorCDM/notifications/index.html>.

The validation team also accessed the to and fro email exchange between the Host Party DNA and the Project Participant. The confirmation email from Host Party DNA dt., 25/08/2010 /P20/ acknowledges the receipt of the Prior Consideration of the CDM Form received by the Host Party on 23/08/2010.

Based on the above assessment, the DOE hereby confirms that the proposed CDM project activity complies with the requirements of the latest version of the Guidance on prior consideration of CDM [EB 62 Annex 13].

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 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, it 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, itself 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 /B16/.

The initial webhosted PDD did not contain sources and references to the assumptions used in the B.5 section of the PDD. Hence the validation team raised CAR 5. In response to the CAR 5, the PP provided the supporting, references and URLs (where ever appropriate). Project participant made the assumptions transparent and rationalized the investment analysis in response to the CAR raised. The supporting, references and URLs were checked by the validation team and found that the supporting, reference and URLs were of relevance to the assumptions. Hence CAR 5 was closed.

The real action for the project activity was the placement of supply contract by the PP on the equipment supplier on 13/09/2010 /P9/ for the entire project capacity, which is after the intimation to UNFCCC and Host DNA in the form of Prior Consideration of CDM Form, dt., 23/08/2010.

The assumptions made in the financial analysis and as well validation team justification is summarised in the table below:

Parameter	Value	Source and Justification
Capacity of each WTG in MW	1.65	Initial Offer from Vestas Wind Technology India Pvt. Ltd. Dated 22/03/2010/P8/. The same has been checked by the validation team. The capacity of each WTG has also been cross checked by the validation team from the supply contract /P9/and erection & commissioning agreement /P10/ placed on Vestas Wind Technology India Pvt. Ltd, both the documents are dated 13/09/2010.
Number of machines	34	Initial Offer from Vestas Wind Technology India Pvt. Ltd. Dated 22/03/2010 /P8/. The same has been checked by the validation team. The no. Of WTG has also been cross checked by the validation team from the supply contract /P9/ and erection &



		commissioning agreement /P10/ placed on Vestas Wind Technology India Pvt. Ltd, both the documents are dated 13/09/2010.
Project capacity in MW	56.10	The initial offer received from Vestas Wind Technology India Pvt. Ltd. confirms the project capacity as 56.10 MW.
Plant Load Factor in %	27.75	Technical Report for Investment Review Dated 24/03/ 2010 /P11/. The same has been checked by the validation team. The same PLF value has been used in obtaining approval from the Government of Karnataka and also the same PLF value has been used while availing the loan from the Financial Institution.
Tariff in Rs / kWh	3.70	Karnataka Electricity Regulatory commission (KERC), 11/12/2009 order /P12/. Tariff is only fixed for the first ten years of the 20-year PPA.
Corporate Tax rate	33.22	Income Tax Act ¹
Minimum Alternate Tax	19.93	Income Tax Act ²
Debt Amount %	60	The debt amount % is based on the actual debt taken by one of the sister concern of the PP named Acciona Wind Energy Private Limited. The information of the total cost of project and debt amount availed is available on the public domain, the same was cross checked by the validation team. URL : http://www.acciona.com/news/acciona-concludes-the-long-term-finance-for-its-two-windparks-in-india-
Equity Amount %	40	The remaining 40% is also based on the previous experience of one of the sister concern of the PP named Acciona Wind Energy Private Limited. The information of the total cost of project and debt amount availed is available on the public domain, the same was cross checked by the validation team. URL :

¹ <http://www.taxguru.in/budget-2010/tax-rate-applicable-for-a-y-2011-12-on-income-dividend-wealth-mat-stt-capital-gain-and-presumptive-income.html>

² <http://www.taxguru.in/budget-2010/tax-rate-applicable-for-a-y-2011-12-on-income-dividend-wealth-mat-stt-capital-gain-and-presumptive-income.html>



		http://www.acciona.com/news/acciona-concludes-the-long-term-finance-for-its-two-windparks-in-india- The same has been accepted by the validation team
Interest Rate	11.75%	Is based on the interest rate for debt taken by one of the sister concern of the PP viz., "Acciona Wind Energy Private Limited". The loan sanction letter of "State Bank of India" (SBI) Dt., 14/12/2009, clearly states that the interest rate as 11.75%. The same was checked by the validation team and confirmed that the interest deducted for the IRR calculations and that mentioned in the SBI loan sanction letter were to be the same. The validation team also crosschecked the KERC order dated 11/12/2009 and from the order it was noted that interest rate prescribed was 11.75%. The PP's approach is in line with the paragraph 4 of the 'Guidelines on the assessment of Investment analysis', Version 5.0, EB 62. The assessment of validation team is meeting the requirements of paragraph 111 of the validation & verification manual, version 01.2.
Balance of Plant in INR. Million	517.00	Includes cost of Electrical & Non electrical equipments.
Preliminary and Pre-operative expenses in INR. Million	23.40	Includes the estimated cost of Wind Masts, estimated cost for Legal due diligence, Formation of Special Purpose Vehicle (SPV) – Tuppadahalli Energy India Private Limited, CDM Validation and registration cost.
Administrative Expense	16.04	The administrative expenses are related to the salary of the employees who are employed dedicatedly for this project activity. Also, expenses viz., Taxation, Statutory Audit and Regulatory Filings which are incurred year on year. The administrative expenses have been derived based on the prior experience of the PP's sister concern M/s. Acciona Wind Energy Private Limited (AWEPL)



		which is operating a large scale wind power project in the same state (Karnataka) which is a registered CDM project (UNFCCC Reg no: 1949). The audited annual report of AWEPL /P31/ was made available to the validation team. From the annual report it was noted that the project activity incurs a year on year expenses such as salary over heads, statutory & regulatory filings and fees paid for statutory audit. Having evidenced the actual expenses, the validation team is of the opinion that similar expenses are prone to occur in the proposed CDM project activity also. The validation team based on this assessment is able to conclude that the approach adopted by the PP to include administrative expenses is acceptable.
Total Project Cost in INR. Million	3,287	The total project cost is based on the initial offer received from the equipment supplier – Vestas Wind Technology India Pvt Ltd, Dt., 22/03/2010. The same has been checked and accepted by the validation team.
Interest During Construction (IDC) in INR. Million	77.254	Interest amount payable on actual loan amount during construction. IDC is calculated based on the interest rate prevailing at the time of decision making.
Insurance Charges	0.32	Was derived based on the prior experience of PP's sister concern, the audited annual report /P33/. The actual insurance order dated 27/05/2011 /P32/ was made available to the validation team, the insurance charges, the actual insurance charges was 7% less than the assumed value in the IRR computation. The validation team assessed the IRR computation with the actual insurance charges and it was noted that the IRR still remained below the benchmark.
O&M expenses	1.44 (1 st Year),	Was derived from the initial offer received from the equipment supplier /P8/. The value used in the IRR



	1.53 (2 nd year).	computation was matching with the values mentioned in the offer letter. The signed Operation & Maintenance agreement /P30/ was cross checked by the validation team and it was noted that actual values in the agreement and of those in IRR analysis sheet were the same.
Escalation on O & M Expenses	6%	The PP has assumed 6% year on year escalation on the expenses which is based on the initial offer / P8/ received from the equipment supplier who is also the operation & maintenance contractor for the CDM project activity. The financial analysis sheet and offer letter were checked and it was confirmed by the validation team that 6% has been used in assumptions and calculation of pre tax IRR. The signed Operation & Maintenance Contract dated., 13/09/2010 /P30/ was made available by the PP to the validation team. From the signed contract it is noted that the actual year on year escalation of operation & maintenance charges agreed between the PP and Operation & Contractor is 6%.

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

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

The assumptions made for the investment analysis were validated on the basis of the above approach. The method of calculation of the financial indicator used in the investment analysis, viz., the Project IRR, was independently validated by the financial expert CA. G. N.Jayaram, who is a qualified Chartered Accountant and also a part of the validation team. A certificate issued by the financial expert confirms that the PP's calculation procedure of the project IRR value is in accordance with established accounting practice.



Assessment of the suitability of assumptions in the IRR calculations:

Basic Assumptions:

1. Size of the project activity: Checked against Initial Offer /P8/ from the equipment supplier M/s. Vestas Wind Technology India Private Limited. The offer refers to the capacity of the project activity and confirms that the order was placed for Wind Turbine Generators of the same capacity as stated in the PDD.
2. No. of Wind Turbine Generators: Checked against supply contract /P9/ placed on the equipment supplier and the size of the project was also cross checked against erection & commissioning agreement /P10/ placed on Vestas Wind Technology India Private Limited. The supply contract placed on equipment supplier states the number of wind turbine generators for which order had been placed.
3. Cost of Wind Turbine Generators: Checked against initial offer letter received from the equipment supplier - Vestas Wind Technology India Private Limited/P8/. The offer from supplier was received by PP on 22/03/2010 and was available to the PP prior to the decision making. The values have been checked by the validation team and are found to be matching with the values used in the basic assumptions of investment analysis /P26/.



4. The EB guidance on the reporting and validation of PLF [EB 48 Annex 11] accepts PLF 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; The Plant Load Factor (PLF) is a function of annual gross electricity generation by the project activity.

The PLF value has been derived from the Technical Report Dt., 24/03/2010 /P11/, PLF has been determined based on the PP's resource analysis. The validation team based on the discussions, documentary evidence and reply to CL 15 is able to confirm that the Technical Report /P11/ which has been submitted to the validation team was the same submitted to the Government of Karnataka and to financial institution for availing the loan. Hence validation team accepts the PLF derived from the Technical Report since it meets the requirements stated in the paragraph 3 (a) of Annex 11 of EB 48 Guidelines for the reporting and validation of PLF /B12/ and Annex 05 of EB 62 (Guidelines on the Assessment of Investment Analysis) /B9/.

The validation team had also cross checked the PLF prescribed by the Karnataka Electricity Regulatory Commission (KERC) which states 26.50% as the PLF as per the Tariff Order Dt., 11/12/2009, paragraph 'b' (page 25 of the order)/P12/. This is based on actual PLF achieved by the wind power plants already in operation in the state of Karnataka. The validation team is of opinion that the PLF used by the PP in the PDD and as well as Financial Analysis as appropriate and conservative

5. Power Tariff: Deduced from the KERC tariff order for Renewable Energy Sources Dt., 11/12/2009 /P12/. The order prescribes Rs. 3.70/ kWh as the tariff for wind power projects, the order was available before the decision date. Hence, the validation team agrees with the assumption of tariff made by the project participant.

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 after the 10th year.



The validation team raised CL 17. In response to CL 17 the PP clarified that the tariff order of KERC dated 18/12/2005 /P13/ and as well the tariff order dated 11/12/2009 /P12/ which was available at the time of decision making illustrates that after tariff reduces year on year. The reason stated in KERC Order (Dt., 18/12/2005) for this reduction is: *"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. The Commission feels that for wind projects and as in the case of mini hydel, varying tariff from year to year on a reducing scale is not appropriate and may not give welcome signal to the developers to attract new investment. Therefore, the Commission decides to have a uniform average tariff for the first 10 year period for the wind projects."*

The reason why the tariff rate reduces after the 10th year is because the largest component of tariff being the servicing of debt (principal repayment and interest payments) and it is assumed that the loan repayment concludes by the 10th year of operations and these have already been factored in while determining the regulated tariff for the first 10 years. The tariff reduces gradually year on year and it is therefore clear that the tariff for the project activity beyond the initial PPA period would be lower. This is expected to happen in the cost plus tariff regulated power projects where the tariff reduces after the debt service is over. Hence in the financial analysis the fixed tariff of Rs. 3.70 kWh has been considered for the entire lifetime of the project activity. However in the sensitivity analysis the tariff has been subjected to 10% escalation and at this level of escalation the IRR does not cross the benchmark.

The validation team checked the tariff order of year 2005 and as well the tariff order of year 2009, to understand the approach adopted by the regulatory commission in determining the tariff for renewable energy projects. From the KERC order of year 2005 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 same approach has also been adopted in the KERC order of year 2009 for determining tariff. The validation team finds the approach adopted by the PP to be justifiable and acceptable, hence CL 17 has been closed.



6. Operation & Maintenance charges: Based on the initial offer received from the equipment supplier /P8/. The PP has identified Vestas agreement in Vestas Wind Technology India Private Limited. The copy of the initial offer /P8/ was made available to the validation team, the same was checked and confirmed that the same values have been used in the IRR computation. The copy of the signed operation & maintenance agreement between PP & O&M contractor /P30/ (Vestas Wind Technology India Private Limited) was made available to the validation team. The actual cost of operation & maintenance contract was matching with value assumed in the financial analysis. It was further noted that the cost of operation & maintenance for the 1st & 2nd year to be lower when compared to the subsequent years, since the cost involved for repair or modification of any WTG would be covered under equipment warranty which is available to the O&M contractor. Based on this assessment the validation team is able to conclude that the assumption for O&M cost taken by the PP in the financial analysis to be correct and matching with the value mentioned in the initial offer letter /P8/, hence the same was found to be acceptable by the validation team.

Escalation Operation & Maintenance charges: The PP has assumed 6% year on year escalation on the expenses which is based on the initial offer / P8/ received from the equipment supplier who is also the operation & maintenance contractor for the CDM project activity. The copy of offer letter was made available to the validation team and from the offer letter it is noted that the year on year escalation is quoted as 6%. The financial analysis sheet and offer letter were checked and it was confirmed by the validation team that 6% has been used in assumptions and calculation of pre tax IRR.

The signed Operation & Maintenance Contract dt., 13/09/2010 /P30/ was made available by the PP to the validation team. From the signed contract it is noted that the actual year on year escalation of operation & maintenance charges agreed between the PP and Operation & Contractor is 6%. The validation team based on this assessment is able to conclude that there has been no inconsistency or discrepancy in the escalation % assumed and actual escalation %.



7. Ministry of New and Renewable Energy (MNRE) Generation Based Incentive (GBI): The project activity is eligible for generation-based incentive of Rs.0.50 per unit (kWh) for a period of ten years. But this incentive is not available to Project Participants who will avail the accelerated/enhanced depreciation benefits under the Income Tax Act, 1961. The PP has mentioned the same in the B.5 section of PDD under the financial assumptions. The PP has categorized GBI under the 'E- policy' and hence the incentive of Rs. 0.50 per unit had not been applied in the financial analysis. The IRR without GBI worked out to be 9.31%

The validation team referred the guidelines available with respect to E- policy and following were noted:

Annex 3 of EB 22 "Clarifications on the Consideration of National and or sectoral policies and circumstances in Baseline Scenarios", Paragraph 6.b the Annex states that "National and/or Sectoral policies or regulations that give comparative advantages to less emissions-intensive technologies over more emissions-intensive technologies (e.g. public subsidies to promote the diffusion of renewable energy or to finance energy efficiency programs).

And paragraph 7.b states that – "National and/or sectoral policies or regulations under paragraph 6 (b) that have been implemented since the adoption by the COP of the CDM M&P (decision 17/CP.7,11 November 2001) need not be taken into account in developing a baseline scenario (i.e. the baseline scenario could refer to a hypothetical situation without the national and/or sectoral policies or regulations being in place).

The Generation Based Incentive was announced by Ministry for New and Renewable Energy (MNRE), Government of India on 17/12/2009, which is after the adoption by the COP of the CDM M&P (decision 17/CP.7, 11 November 2001).

Since, the project activity would be eligible for the GBI benefits and would form a part of cash flow therefore the validation team raised CAR 11 and requested PP to submit IRR with GBI benefits.

In response to CAR 11, the PP revised the IRR and included the GBI incentive as a part of cash inflow and submitted spreadsheet /P15/. As per the webhosted PDD IRR without GBI benefits worked out to be 9.31%.



The validation team checked revised spreadsheet, version 04 and also accessed the Ministry of New and Renewable Energy (MNRE) webpage (<http://mnre.gov.in>) to understand the eligibility criteria of Generation Based Incentive for Wind Power Projects. From the information available it is noted that the GBI scheme came into effect on 17/12/2009 and the projects with installed capacity of more than 5 MW which are grid connected are eligible for the GBI scheme.

The GBI scheme allows the Project Developers to claim a maximum amount of INR. 6.20 Million per MW, however if GBI is claimed then the developer is not eligible to claim the accelerated depreciation benefit under Section 32 of the Income Tax Act 1961.

The PP is eligible to claim INR. 6.20 Million per MW (which is as per the MNRE guidelines). For the project size of 56.10 MW the eligible incentive works out to be INR. 347.82 Million. The PP has claimed INR 347.82 Million in the revised IRR calculation sheet, version 04 /P14/. The IRR with GBI works out to be 10.55% and still remains below the benchmark. It is also crosschecked that accelerated depreciation has not been taken into account by the PP. The projects have to be registered with Indian Renewable Energy Development Agency (IREDA) to claim GBI. The projects which are claiming the GBI incentive are required to encrypt a Unique Identification Number (UID) painted in Green on the Wind Turbine Generators, these numbers (UID) to the projects are allotted by IREDA.

The IRR sheet with GBI was submitted by the PP, the IRR with GBI benefits does not cross the benchmark. Even though the PP has categorized GBI under E- policy, the validation team was not able to conclude that the GBI would fall under the E- policy, due to limited guidance available with respect to inclusion of E- policy in demonstrating additionality. The validation team has concluded based on the IRR with GBI, Based on satisfactory response and submission of IRR with GBI benefits CAR 11 was closed.



8. Interest During Construction (IDC): Interest During Construction is assumed for a period of 8 months, the interest amount payable on the actual loan amount during the construction period. This is the actual interest payable on the debt part of the capital cost. Even if the project has not been commissioned, the interest part has to be met by the PP according to the loan draw down schedule and this element forms part of the capital cost for the project. The loan approval letter from State Bank of India (SBI) dated 14/12/2009 for the already commissioned wind power project of Acciona Wind Energy Private Limited was made available to validation team. From the letter it is noted that the interest rate offered by the bank to borrowers was 11.75%.

The IDC amount is computed at a rate of interest of 11.75%, which is the same used in the computation of investment analysis and justified by the validation team in the paragraph above. The same amount has been capitalized. The financial expert who is a part of this validation team confirmed that capitalization of the interest payable during project construction period is standard practice and is also in line with accounting principles in India. The validation team cross checked KERC tariff order dt., 11/12/2009/P12/ which was available at the time of decision making), KERC has also considered the prevailing interest rate of 11.75%. The PP's approach to compute IDC based on the prevailing interest rate is acceptable to the validation team.

9. Pre-operative and Preliminary Expenses: The pre-operative and preliminary expenses consist of wind mast, environmental impact & legal due diligence fees paid to the third party consultants, legal fees & documentation fee for the formation of Special Purpose Vehicle (SPV) and CDM related expenses viz., validation cost, registration cost. The information of the same has been derived from the Technical Report which was submitted to Board on 05/05/2010. The technical report /P11/ was made available to the validation team during the validation site visit. The validation team noted that the expenses presented in the report are the basis for the preliminary & pre-operative expenses of this project activity. The approach adopted by the Project Participant is acceptable to the validation team.



10. Balance of Plant (BOP): Balance of plant includes the other associated electrical and non electrical equipments such as transformers, conductors, over head transmission lines, construction of substation. The values in investment analysis have been derived from the offers received from the suppliers offers. The offer letters of three suppliers namely: i) Transformers & Rectifiers (India) Limited /P23/ ii) Areva T&D India Limited /P24/ iii) Elect Systems Engineers Private Limited /P25/ were made available to the validation team. The validation team from the offers noted that the values were matching with the values used in the investment analysis. It was also confirmed that the values were available to PP at the time decision making.

11. Employee & Administration Expenses: Electricity generation and sales is the core business of the Project Participant, "Tuppadhalli Energy India Private Limited". The company incurs year on year expenses which include salary overhead of the employees, Taxation, Statutory Audit and Regulatory Filings. The basis of taking employee and administrative expenses are based on the similar practice and prior experience of the sister concern of the PP named Acciona Wind Energy Private Limited's which has experience of operating a large scale registered CDM wind power project in Karnataka State, India. The audited annual report of Acciona Wind Energy Private Limited was made available to validation team, it was noted that the parameters (Taxation, Statutory Audit, Regulatory Filings and salary overheads) assumed in financial analysis were similar to the parameters considered in annual report. Based on the documentary evidence submitted to the validation team, the team is able to conclude that these expenses are expected to be incurred year on year for the proposed CDM project activity. PP's approach to add the employee & administration expenses in the financial analysis is acceptable to the validation team.

Escalation in Employee & Administration Expenses: The PP has assumed 6% year on year escalation on the expenses. The basis of arriving at 6% is the long term inflation forecast by the Reserve Bank of India (viz., Central Bank of India) for the next 10 years and the mean WPI and CPI inflation rate are 5.0% and 6.0%. The prevailing inflation¹ at the time decision making (May 2009² to May 2010) was 14% as per CPI Index and 10% as per WPI Index.

¹ Ministry of Labour & Employment : <http://labourbureau.nic.in/>

² Ministry of Commerce & Industry : <http://eaindustry.nic.in>



The report published by Reserve Bank of India (viz., Central Bank of India) and inflation information available on the Government of India websites were made available to the validation team.

The validation team was able check the information by accessing the RBI website and the relevant Government of India website and was able to conclude the escalation rate assumed was in conjunction with the forecasted inflation rate of RBI at the time of decision making.

Based on the above assessment, the validation team is able to conclude that the selection of 6.0% as the escalation percentage as conservative. Since the inflation forecasted is based on the long term objective of the Host Country (10 years) and is conservative as compared to the prevailing inflation rate at the time of decision making, the PP's approach of assuming 6% escalation is acceptable to the validation team.

12. Insurance Charges: The insurance charges were derived based on the prior experience of the PP's sister concern named Acciona Wind Energy Private Limited. The insurance charges per WTG works out to be 0.32 Million Rupees per WTG, for the 34 WTGs the total insurance cost works out to be 11 Million Rupees. The PP submitted the audited annual report /P31/ of the sister concern. The validation team is able to conclude that the audited report was available to the PP at the time of decision making. The approach adopted to derive the insurance cost is based on a prior experience of a similar large scale registered CDM project is agreeable and acceptable to the validation team. It was also noted that the PP has fixed the insurance cost constant for the entire technical life time of the project activity and there was no escalation considered.

The actual insurance order dated 27/05/2011 /P32/ was made available to the validation team, the insurance charges, the actual insurance charges was 7% less than the assumed value in the IRR computation. The validation team assessed the IRR computation with the actual insurance charges and it was noted that the IRR still remained below the benchmark.

**Conclusion:**

The validation team has confirmed that the initial offer received from the equipment supplier and KERC Tariff order were available to the PP at the time of the investment decision for the project activity. Values such as Power tariff, Interest Rate and Generation Based Incentive are available on the public domain and were cross checked by the validation team by accessing the respective websites. The crosschecking of values revealed that there were no mismatches between the values in the assumption sheet of the IRR calculations and the values that were available from public references or sources.

Also, it was confirmed that the assumptions are based on references and sources available to the project participant as on the date of the Board decision (05/05/2010) and hence the same were accepted as valid, since they fulfill the requirements under paragraph 6 of EB 62 Annex 05 - Guidelines on the assessment of investment analysis and paragraph 114(a) of Validation & Verification Manual, 01.2, EB 55 /B6/.

Tax related assumptions:

Sections 205 & 350 in the Schedule XIV of the Companies Act 1956 specify the rates of book depreciation and salvage value that should be considered for various categories of assets. The financial expert in the validation team, CA. G. N. Jayaram has confirmed that the rates considered in the IRR calculations are in accordance with this schedule. The same are as follows:

- i. Book Depreciation on the equipment by the straight -line method (SLM): @ 5.26%;
- ii. Depreciation for machinery by Written Down Value (WDV) method @ 15%;
- iii. Salvage value: @5% (the Companies Act allows up to 90% depreciation on plant and machinery. The salvage value considered is 5%, which is conservative);
- vi. The income tax applicable at the time of decision making is taken @ 33.22%, which is as per the income tax act;
- iv. Minimum Alternate Tax is taken @ 19.93%, as per the Income Tax Act.



The validation team confirms that the project participant has applied all the statutory levies and taxes as per the rules which were applicable at the time of decision making.

The financial expert has also verified the arithmetical accuracy of the IRR calculations and found the same to be correct. The IRR calculations have been provided in an MS-Excel spreadsheet. The formulae used in the spreadsheet are readable. All the cells of the spreadsheet can be accessed and the data in the cells can be viewed, as the cells are unprotected. The assessment period for IRR value computation is taken as 20 years in line with the Annex 05 of EB 62/B9/.

The validation team hereby confirms that the principle adopted in making assumptions, projections and the computations for IRR value in the investment analysis, conforms to the accepted and standard accounting and taxation principles of the host country and is also in conformity with the requirements specified under Annex 05 Guidelines on Investment analysis of EB 62. The financial expert in the validation team has verified the IRR calculations and observed them to be in order.

**Benchmark (112)**

The project participant has used the pre tax project IRR as the financial indicator for demonstrating the investment analysis. The computation of Weighted Average Cost of Capital (WACC) and the selection of WACC as a benchmark for the financial indicator of pre tax project IRR is in line with the Paragraph 12 of the EB 62, Annex 05 /B9/ which provides guidance on the type of benchmark to be selected for the purpose of making an investment analysis.

Hence, the benchmark chosen can be regarded as suitable for the purpose of the investment analysis.

The WACC is a composite benchmark based on a weighted average of the cost of equity and debt and reflects the cost of capital employed for investment in a project activity. 'Cost of debt' and 'Cost of equity' are the two values necessary to be determined for arriving at the WACC. The debt: equity ratio considered for the weighted average cost of capital is 60%:40%, the debt equity structure has already been discussed in Section 3.7.2 of this validation report. Hence is accepted in line with the requirements in paragraph 12 of the EB 62 Annex 05 guidance on investment analysis.

The project participant has computed the cost of equity with the help of the Capital Asset Pricing Model (CAPM), using publicly available financial data. The CAPM is a widely accepted model by investors to estimate the expected rate of return on equity (Cost of Equity). The project participant has used the following equation to calculate the cost of equity. The "Beta" in the equation represents the risk involved in the project type.

$\text{Cost of Equity} = \text{Risk free return} + \text{Market risk premium} * \text{Beta}$
--

The formula used is as per the CAPM method for arriving at the cost of equity. This can be verified from the source of information provided on "http://en.wikipedia.org/wiki/Capital_asset_pricing_model".

The method used for the calculation of benchmark is in accordance with the Guidelines on the assessment of investment analysis (Annex 05, EB-62). The financial data used are standard in the market and hence the above approach for calculating benchmark was accepted by the validation team.



All the parameters used in calculation of cost of equity (by CAPM) were checked by the validation team for their appropriateness. The Risk free rate has been sourced from the 11 year weighted average yield on Central Government Securities and is based on data available from the Mid Year Report of Ministry of Finance (Government of India) published in December 2009 and therefore available to the project participant as on the date of decision, i.e. 05/05/2010. The risk free rate at the time of the investment decision was 7.16 %.

The validation team accessed the webpage link provided by the PP and confirmed that the weighted average interest on Central Government Securities / risk free rate in 2009-10 was 7.16%. The said information is available on page no 8 2009-10 Mid Year Report. The date of publication of this report was also checked and it was confirmed as December 2009, the said information was available to the PP at the time of decision making.

Market risk premium is calculated as the difference between a) the market return (over a sufficiently long period) and b) the risk free rate. The market return is arrived at based on the Bombay Stock Exchange (BSE) 500 data, which is a widely accepted market index for a diverse portfolio of 500 stocks across various industry sectors.

Beta Value:

The beta value for the project type, as stated in the PDD, is derived as a proxy value and based on the beta values of the listed stocks of a group of equivalent power generating companies in India that were listed on the Bombay stock exchange at the time of the project participant's investment decision. The companies that were considered for the computation of the beta value are as follows:

1. BF Utilities Limited.
2. CESC Limited.
3. Neyveli Lignite Limited.
4. Gujarat Industries Power Co Limited
5. Jai Prakash Hydropower Limited.
6. Reliance Infrastructure Limited.
7. NTPC Limited.
8. Tata Power Company Limited.



All the companies considered in the sample group for deriving the beta value fall into the same industry type, viz., “Power Generation & Distribution”. The project participant has computed the beta values for the stocks of these companies from market data available on the BSE web site www.bseindia.com/histdata/hindices.asp, which is an authentic and reliable source for market related data on listed Companies in India. The project participant submitted an excel spreadsheet computation of beta values. The average beta value for the 08 companies in the group is calculated as 0.84 and the same was used by the project participant to calculate the cost of equity.

Computation of the beta value:

a) Choice of market index- BSE 500

The beta value reflects the sensitivity of a particular listed stock to market fluctuations. All the companies chosen in the sample group for computing the beta value are listed companies on the Bombay Stock Exchange and authentic data on their share prices is available by accessing the BSE web site <http://www.bseindia.com/histdata/hindices.asp>.

For determining the beta value of the listed stock, a market index is required. The PP has selected the BSE-500 index for this purpose. Validation team agrees with the choice of BSE-500 as the market index due to the following reasons:

- BSE 500 index is based on the performance of 500 actively traded scrips on the Bombay Stock Exchange
- The index comprises of scrips in about 20 diverse and major industry segments such as capital goods, power, oil & gas, telecom, chemicals, petrochemicals, consumer goods, etc. and is therefore representative of the market based economy of the host country in terms of trends, performance and behavior. The CAPM method used for computing the expected return on equity (RoE) also is based on a well diversified portfolio of stocks.
- The BSE 500 index represents nearly 93% of the total market capitalization of BSE, as confirmed from the BSE web site www.bseindia.com

b) Index vintage (BSE 500)

The PP had used 11 years BSE 500 Index data in the computation of the WACC. The validation team raised CL 18 in order to understand the relevance of the period (11 years) with respect to the technical lifetime of the project activity.

In response to the CL18, PP stated that the BSE 500 index is a diversified



portfolio and represents a more robust and efficient face of the market. would be a comparable index due to the composition power sector companies which are listed in this index. The validation team's approach and acceptance of the BSE Index are discussed in detail in the following sections:

The BSE 500 index was launched by the Bombay Stock Exchange on 9th Aug 1999. The vintage of market index data that was available to the PP at the time of the investment decision (on 05/05/2010) was more than 11 years. The period for which historical values of the BSE 500 are available is less than the overall lifetime of the project activity. However, the vintage of 11 years immediately preceding the investment decision can be regarded as much more indicative of the prevailing state of the economy, market trends, patterns and behavior, as it immediately precedes the investment decision date for the project activity. It can be expected that the economic and market conditions prevalent during the years immediately preceding the date of decision of the investment would have much greater impact on the determination of the investment benchmark and hence, the vintage for the market indicator (BSE-500) was accepted by the validation team.

The validation team believes therefore, that the vintage of data for the market index BSE-500 for the immediate 11 years prior to the investment decision is sufficiently relevant in the decision making context. The choice of BSE 500 as the market index was therefore accepted by the validation team.



c) Historical values of the BSE 500 index:

The BSE web site link <http://www.bseindia.com/about/abindices/bse500.asp> confirms that the BSE 500 index first came into being on 9th Aug 1999, with the base value of the index as 1000. The validation team confirms that BSE web site is a publicly available source of authentic data pertaining to stocks listed on the Bombay Stock Exchange and values of important indices such as the BSE Sensex, BSE 500, as well as other sector specific indices are published on a real time basis on this web site.

As such, therefore, it is confirmed that the PP (or any other investor) had access to this information on the BSE web site, since the web site was available in the public domain and hence, freely accessible.

The validation team checked the website "www.bseindia.com" and has been able to confirm that the said website was operational since 18/08/2000¹. Thus the validation team has been able to conclude that the data used for computing the benchmark was available to the PP at the time decision making., viz 05/05/2010.

The Beta value was computed for each of the 08 companies referred to above as the following ratio:

Beta = COVAR(Stock Return, Market Return) /VAR(Stock Return)
 COVAR (Stock return, market return) is the covariance of the individual stock of each of the 08 companies with respect to the market return.
 VAR (Market return) is the variance of the market return values

A detailed computation of the Beta value was presented to the validation team by the PP in the form of an excel spreadsheet. The computation was validated by the financial expert in the team and found to be correct.

The RoE according to the CAPM is then calculated as
 RoE = Risk free rate + beta * (Market return – Risk free rate)

The risk free rate as explained in the paragraph on "return on equity" above is 7.16%, being the rate of interest on long term Central Government securities. The market return is the return computed as the CAGR (Compounded Annual Growth Rate) on values of the BSE 500 index from the date of the inception of the index (Aug 1999) up to the date of investment decision (05/05/2010) and is worked out as 19.56%. This is also explained in the excel spreadsheet submitted by the PP to the validation team.

¹ http://www.bseindia.com/cirbrief/pr_19120.asp



The beta value was computed to be 0.84 in the same excel spreadsheet. Hence, the return on equity RoE is calculated as

$$7.16 \% + 12.40 * 0.84 = 17.57\%$$

Cost of Debt C_d :

The cost of debt was taken as the State Bank of India Advance Rate (SBAR) prevailing at the time of the investment decision and can be considered as a conservative value for the cost of debt in the market.

The PP has stated loan letter of an earlier project as the source for deducing the SBAR. The validation team checked the letter and it was noted that the SBAR given in benchmark calculation sheet viz., 11.75% /P22/ and information stated in the report were the same.

The validation team also cross checked the KERC order dt., 11/12/2009 which was available to the PP at the time of decision making and it was confirmed that the Interest Rate as 11.75% which is also based on the State Bank of India Advance Rate (SBAR)

- i) The value of the SBAR (11.75%) was available to the PP and prevailing at the time of decision,
- ii) Was correct and hence is accepted by the validation team.



All the companies considered in the sample group for deriving the beta value fall into the same industry type, viz., "Power Generation & Distribution". The project participant has computed the beta values for the stocks of these companies from market data available on the BSE web site www.bseindia.com/histdata/hindices.asp, which is an authentic and reliable source for market related data on listed Companies in India. The project participant submitted an excel spreadsheet computation of beta values. The average beta value for the 08 companies in the group is calculated as 0.84 and the same was used by the project participant to calculate the cost of equity.

The information has been derived from the BSE website, which was available to the PP at the time of decision making. The website of BSE was accessed by the validation team and confirmed that the information on BSE website was intact with the information used by the PP. The validation team checked the website "www.bseindia.com" and has been able to confirm that the said website was operational since 18/08/2000¹. Thus the validation team has been able to conclude that the data used for computing the benchmark were available to the PP at the time decision making., viz 05/05/2010.

The cost of debt was taken as the Lending Rate of the State Bank of India's Advance Rate (SBAR) /P22/ prevailing at the time of the investment decision and can be considered as a conservative value for the cost of debt in the market.

The loan approval letter, DT., 14/12/2009 /P22/ was made available to validation team the same has been checked and confirmed that the SBAR was 11.75% and the same was deduced in computation of WACC. The prevailing interest rate as per the KERC order 2009 /P12/ was also 11.75%.

Based on the above assessment the validation team accepts the approach and response provided by PP, hence CL18 is closed.

The pre tax WACC benchmark was computed in the above manner to be 14.08%, the validation team agrees benchmark is in accordance with the EB 62 Annex 05 Guidance on Investment Analysis.

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

¹ http://www.bseindia.com/cirbrief/pr_19120.asp



The validation team verified the correctness and authenticity of the data used for the calculation of cost of equity. The data used for the benchmark computation is based on such as market return, risk free rate of return, beta values of stocks which are standard market parameters. The data is obtained from sources that can be accessed and hence, could be validated by the DOE. The benchmark thus computed is a reasonable expectation of return by an investor and also meets the requirements of paragraph 15 of the EB 62 Annex 05 Guidelines on the Assessment of Investment Analysis and hence the validation team has accepted the same.

The validation team, based on the assessment carried out by the financial expert engaged who is a part of the validation team, hereby confirms that the assumptions for the investment analysis are appropriate and the financial calculations are correct.

The project IRR for the investment of this project works out to be pre tax project IRR after considering GBI benefits works out to be 10.55%. The project IRR value is lower than the benchmark (WACC) of 14.08%. 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 project 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, 3 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 and hence were selected, in line with the requirements of paragraph 20 of EB 62 Annex 13.

The following 3 parameters were subjected to variation:

1. Plant Load Factor
2. Project cost
3. Power Tariff (for sale of electricity to the grid)



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

Plant Load Factor: the assumption PLF is based resource analysis carried out by the PP at different Probabilities of Exceedance (is the probability of reaching a higher or lower annual energy production at different levels of probability) the different levels of probability of exceedance starting from P-90, P-75 and P-50. The PP has chosen PLF at P-50 which is 27.75% which is a reasonably conservative assumption, in the DOE's opinion. The project participant has subjected the PLF to +10% variation in the sensitivity analysis.

Even with a 10% increase in the net generation, the project IRR is still below the benchmark of 14.08%. The PP has also subjected PLF to 34.69%, which is 25% more than the base PLF of 27.75%, even with increase in PLF (viz., PLF of 34.69%) the IRR works out to be 13.45% which is still below the benchmark. The IRR crosses the benchmark only when the PLF is consistently 25.30% more (where PLF is 34.77%) than the base PLF provided that the same PLF (34.77%) is achieved year on year till the end of technical lifetime of the project activity. The validation team based on the sectoral experience and the fact that similar base PLF is provided to lenders for financing is able to conclude that the probability of the project activity achieving PLF 25.30% higher than the base PLF year on year is low, but may occur for shorter durations of less than one year, however it is unlikely in the long term perspective.

The validation team notes at P-50 levels the PLF achieved is at the highest level when compared to P75 (PLF-25.80%) and P90 (PLF – 23.00%). Therefore, it would be unlikely that the PLF could be up to 10% in excess of the estimated values on sustained basis throughout the lifetime of the project.

Project cost: At the time of validation, the supply contract and erection & commissioning (E&C) agreement with the equipment supplier was placed for the project activity. The validation team reviewed the supply contract and erection & commissioning agreement and found that the Project Cost is unlikely to reduce since the contract (supply) has already been placed and the PP is obligated to pay the fees or expenses stipulated in the contract and agreement. The possibilities of the project cost 10% lower than the assumed value is unlikely since the supply contract has already been signed. The PP has to adhere to contractual terms and is obliged to pay the obligated cost to the equipment supplier. However the possibilities of increase in the project cost is minimum, since the Equipment Supplier has already agreed to supply the equipment at the cost which is contemplated in the supply contract, but the possibilities of increase in the erection & commissioning may arise. Even with



possibilities of increase or decrease in the project cost the IRR still remains below the benchmark.

Power tariff: The tariff for purchase of power used by the project participant is governed by the applicable policies of the state Government. The order issued by the Karnataka Electricity Regulatory Commission (KERC) - Government of Karnataka on 11/12/2009 has clearly stipulated the tariff @Rs.3.70 per kWh. The PP has subjected to 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.3.70 per kWh) for the first ten years which is determined by Karnataka Electricity Regulatory Commission (KERC). The state utility is bound to pay the accepted tariff.

For the tariff from 11th year the Karnataka Electricity Regulatory Commission (KERC) 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 (pre-tax) still remains below the benchmark.

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.

The results of the sensitivity analysis indicate that even in situations favouring higher PLF, decrease in project cost and increase in power tariff, the project IRR for the investment would not cross the benchmark of 14.08%.



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 (two in numbers for two sites). The financial expert in the validation team also validated the accuracy of computations of the sensitivity analysis and confirmed that the same are correct. This meets the requirement of paragraph 111 (e) of Validation and Verification Manual, Version 01.2, EB 55 /B6/.

In conclusion, therefore, the project IRR for the project activity without CDM revenue works out as follows:

Pre Tax Project IRR with GBI Incentive works out to be 10.55 %; information pertaining GBI has been explained in Section 3.7.2 above of this validation report.

Also the sensitivity analysis carried out as per the EB 62 annex 05 Guidelines on assessment of investment analysis, the values of project IRR do not cross the benchmark (WACC). 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.

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

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 CAR 6 & CL 8. In response to the CAR 6 & CL 8, 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;

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2. Based on the different regulatory framework policy regime and investment climate, projects in Karnataka State only have been considered for the further analysis;
3. Wind projects in Karnataka 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 31/03/2009 has 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, 2009, 9th Edition. In this 9th edition of the directory the details of project were captured up to 31/03/2009, hence the same period range (01/01/2000 to 31/03/2009) was used for the analysis.

The 10th Edition of the Indian Wind Power Directory was available only in the month August, 2010 which was after the decision date of the PP (05/05/2010).

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 Karnataka (state) Region for common practices analysis. The PP approach to select Karnataka 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 capacity and comprising of a single investor has been considered in the common practice analysis. This ensures that the comparison is done with projects of similar scale and nature. 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 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 PP analysis there were 97 wind power projects of single owners/company and comprised of both large and small scale projects which were commissioned and in operation as on 31/03/2009. Of the total 97 wind power projects 83 projects were small scale (15 MW & below) and 14 were large scale projects which were owned by 12 single promoters. The outcome of analysis of 14 projects is presented below:

- 8 Large Scale projects are registered under CDM
- The remaining 6 Large Scale projects were under the different stages of validation seeking CDM Registration.

Since all the large scale projects in Karnataka 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 /B17/ 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 2009, 9th Edition/B18/ to ascertain the list of projects in the state of Karnataka. From the directory it was confirmed that the 14 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 further conducted an independent analysis to ascertain of the no. of wind power projects in the region and also the projects which were under the CDM cycle (registered & under validation). The validation team accessed the Karnataka Renewable Energy Development Agency Limited (KREDL) /B19/ website to cross check the list of wind projects installed and commissioned. From the website it was confirmed that the no. of large scale projects stated in the analysis was matching with the information provided in the PDD.



The validation team also accessed the UNFCCC website and was able to confirm for the period up to 31/03/2009 the total large scale wind power projects in Karnataka Region was 14 in numbers (8 registered projects & 6 under validation) 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 have been deduced from reliable sources and public domain (websites) which can be 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 Karnataka 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 methodology for the following reasons –

1. According to the methodology, there is only one variable that a windmill project needs to monitor, i.e., EGy, the net electricity supplied to the grid by the proposed Project Activity.
2. EFgrid,CM,y, the emission factor is fixed ex-ante based on CEA database, Version 5. This is in line with the EF tool as required by the methodology.
3. Project participant has provided provision for monitoring these parameters and for electronic 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, EGy, annually.



The calibration of energy meters would be performed annually by the MESCOM/KPTCL officials or an agency authorized by these state utilities. The calibration of energy meters would be as per Indian Standards (IS) 14697 – 1999 standards equivalent to International Electro technical Commission (IEC) 61000 4-5 standards. The accuracy class of meters is 0.2, the calibration of meters would be performed with the master calibrator of the same class or higher class (0.1) but not lesser class. If the master calibrator is of the same class, then the % of error in the meter would be applied in computation of emission reductions, which is conservative.

In case during the annual calibration, the meter is found to be outside the permissible limits of error, then the meter would be replaced immediately by the MESCOM and / KPTCL. The error identified in the energy meter during the annual calibration would be applied to all the monitored data since the date of the last calibration.

6. The monitoring frequency for EGy matches with that of the applied methodology, viz. continuous measurement and monthly recording. The cross checking will be carried out with sales receipts (invoices/receipts/bank statements), which indicates the payment made by the MESCOM to the Project Participant for the net electricity delivered by the Project Activity to the grid.

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

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

a. There is a main and check meter at the project site connected to groups of Wind Turbine Generator of the Project Participant.

b. The meters are of 0.2 accuracy class.

c. Monthly recording of the electricity supplied by the Wind Turbine Generator's is performed Jointly by the representatives of the Project Participant and MESCOM Officials.

d. Based on this monthly recording of the electricity generated by the project activity WTG's at the project site, MESCOM prepares and submits the monthly certificates / Form-B which is delivered to the PP for billing.

e. The Project Participant, based on this Form-B, prepares the invoice and submits it to MESCOM for release of payment.

f. The payment is made by the MESCOM to the Project Participant.

g. The cross checking will be carried out with sales receipts (invoices/receipts/bank statements), which indicates the payment made by MESCOM to the Project Participant for the net electricity delivered by the Project Activity to the grid.

The validation team physically verified the metering system installed at the site of the project activity. Monitoring plan was not correctly described in the webhosted PDD and hence CL 2 & CL 15 were raised. Project



participant revised the monitoring plan in the PDD and has now described the metering system in details in section B.7.1 & B.7.2 of the revised PDD. Validation team confirms that the description now correctly represents the metering system available at the project activity site. The validation team also interacted with the team of the O&M service provider; M/s. Vestas Wind India Private Limited, who is the equipment supplier itself. The agency is experienced in the monitoring system and is managing O&M of numerous other wind farm CDM projects.

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

CL 2 was raised since the monitoring plan was not described transparently in the webhosted PDD. The monitoring system was described in detail in the revised PDD and hence the CL 2 was closed.

CL 15 was raised since QA & QC procedures to deal with data uncertainties on account of meter failures were not addressed in the webhosted PDD and details regarding the data archiving was not stated. In response to the clarification PP revised the PDD to include procedures with respect to data uncertainties and data archiving. The response and corrections incorporated in the revised PDD /P1/ by the PP were found to be satisfactory and were meeting the requirements of the approved applied monitoring methodology ACM0002, Version 12.2.0 /B5/ hence CL 2 & CL 15 were closed.

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

3.9 Sustainable development (127)

The 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 projects of the scale of the project activity.

Project participant has obtained approval /P5/ from DNA of India. The letter of approval from the DNA confirms that the project activity contributes to sustainable development in India. The project activity is in compliance with all currently applicable legislations. As the project activity does not lead to generation of liquid or gaseous effluents and will



partly displace fossil fuel based electricity generation, there are only benefits derived out of the project and no adverse effects are envisaged. Moreover, the location of the project activity is in remote and economically backward region and hence contributes to the social well being of the region.

3.10 Local stakeholder consultation (130)

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

Local stakeholder consultation meeting to discuss stakeholder concerns on the Project Activity was conducted by the Project Participant on 20/10/2010 at the project site itself. The Project Participant had invited the local stakeholders to the meeting by publishing the meeting notice in the local English & Kannada (regional language) Newspapers, Dt., 09/10/2010. The validation team feels that the time provided [10 days] to the local stakeholders for providing comments on the Project Activity is adequate.

The notice published in the two newspapers was verified by the validation team /P21/. The list of participants, and minutes of the stakeholder meeting proceedings, including photographs maintained by the project participant was verified by the validation team. The stakeholders viewed this project as contributing to local environmental benefits and socio-economy. Overall, there was agreement that the project activity was a beneficial project from the local sustainable development.

During the validation site visit, the validation team also interviewed few of the local stakeholders who had attended the stakeholder meeting, to know their views about the project activity. The villagers confirmed that the stakeholder consultation meeting was held on 20/10/2010. The villagers expressed satisfaction over the wind power project in the region and confirmed that the project activity gives employment opportunity to the local public and thus contributes to the economical growth of the region. CL 5 and CL 6 were raised since the sections E.1 & E.2 of the webhosted PDD had not transparently described the local stakeholder process as mandated by the "Guidelines for Completing the Project Design Document".

In response to the CL 5 & CL 6 the PP responded by presenting the names of the stakeholders who had put forth their comments during the stakeholder meeting. The description of how the comments were invited and compiled was described in the PDD.

The validation team checked the corrections incorporated in the E.1 and E.2 section of the revised PDD, version 01.3 and it was confirmed that the



description provided were meeting the requirements of the “Guidelines for Completing the Project Design Document”. The CL 5 and CL 6 were closed based on the response provided and corrections incorporated in the PDD by the Project Participant.

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

3.11 Environmental impacts (133)

As per the Schedule of the EIA notification /B10/ given by the Ministry of Environment and Forests (Government of India) EIA is not a regulatory requirement in India for wind energy projects. Thus the project activity doesn't require EIA. The project activity does not involve any negative environmental impacts, as the Wind Turbine Generator's are installed for generation of power using wind which is a clean source of energy.

Project participant has obtained Letter of Approval (LoA) /P5/ from DNA of India and from the LoA the validation team has assessed that the project activity would contribute towards the sustainable development in India (Host Country). The project activity is in compliance with all current applicable legislations. The has been adequately addressed by the Project Participant in the PDD

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 04/02/2011 to 05/03/2011.

During the comment period a total of 07 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 “Tuppadahalli Wind Energy Project” in India. The validation was performed on the basis of UNFCCC criteria and host country criteria and



also on the criteria given to provide for consistent project operations, monitoring and reporting.

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

Project participant/s used the latest tool for demonstration of the additionality. In line with this tool, the PDD provides analysis of investment barrier 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 128,809 tCO₂e emission reductions per annum.

The review of the project design documentation (01.3) 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 'Tuppadahalli Wind Energy Project' as CDM project activity.



6 REFERENCES

Category 1 Documents:

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

- /P1/ PDD (revised), Version 01.3, Dt. 05/12/2011
- /P2/ PDD (revised), Version 01.2, Dt. 12/10/2011
- /P3/ PDD (revised), Version 01.1, Dt. 30/05/2011
- /P4/ Webhosted PDD, Version 01, Dt. 01/02/2011
- /P5/ Letter of Approval from the Host Country with reference no: 4/12/2011-CCC, Dt. 27/09/2011
- /P6/ Commissioning Certificate for 15 WTGs, Dt. 02/08/2011, Issued by Karnataka Power Transmission Corporation Limited.
Ref no: EEE/TL&SS/Smg/AET/2489-2500.
- /P7/ Excel sheet containing the date of commissioning of the remaining 19 WTGs.
- /P8/ Initial Offer received from equipment supplier, M/s. Vestas Wind Technology India Private Limited, Dt. 22/03/2010.
- /P9/ Supply contract between the PP and equipment supplier - M/s. Vestas Wind Technology India Private Limited, Dt. 13/09/2010.
- /P10/ Erection and Commission agreement between the PP and M/s. Vestas Wind Technology India Private Limited, Dt. 13/09/2010.
- /P11/ Technical Report submitted to Government of Karnataka and Financial Institution. – 24/03/2010, Revision 01.
- /P12/ KERC order for tariff, Dt., 11/12/2009
- /P13/ KERC order for tariff, Dt., 18/12/2005
[http://www.kerc.org/order2005/Order%20on%20NCE%20Tariff%20\(FINAL\).doc](http://www.kerc.org/order2005/Order%20on%20NCE%20Tariff%20(FINAL).doc)
- /P14/ Financial Analysis sheet, version 04, Dt 05/12/2011
- /P15/ Benchmark Analysis sheet, version 04
- /P16/ Board Resolution dated 05/05/2010
- /P17/ Agreement with the Government of Karnataka. Dt., 20/01/2011
- /P18/ Emission Reductions calculations sheet, Version 01, Dt., 28/03/2011
- /P19/ Prior consideration of the CDM form submitted to UNFCCC and Host Party DNA, Dt., 23/08/2010
- /P20/ Confirmation Receipt from Host Party DNA for submission Prior consideration of the CDM form, Dt., 25/08/2010
- /P21/ Stakeholder Meeting Invitation published in two Daily Newspapers namely: Deccan Herald and Udayavani, Dt., 09/10/2010
- /P22/ State Bank of India Advance Rate derived from Loan Approval Letter dated., 14/12/2009
- /P23/ Initial offer received from: Transformers & Rectifiers (India) Limited, Dt., 21/09/2009
- /P24/ Initial offer received from: Areva T&D India Limited, Dt., 14/11/2009
- /P25/ Initial offer received from: Elect Systems Engineers Private Limited, Dt., 17/04/2010.
- /P26/ Initial Investment Analysis Sheet – Version 01, Dt 28/03/2011



- /P27/ Final Analysis Sheet – Version 02, Dt., 02/09/2011
- /P28/ Initial Benchmark Sheet – Dt 28/03/2011
- /P29/ Final Benchmark Sheet – Dt.,02/12/2011
- /P30/ Operation & Maintenance Agreement signed between PP and Vestas Wind Technology India Private Limited, Dt., 13/09/2010
- /P31/ Audited Annual Report of Acciona Wind Energy Private Limited, FY 2009-10
- /P32/ Final Analysis Sheet – Version 05, Dt., 16/03/2012
- /P33/ The PP has bought insurance from Oriental Insurance Company, dated: 27/05/2011.

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?id=Himachal%20Pradesh&reporttype=2
- /B2/ UNFCCC to check the participation of Host Party
<http://maindb.unfccc.int/public/country.pl?country=IN>
- /B3/ Guidelines for completing the Project Design Document, Version 07.0, EB 41.
- /B4/ ACM0002 - Consolidated baseline methodology for grid-connected electricity Generation from renewable sources, version 12.2.0, EB 65
- /B5/ ACM0002 - Consolidated baseline methodology for grid-connected electricity Generation from renewable sources, version 12.1.0
- /B6/ Validation and Verification Manual, Version 01.2 , EB 55,
http://cdm.unfccc.int/Reference/Manuals/accr_man01.pdf
- /B7/ UNFCCC Website: <http://cdm.unfccc.int/Projects/projsearch.html>
- /B8/ Central Electricity Authority (CEA): CO₂ Baseline Database, version 5.0
- /B9/ Annex 05, EB 62 - Guidelines on the assessment of Investment Analysis.
<http://cdm.unfccc.int/EB/index.html>
- /B10/ EIA Notification of 2006, URL: <http://envfor.nic.in/legis/eia/so1533.pdf>
- /B11/ Guidelines on the demonstration and assessment of prior consideration of CDM, Annex 13 of EB 62
- /B12/ Annex 11 of EB 48 – Guidelines for the Reporting and Validation of Plant Load Factors
- /B13/ Tool to calculate the emission factor for an electricity system – Version 01.1.0
- /B14/ Tool to calculate the emission factor for an electricity system – Version 02.2.0
- /B15/ Annex 05, EB 62 - Guidelines on the assessment of Investment Analysis.
<http://cdm.unfccc.int/EB/index.html>
- /B16/ Tool for the demonstration and assessment of additionality, Version 05.2.1, Annex 10 of EB 39.
- /B17/ Common Practice Comparative Analysis Sheet, Version 01, Dt., 23/08/2011
- /B18/ Indian Wind Power Directory – 2009,
- /B19/ List of Commissioned Wind Power Projects in Karnataka of Karnataka Renewable Energy Development Limited, URL:
<http://www.kredltest.in/Windenergyreport.aspx>
- /B20/ UNFCCC website: <http://cdm.unfccc.int/Projects/Validation/index.html>
- /B21/ CDM Pipeline – CDM Pipeline Overview, URL: <http://cdmpipeline.org/>



/B22/	Host	Party	DNA	Website:
	http://www.cdmindia.in/reports_list_details.php			
/B23/	UNFCCC			website
	http://maindb.unfccc.int/public/country.pl?country=IN			
/B24/	Tool for Demonstration and Assessment of Additionality, Version 06.0.0, Annex 21 of EB 65			

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. Rajnish Sapra – Chief Financial Officer, Tuppadahalli Energy India Pvt. Ltd
- /2/ Mr. Prashanth Vittal, Director, Tuppadahalli Energy India Private Limited.
- /3/ Mr. Oxford, Engineer - Tuppadahalli Energy India Private Limited.
- /4/ Mr. Manjappa – Farmer & Local Stakeholder
- /5/ Mr. J. R. Ravikumar - Local Stakeholder
- /6/ Mr. Rangaswamy - Local Stakeholder
- /7/ Mr. Shivappa – Farmer & Local Stakeholder
- /8/ Mr. R. Muthu Kumar – CDM Consultant, Emergent Ventures India Private Limited

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7 CURRICULA VITAE OF THE DOE'S VALIDATION TEAM MEMBERS

Mr. H.B. Muralidhar – Bureau Veritas Certification, Team Leader –

Graduate in Electrical Engineering with 25 years of experience power generation and distribution related fields as well as in management system auditing. 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.

Mr. V. Senthil Kumar:(Team Member) – Bureau Veritas Certification, Team Member –

He is a Environmental Engineer with over 6 years of experience in the consultancy domain related to Training and Implementation of Management Systems (ISO : 9000, 14000 & 18000). 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. Sanjay Patankar- Bureau Veritas Certification, Internal Reviewer

Educational qualifications: BE. (Mechanical) and M.E. (Mechanical)

He has over 20 years of experience in engineering manufacturing industry covering various functions like enterprise management, product design, engineering, tool & die design, improvements in the production shop, quality assurance & control and systems planning and implementation, including ISO 9001 based quality management systems. Working for the last 3 years in Bureau Veritas Certification (India) Private Ltd. as Lead Auditor for ISO 9001, 14001 and OHSAS 18001 standards/specifications. Has undergone training related to Clean Development Mechanism and is currently involved in validation and verification of CDM project activities.

Ms. Sapana Pednekar - Bureau Veritas Certification, Internal Reviewer

She is a Post Graduate in Environmental Science from University of Pune, India. She has total Industrial work experience of 6 years in the field of environmental studies of which more than 2 years experience was in the field of CDM and VCS consulting. She is working in Bureau Veritas Certification (India) Pvt. Ltd. for last one year and has undergone training related to Clean Development Mechanism and is currently involved in validation and verification of CDM/ VCS project activities.



APPENDIX A: COMPANY CDM PROJECT VALIDATION PROTOCOL



VALIDATION REPORT

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
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VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
1. Approval			COUNTRY A (India)	COUNTRY B (insert the country name)		
a. Have all Parties involved approved the project activity?	VVM	44	Letter of Approval from the DNA needs to be submitted by the PP. The letter of Approval from the Host DNA has been submitted by the PP.		CAR 1	OK
b. Has the DNA of each Party indicated as being involved in the proposed CDM project activity in section A.3 of the PDD provided a written letter of approval? (If yes, provide the reference of the letter of approval, any supporting documentation, and specify if the letter was received from the project participatn or directly from the DNA)	VVM	45	Please refer CAR 1 above			
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. The letter of Approval has been submitted by the PP.		(CAR 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	VVM	45.c				

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VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
proposed CDM project activity contributes to the sustainable development of the country?					
iv. Refers to the precise proposed CDM project activity title in the PDD being submitted for registration?	VVM	45.d			
d. Is(are) the letter(s) of approval unconditional with respect to (i) to (iv) above?	VVM	46	Please refer CAR 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			<i>PP1 (Tuppadahalli Energy India Private Limited)</i>	<i>PP2 (insert PP2 name)</i>	
a. Have all project participants been listed in a consistent manner in the project documentation?	VVM	51	The Project Participant name is mentioned as "Tuppadahalli Energy India Private Limited".	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. The letter of Approval has been submitted by the PP.	Not Applicable	(CAR 1) OK

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VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
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.	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 provided in annex 1 of the PDD.	OK	OK
e. Has the participation of each of the project participants been approved by at least one Party involved, either in a letter of approval or in a separate letterspecifically to approve participation? (Provide reference of the approval document for each of the project participants)	VVM	52	Please refer CAR 1 above.		
f. Are any entities other than thoseapproved as project participantsincluded 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 CAR 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 validationprepared in accordance with the latest templateand guidance from the CDM Executive	VVM	55	The PDD has been prepared in accordance with the latest template (Version 03) and the latest guidance. But the logo on the left hand side corner	CAR 2	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Board available on the UNFCCC CDM website?			of the PDD is not legible.		
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?	EB41	Ann 12			
i. Title of project	EB 41	Ann 12	Yes, the title of project is stated as “Tuppadahalli Wind Energy Project”	OK	OK
ii. Current version number and date of document	EB 41	Ann 12	The current version number is given as 02 and the date of document is mentioned as 01/02/2011.	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 but has exceeded the one page limit.	CAR 3	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.	OK	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 Parties are provided.	OK	Ok



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. Identification of Host Party			Government of India, has been identified as the host party.	OK	OK
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 Turbine Generators and approaches to the site (railway station, airport) are not presented in the PDD.	CAR 4	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 has been provided.	OK	OK
ii. Explanation of purpose of project activity with scenario existing prior to the start of project, scope or present activities and the baseline scenario.	EB 41	Ann 12			
iii. List and arrangement of the main manufacturing/production technologies, systems and equipments involved.	EB 41	Ann 12	Yes, the same has been provided	OK	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iv. The emissions sources and GHGs involved	EB 41	Ann 12	There are no 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.	OK	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			
i. The approved methodology and version number	EB 41	Ann 12	Approved methodology ACM0002 with Version 12.2.0 –“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 2.2.1, EB 63) 2. Tool for the demonstration and assessment of additionality (Version 6.0.0, EB 65)	OK	OK
l. 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	Yes the choice of methodology has been provided and justification whether the project activity is meeting the each applicability condition or not is provided.	OK	OK
ii. Documentations with references that had been	EB	Ann	Yes the documentation references have been	OK	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
used. This can be provided in Annex 3 instead	41	12	provided.		
m. In CDM-PDD section B.3 are following provided?	EB 41	Ann 12			
i. Description of all sources and gases included in the project boundary in the table	EB 41	Ann 12	The information has been provided.	OK	OK
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 baselines scenario is identified in accordance with the selected baseline methodology	EB 41	Ann 12	The approved methodology ACM 0002 version 12.2.0 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"	OK	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	EB	Ann			



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
to the webhosted PDD?	41	12			
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 are 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			



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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
q. In CDM-PDD section B.6.2 are following provided?	EB 41	Ann 12			
i. A compilation of information on the data and parameters that are not monitored throughout the crediting period but that are determined only once and thus remains fixed throughout the crediting period AND that are available 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 seven year (renewable) crediting period.	OK	OK
ii. The actual value period	EB 41	Ann 12	7 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	EB 41	Ann 12	Paragraph 11 of ACM 0002, version 12.2.0 has the following equation: $ERY = BE_y - PE_y$, but the equation provided in the PDD is different. PP to clarify the same.	CL 1	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
all relevant equations provided in the approved 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 7 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.	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, but the PP is required to clarify how the Net Electricity is being determined whether it is calculated or measured?	CL 2	OK
b. Where data or parameters are supposed to be measured, specify the measurement methods and procedures, including a	EB 41	Ann 12	Please refer CL2 above		



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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.					
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
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



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v. Relevant further background information in Annex 4	EB 41	Ann 12	The information has been presented in the B.7.2 and no 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 purchase order placed on the WTG supplier has been 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 available to support this start date	EB 41	Ann 12	The date of purchase order placed on WTG supplier, the description of the same has been provided in the PDD.	OK	OK
iii. If this starting date is earlier than the date of publication of the CDM-PDD for global stakeholder consultation by a DOE, description in Section B.5 contain a of how the benefits of the CDM were seriously considered prior to the	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



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starting date (EB41, Para 68).					
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	Yes, the expected operational lifetime is provided in years and months.	OK	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 renewable 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	The information about the renewable of crediting period is not stated in this C.2.1 section of the PDD but the same has been stated in the C.2.1.1 section. PP to clarify.	CL 3	OK
aa. In CDM-PDD section C.2.1.1 are dates in the following format: (DD/MM/YYYY) provided?	EB 41	Ann 12	The registration date has been mentioned as 01/04/2011, the PP is requested to clarify the same.	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	Yes, the length of the first crediting period is given in years and months.	OK	OK
cc. In CDM-PDD section C.2.2 is the fixed crediting period at most ten (10) years provided?	EB 41	Ann 12	Not Applicable.		
dd. In CDM-PDD section C.2.2.1 are the dates provided in the following format: (DD/MM/YYYY)?	EB 41	Ann 12	Not Applicable.		
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	EB	Ann	The host party does not mandate Environmental	OK	OK



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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?	41	12	Impact Assessment study to be conducted for wind power projects. The PP has performed environmental impact study on a voluntary basis, the same has been made available to the validation team.		
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 publishing the invitation on local daily newspaper in English in and Kannada (regional language). The invitation was published on 09/10/2010 in the daily newspapers Udayavani and Deccan Herald. The meeting was held on 20/10/2010 which is eleven days after the date of publication.	OK	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.	CL 4	OK
iii. The local stakeholder process has been completed before submitting the proposed project activity to the DOE for validation.	EB 41	Ann 12	Yes, the local stakeholder process was completed before the PDD was submitted to the validation team.	OK	OK
hh. In CDM-PDD section E.2 are following provided?	EB 41	Ann 12			
i. Identification of local stakeholders that have made comments	EB 41	Ann 12	The name of stakeholders who put forth the comments are not present in the PDD. PP to clarify.	CL 5	OK



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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	The PDD is not clear how the comments were received from the local stakeholders.	CL 6	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
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	VVM	58	The description of the project activity is provided in a manner where the reader can understand the	OK	OK



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understanding of the precise nature of the project activity and the technical aspects of its implementation?			precise nature and technical aspects of its implementation.		
b. Is the description of the proposed CDM project activity as contained in the PDD:	VVM	59			
i. sufficiently covering all relevant elements?	VVM	59	Yes, the PDD covers all the relevant elements.	OK	OK
ii. accurate?	VVM	59	There are a few points which need to be addressed, the same has been raised as CARs and CLs in the previous and succeeding sections.	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 utilizing existing equipments?	VVM	60	The proposed 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 emission reductions not exceeding 15,000 tonnes?	VVM	60	Not Applicable	OK	OK
e. If yes to (c) and (d) above, was a physical site inspection conducted to confirm that the description in the PDD reflects the proposed CDM project activity, unless other means are specified	VVM	60	The physical site inspection was conducted by the validation team on 28/04/11 and 29/04/11.	OK	OK



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in the methodology?					
f. If yes to (d.iii) above, was the number of physical site visits base on sampling?	VVM	60	Not Applicable	OK	OK
g. If yes is the sampling size appropriately justified through statistical analysis?	VVM	60	Not Applicable	OK	OK
h. For other individual proposed small scale CDM project activities with emission reductions not exceeding 15,000 tonnes per year, was a physical site inspection conducted?	VVM	61	Not Applicable	OK	OK
i. For all other proposed CDM project activities not referred to in paragraphs 59 – 61, was a physical site inspection conducted?	VVM	62	Not Applicable	OK	OK
j. If no, was it appropriately justified?	VVM	62	Not Applicable	OK	OK
k. Does the proposed CDM project activity involve the alteration of an existing installation or process?	VVM	63	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 methodologies selected by the project participants comply with the methodologies previously approved by the CDM Executive Board?	VVM	65	Yes, the baseline and monitoring methodology selected by the project participant is ACM 0002, version 12.2.0 which is approved by the CDM Executive Board.	OK	OK
b. Is the selected methodology applicable to the project activity?	VVM	66	Refer to (5.b.a) below	-	-



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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 6.0.0 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) below		
<i>b. Applicability of the selected methodology to the project activity</i>					



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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 12.2.0 is approved by the CDM executive board. The project activity being new installation of new wind turbine 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 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 an 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 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.	OK	OK
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	OK	OK
i. Is the DOE, based on local and sectoral knowledge, aware that comparable information is available from sources other than that used in the PDD?	VVM	71	Yes	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	OK	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	Yes, they are shown in a table format as per applied methodology.	OK	OK
b. Is the delineation in the PDD of the project	VVM	79	Yes the delineation has been provided in the	OK	OK



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boundary correct and include identification of all locations, processes and equipment including secondary equipment and associated processes such as logistics etc.?			PDD.		
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	7		
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	OK	OK
g. If yes, have the project participants justified that choice?	VVM	79	Not Applicable	OK	OK
h. If yes, is the justification provided reasonable? (provide reference to the supporting documented evidence provided by the project participants)	VVM	79	Not Applicable	OK	OK
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 CDM project activity?	VVM	81	The methodology prescribes grid as the baseline which is applicable to the project activity.	OK	OK



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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	Capacity addition – PP needs to describe how this is not a capacity addition to already existing registered CDM project.	CAR 10	OK
iii. If the project activity is the retrofit or replacement of existing grid-connected renewable power plant/unit, is the baseline scenario identified following the step-wise procedure in accordance with the ACM0002 ver.12.2.0?	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		
v. Are the realistic and credible alternative	ACM	0002	Not Applicable, as the methodology prescribes the		



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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)		v12.2.0	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 v12.1.0	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 those required by the methodology reasonable in	VVM	83	Not Applicable		

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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
e. Algorithms and/or formulae used to					



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determine emission reductions					
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: $ERY = BEy - PEy$, but the equation provided in the PDD is different. PP to clarify the same.	CL 1	OK
i. Are the Project emissions appropriately calculated?	ACM	0002 v.12. 2.0	Please refer CL1 above		
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	Please refer CL1 above		
iii. Are the Leakage appropriately calculated?	ACM	0002 v.12. 2.0	Please refer CL1 above		
iv. Are the Emission reductions appropriately calculated?	ACM	0002 v.12. 2.0	Please refer CL1 above		
c. Have project participants prepared as part of the CDM-PDD an estimate of likely emission reductions for the proposed crediting period? This estimate should, in principle, employ the same methodology as selected for the calculation	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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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 would not be monitored throughout the crediting period.	OK	OK
h. If no, and these data and parameters will remain fixed throughout the crediting period, are all data sources and assumptions:	VVM	91	The parameters are fixed ex-ante for the 7 year renewable 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 after validation of the project activity?	VVM	91	Yes	OK	OK

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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 version 6.0.0 available on the UNFCCC website.		
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 scenario identified for the project activity is continuation of current practice which is operation of grid connected power sources.	OK	OK


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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	Not Applicable		
ii. (b) Other realistic and credible alternative scenario(s) to the proposed CDM project activity scenario that deliver outputs services or services with comparable quality, properties and application areas, taking into account, where relevant, examples of scenarios identified in the underlying methodology;	EB 39	Ann 10	Not Applicable		
iii. (c) If applicable, continuation of the current situation (no project activity or other alternatives undertaken).	EB 39	Ann 10	The same has been 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 relevant country/region?	EB 39	Ann 10	Not Applicable.		
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



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h. Is the alternative(s) in compliance with all mandatory applicable legal and regulatory requirements, even if these laws and regulations have objectives other than GHG reductions, e.g. to mitigate local air pollution.?	EB 39	Ann 10	Yes, as per the Step 1b: the alternative is in compliance with mandatory legislation and regulations taking into account the enforcement in the region	OK	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	Yes, the alternative scenario to the project activity is in compliance with mandatory legislation and regulations taking into account the enforcement in the region and EB decisions on policies of region or sector	OK	OK
k. Has PP selected Step 2 (Investment analysis) or Step 3 (Barrier analysis) or both Steps 2 and 3?	EB 39	Ann 10	The 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: Optionl. Apply simple cost	EB	Ann	The project activity generates financial income	OK	OK



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analysis;	39	10	from sale of power to the grid, the PP has ruled out Option I of Applying simple cost analysis.		
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
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 Step 1 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	EB	Ann	Not Applicable		



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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	39	10			
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	Pre tax 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 have been considered.	OK	OK
iii. Discount rates and benchmarks shall be derived from: (a) Government bond rates, increased by a suitable risk premium to reflect private investment and/or the project type, as substantiated by an independent (financial) expert or documented by official publicly available financial data; (b) Estimates of the	EB 39	Ann 10	The PP has used Pre-tax weighted average cost of capital as the benchmark for this project activity. The B.5 section states that the project proponent has registered a wind power project	CL 7	OK



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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.			under CDM, PP clarify whether the same benchmark was applied to assess the variability of the project.		
q. Has the below guideline followed for Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III)?	EB 39	Ann 10			
i. Calculate the suitable financial indicator for the proposed CDM project activity and, in the case of Option II above, for the other alternatives. Include all relevant costs (including, for example, the investment cost, the operations and maintenance costs), and revenues	EB 39	Ann 10	Pre-tax IRR is selected as the financial indicator for the proposed project activity.	OK	OK



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(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.					
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 the financial indicator for the proposed CDM activity. Please specify details for above.	EB 39	Ann 10	Please refer CAR 5 above		
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	EB 39	Ann 10	The sensitivity analysis has been performed and the presented in the PDD. Plant Load Factor, Project Cost and Tariff Rate are selected as parameters to check financial attractiveness, PP to clarify why the operation & maintenance	CAR 8	OK



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reasonable variations in the critical assumptions.			parameter is not considered in the sensitivity analysis.		
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 with grants or other non-commercial finance terms. No private capital is available from domestic or international capital markets due to real or perceived risks associated with investment in the country where the proposed CDM project activity is to be implemented, as demonstrated by the credit rating of the country or other country investments reports of reputed origin.	EB 39	Ann 10			
ii. (b) Technological barriers: Skilled and/or	EB	Ann	Not applicable. Please refer 6.t above.		


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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.	39	10			
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.		
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	EB	Ann			



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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.	39	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 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,	EB 39	Ann 10			



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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	Yes, the sub-step 4 b: discussions of similar options that are occurring is followed.	OK	OK
z. Has the below guideline followed for Sub-step 4a: Analyze other activities similar to the proposed project activity? Provide an analysis of any other activities that are operational and that are similar to the proposed project activity. Other CDM project activities are not to be included in this analysis. Provide documented evidence and, where relevant, quantitative information. On the basis of that analysis, describe whether and to which extent similar activities have already diffused in the relevant region.	EB 39	Ann 10	The guideline for sub-step 4a has been applied, Webhosted PDD contains the description of similar project activities, the PP clarify how this is in line with point (1) of Sub-step 4a: Analyze other activities similar to the proposed project activity. CAR 6. a i) PP to confirm how the common practice demonstrated in the PDD is meeting the requirements of the new "Guidelines on Common Practice", Annex 12 of EB 63. ii) The entire geographical area of the Host Country has to be considered as default region for the analysis however in the PDD, the Karnataka state has been considered in the	CAR 6 & CAR 6.a	OK



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			analysis, PP to demonstrate how this is meeting the requirements of the Guidelines on Common Practice.		
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 been applied. The PP to justify the criteria applied to the select scale of the projects.	CL 8	OK
bb. Has the outcome from Step 4 clearly mentioned in PDD?	EB 39	Ann 10	The outcome from step 4 has been mentioned in B.5 section of the PDD.	OK	OK
cc. Has it been proved that the project is additional?	EB 39	Ann 10	Please refer CAR 5 & CL 7 in sections 6.q.ii & 6.p.iii above		



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<i>a. Prior consideration of the clean development mechanism</i>					
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 is to be provided by the PP.	CAR 7	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 but no retrofication or other modifications.	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

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g. For a new project, for which PDD has not been published for global stakeholder consultation or a new methodology proposed to the CDM Executive Board before the project activity start date, had PPs informed the host Party DNA and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status? (Provide reference to such confirmation from host Party DNA and UNFCCC secretariat).	VVM	101	The information provided in the PDD states that 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. Proof for the same to be provided by the PP.	CL 9	OK
h. For an existing project activity, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation, are the following evidences provided:	VVM	102			
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	The B.5 section states that the PP has registered a CDM project. The PP is requested to clarify whether the PP for the registered CDM project and the proposed CDM project activity are the same. PP also to clarify how they were aware of CDM related benefits and also how the serious consideration of CDM was made.	CL10	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 10 in above		
iii. reliable evidence from project participants that	VVM	102	Please refer CL 10 above.		



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must indicate that continuing and realactions were taken to secure CDM status for the project in parallel with its implementation, including, inter alia:					
a. contract with consultants for CDM/PDD/methodology services?	VVM	102			
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	Please refer CL 10 in above		
c. evidence of agreements or negotiations with a DOE for validation services?	VVM	102			
d. submission of a new methodology to the CDM Executive Board?	VVM	102	Please refer CL 10 in above		
e. publication in newspaper?	VVM	102			
f. interviews with DNA?	VVM	102			
g. earlier correspondence on the project with the DNA or the UNFCCC secretariat?	VVM	102			
h. Has the chronology of events including time lines been appropriately captured and explained/detailed in the PDD?	VVM	102	Please refer CL 10 in above		
b. Identification of alternatives					



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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		
c. Investment analysis					
a. Has investment analysis been used to	VVM	108	Yes, Investment analysis has been used by the	OK	OK


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demonstrate the additionality of the proposed CDM project activity?			PP to demonstrate additionality.		
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
d. Is the period of assessment limited to the proposed crediting period of the CDM project	EB 51	Ann 58	The period of assessment is for the entire lifetime of the equipment (20 years).	OK	OK



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activity?					
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	Project IRR has been chosen, the period of assement 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	Information major maintenance and/or rehabilitation in IRR calculation. The IRR calculation sheet does not provide any information of the same. PP to clarify.	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. The PP have chosen the renewable crediting period and have declared that they will claim the CERs limited to the lifetime of the equipment (20 years only).	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	Yes the same has been calcuated in accordance to the local accounting regualtions. 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
k. Was depreciation, and other non-cash items	EB	Ann	The PP is not eligible to claim Acclerated	OK	OK



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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)?	51	58	Deprecetaion. The PP is demonstrating additionality using Pre-Tax IRR.		
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	The PP has used an pre-tax benchmark.	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	IRR with Generation Based Incentive included in the cash inflow needs to be submitted by the PP. PP to clarify why the escalation in Tariff has not been considered in the investment analysis.	CAR 11 CL 17	OK
n. Is the timing of the investment decision consistent and appropriate with the input values?	EB 51	Ann 58	The proof for investment decision to be provided by the PP.	CL 10	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. However from the clearence obtained for the project activity from the Government of Karnataka states 57.75 MW (35 Nos) as the allocated capacity, but whereas the webhosted PDD states 56.10 MW (34 Nos), the PP is requested to clarify the same.	CL 16	OK
p. Does the investment analysis reflect the economic decision making context at point of the decision to recomence the project in the case of project activities for which implementation ceases after the commencement and where implementation is recommenced due to	EB 51	Ann 58	Not Applicable.		



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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
consideration of the CDM?					
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 supplied by the PP.	OK	OK
r. Are all formulas used in this analysis readable and all relevant cells be viewable and unprotected?	EB 51	Ann 58	Yes, all the cells are viewable and unprotected.	OK	OK
s. In cases where the project participant does not wish to make such a spreadsheet available to the public has the PP provided an exact read-only or PDF copy for general publication?	EB 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	Yes included.		
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 Project IRR.	OK	OK
w. Has the portion of the investment costs which is financed by debt been considered a cash outflow in the calculation of equity IRR? (this is not allowed)	EB 51	Ann 58	Not Applicable. The PP has opted for Project IRR.		
x. Was a pre-tax benchmark be applied?	EB 51	Ann 58	Yes, pre-tax benchmark has been applied.	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	Not Applicable		
z. In such situations, was interest calculated	EB	Ann	Not Applicable		


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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?	51	58			
aa. In cases where a benchmark approach is used is the applied benchmark appropriate to the type of IRR calculated?	EB 51	Ann 58	Pre-tax Weighted average costs of capital (WACC) has been calculated.	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	Weighted average cost of capital (WACC) has been selected as the benchmark by the PP.	OK	OK
cc. Has required/expected returns on equity selected as appropriate benchmark for an equity IRR?	EB 51	Ann 58	Not Applicable.		
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. PP to clarify how the 11 years of BSE 500 index used in the computation of Benchmark is in conjunction with the project technical lifetime of 20 years.	CL 18	OK
ff. Have internal company benchmarks/expected returns (including those used as the expected return on equity in the calculation of a weighted	EB 51	Ann 58	The benchmark used by the PP is not an internal benchmark.	OK	OK



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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 proof for the same to be provided by the PP.	CAR 7	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 WACC 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 eatablished according to the national accounting principles.	OK	OK
kk. Has an investment comparison analysis and not a benchmark analysis used when the proposed baseline scenario leaves the project participant	EB 51	Ann 58	The PP has used the benchmark analysis. Hence this is not applicbale.	OK	OK



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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, Tariff have been subjected to the Sensitivity. The PP to clarify why Operation & Maintenance cost is not subjected to the sensitivity analysis.	CAR 8	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	Please refer CAR 8 above		
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 as well as the specific socio-economic and policy	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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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	The PLF provided to banks have been used in the IRR analysis.	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	Not Applicable		
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 parameters were cross-checked against the invoices available.	OK	OK
tt. Were feasibility reports, public announcements and annual financial reports related to the proposed CDM project activity and the project participants reviewed?	VVM	111	Yes, the annual report, public announcement with respect to CDM and Feasibility Reports were reviewed.	OK	OK
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	VVM	111	Yes, the sensitivity analysis was performed and	OK	OK



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participants to determine under what conditions variations in the result would occur, and the likelihood of these conditions assessed?			under what conditions variations in the result would occur, and the likelihood of these conditions were assessed.		
ww. Is the type of benchmark applied is suitable for the type of financial indicator presented?	VVM	112	Yes, the Pre-tax Benchmark is suitable for the Pre-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	No, the risk premiums applied does not reflect the risks associated with the project activity.	OK	OK
yy. To determine this, was it assessed whether it is reasonable to assume that no investment would be made at a rate of return lower than the benchmark by:	VVM	112			
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.	CL13	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 CDM project activities?	VVM	113	Yes the project has used Feasibility Study Reports (FSR) values, the PP needs to clarify whether the FSR is approved by National Authorities.	CL 14	OK
xx. If yes:	VVM	113			
i. has the FSR been the basis of the decision to proceed with the investment in the	VVM	113	Yes, the FSR has been basis for the investment decision.	OK	OK



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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?					
ii. Are the values used in the PDD and associated annexes fully consistent with the FSR?	VVM	113	Yes, the values used in the FSR and the PDD are consistent.	OK	OK
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	The input values from FSR have been cross checked and have found to be applicable at the time of the investment decision.	OK	OK
d. Barrier analysis					
a. Has barrier analysis been used to demonstrate 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
i. prevent the implementation of this type of proposed CDM 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	VVM	116	Not applicable, the PP has not chosen the barrier	OK	OK



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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]}			analysis to demonstrate the additionality.		
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. assessing 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? (If yes, this barrier cannot be considered as adequately substantiated)	VVM	117			
e. Were the barriers determined as preventing the implementation of the project activity but not the implementation of at least one of the possible	VVM	117	Not applicable, the PP has not chosen the barrier analysis to demonstrate the additionality.	OK	OK



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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?					
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, but the references provided in the PDD are not accessible: http://cea.nic.in/power_sec_reports/executive_summary/2010_06/1-2.pdf http://www.windpowerindia.com/statstate.html http://www.windpowerindia.com/statestest.html http://cea.nic.in/power_sec_reports/Executive_Summary/2010_05/27-33.pdf	CAR9	OK



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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 default region has been taken as Host Country (India), and further based on the different policy, tariff regime the assessment has been performed at state (Karnataka) level.	OK	OK
d. Was a region other than the entire host country chosen?	VVM	120	The host country and Karnataka state, has been used in the assessment.	OK	OK
e. If yes, was the explanation why this region is more appropriate assessed?	VVM	120	Karnataka state, India has been used in the assessment. 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	Yes the same was assessed.	OK	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	VVM	122	The monitoring plan of the CDM project activity is based approved monitoring methodology.	OK	OK



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CDM project activity?					
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
d. Does the monitoring plan contains all necessary parameters?	VVM	123			
e. Are the parameters clearly described?	VVM	123	Yes, the parameters are clearly described.	OK	OK
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 not clearly in the PDD. PP to clarify the same.	CL 15	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
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	VVM	123			



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reported ex post and verified:					
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 CAR 1 in 1.a section		
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, which was prior to the publication of the PDD on the UNFCCC website.	OK	OK
b. Have comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity been invited?	VVM	129	The comments put forth by the local stakeholder are not presented in the PDD. PP to clarify.	CL 4	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 not provided in the PDD.	CL 5	OK
d. Have the project participants taken due account of any comments received and described this	VVM	129	The PDD is silent on how the comments were compiled and addressed. The PP is requested to	CL 6	OK



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process in the PDD?			clarify the same.		
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 and 2	Summary of project owner response	Validation team conclusion
CAR 1 Letter of Approval from the DNA needs to be submitted by the PP.	Table-1 1. a	PP has approached the Host Party DNA (MoEF) for Letter of Approval. It is under processing by the India DNA. Once the LoA is received, PP will submit the LoA to the DOE for validation.	PP has submitted the Letter of Approval from Host DNA. Hence CAR 1 is closed.
CAR 2 The PDD has been prepared in accordance with the latest template (Version 03) and the latest guidance. But the logo on the left hand side corner of the PDD is not legible.	Table -1 3.a	The same has been corrected in the revised PDD. The same is enclosed along with these replies.	The revised PDD version no 01.1 has been submitted, the same has been checked by the validation team and found to be ok. Hence CAR 2 is closed.
CAR 3 Brief description of the project activity has been provided but has exceeded the one page limit.	Table -1 3. d. i	As per the guidelines, the description of the project activity has reduced to one page. The same has been used in the revised PDD.	The revised PDD version has been checked and found be in line with requirements of Guidelines for Completing the PDD. Hence CAR 2 is closed.



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CAR 4 The physical location with unique identification for individual Wind Turbine Generators. Approaches to the project site are not presented in the PDD and same is not in line with the guidelines for completing the PDD.	Table -1 3. f. ii	The site approaches viz railway and airway have been provided in the revised PDD. The physical location of the project activity has been incorporated The GPS co-ordinates (X & Y) of individual WTGs along has also been provided.	The geographical co-ordinates of individual WTGs have been provided in the Annex 5 of the PDD (version 01.3). The nearest railway station, airport and have also been the updated. The response and corrections incorporated are found to be satisfactory and in line with the Guidelines for Completing the PDD. Both changes have been checked and found to be acceptable, hence CAR 4 is closed.
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CAR 5 The sources and documentary evidence for the information presented in the B.5 section and financial spreadsheet to be provided by the PP.	Table -1 6. q. ii	The sources and documentary evidence for the key assumption provided in the financial sheet and the PDD is submitted to the DOE for validation.	The documents evidence and sources from which the values which were deduced were made available to the validation team. The documents and their date of publication was checked in order to ascertain that these were available before the decision making date. The financial analysis has also been checked and verified by the Financial Expert team: M/s. Karthikeyan & Jayaram, which is a part of this validation team. The documentary evidences provided by the PP are acceptable and verifiable. Hence CAR 4 is closed.
CAR 6 The sub-step 4a of Tool for Demonstration of Additionality has been applied by the PP in the Webhosted PDD and it contains the description of similar project activities, the PP clarify how this is in line with point (1) of Sub-step 4a: Analyze other activities similar to the proposed project activity.	Table -1 6. z.	The similar project activities of the proposed project activity with reference to the guideline sub step 4a have been incorporated in the revised PDD. The criteria for choosing the similar project activities including the scale has been revised in the revised PDD.	Explanation on how the projects have been chosen similar to the proposed project activity has been clearly defined in the revised PDD, version 01.1. The revision in PDD has been checked by the validation team and is found to meeting the requirement put forth in the Point no.1 of Sub-step 4a of the Tool for Demonstration of Additionality, Version 06.0. Hence CAR 6 is closed.



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CAR 6. a i) PP to confirm how the common practice demonstrated in the PDD is meeting the requirements of the new "Guidelines on Common Practice", Annex 12 of EB 63. ii) The entire geographical area of the Host Country has to be considered as default region for the analysis however in the PDD, the Karnataka state has been considered in the analysis, PP to demonstrate how this is meeting the requirements of the Guidelines on Common Practice.	Table -1 6. z	i) The new common practice guidelines has now been applied in conjunction with the "Tool for Demonstration and Assessment of Additionality". The corrections have been incorporated in the section B.5 section of the revised PDD. ii) The default region for the analysis has now been considered as India (entire region). The Tariff, Policy Regime, PLF varies from state to state and investment climate varies from site to site and may not be comparable, hence other states have been excluded from further analysis and only Karnataka State has been considered for further analysis, this is in line with the Sub Step – 4a of "Tool for Demonstration and Assessment of Additionality". The revised PDD, version 01.3., is enclosed along with.	CAR 6.a has been dropped and closed based on the latest "Tool for Demonstration and Assessment of Additonality, Version 06.0.0, Annex 21, EB 65.
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CAR 7 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 is to be provided by the PP. Board Resolution for serious consideration of CDM to be submitted by the PP.	Table-1 6. a. b & 6. c. hh	The proof for the serious CDM consideration including the relevant extract translated in to English from the Board Resolution and mail communication (PC Form sent to UNFCCC and the Host Party DNA) has been submitted to the DOE for validation.	The email correspondences between UNFCCC & PP and similar email correspondence with the Host DNA (MoEF) was made available to the validation team. The prior consideration has been crosschecked on the UNFCCC website. The extract of Board Resolution in English dated 05/05/2010 was been submitted to validation team. The validation team also performed interviews with Mr. Rajnish Sapra – Chief Financial Officer and Mr. Prashanth Vittal, Director –Projects to understand the process of decision making of the board. The response provided and the documentary evidence are acceptable and CAR 7 has been closed.
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CAR 8 Yes, the parameters such as PLF, Project Cost, Tariff have been subjected to the Sensitivity. The PP to clarify why Operation & Maintenance cost is not subjected to the sensitivity analysis.	Table -1 6. c. II.	As per the Guidelines on the Assessment of Investment Analysis, Paragraph 17, Annex 58 of EB 51, only variables including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues are subject for variation. The operation and maintenance expense does not constitute more than 20% of the total project costs. These do not constitute more than 20% of total project revenue at least for the first 8-9 years of the project revenues. These will have insignificant impact on IRRs even if subject to variation in the later duration of the project life. Hence the operation and maintenance is excluded from the sensitivity analysis in the investment analysis and the PDD.	The operation & maintenance agreement was made available to the DOE and the PP demonstrated through this document that the operation & maintenance expense did not constitute more than 20% of total project revenue for the initial 8 to 9 years. The PP's claim for not subjecting the operation & maintenance is not unjustified. Hence the response provided by the PP is acceptable to the validation team and CAR 8 has been closed.
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CAR 9 The common practice analysis has been carried out by the PP, but the references provided in the PDD are not accessible: http://cea.nic.in/power_sec_reports/executive_summary/2010_06/1-2.pdf http://www.windpowerindia.com/statstate.html http://www.windpowerindia.com/statestest.html http://cea.nic.in/power_sec_reports/Executive_Summary/2010_05/27-33.pdf The total installed capacity of India mentioned in the PDD is mentioned as 11,806.69 MW is not the same figure which is mentioned on the website – 11,807.10 MW, please clarify (URL provided in the foot note no 25) CEA Link provided on page 30 is not accessible http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm	Table -1 6. e. b	The reference links provided for the common practise analysis and CEA website have been corrected in the revised PDD and the error in mentioning installed capacity in India rectified.	The reference links provided have been cross checked and found to be accessible, hence CAR 9 is closed.
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VALIDATION REPORT

CAR 10 Capacity addition – PP needs to describe how this is not a capacity addition to already existing registered CDM project.	Table -1 6. e. b	The proposed project is a new green field project activity. Tuppadahalli Energy India Private Limited is the Project Proponent – it is a new company incorporated for this purpose. The existing registered CDM project has a different Project Proponent In addition, the two projects, are in separate locations, constructed in different points in time, having different tariff parameters, selling electricity to different utilities, and not sharing any expenses or revenues for tax efficiencies under Indian tax law. From the above, it is clearly evident that the proposed project activity is not a capacity addition of the already existing registered CDM project.	Based on the physical verification of the site and documentary evidence provided the PP, the validation team has been able to conclude that the project activity is not capacity addition of already existing project. The project activity involves the installation of new wind turbine generators at a site where there have been no prior renewable energy projects. The response provided by the PP is acceptable to the validation team, hence CAR 10 is closed.
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VALIDATION REPORT

CAR 11 The revised IRR with Generation Based Incentive included in the cash inflow needs to be submitted by the PP.	Table -1 6. c. m	The project activity is eligible to avail GBI incentive of INR 6.2 Million per MW. The same value has been applied to reflect impact on IRR in calculation sheet version 04 as response to validation team.	The revised IRR calculation sheet, version 04 has been checked by the validation team and also the Ministry of New and Renewable Energy (MNRE) webpage (http://mnre.gov.in) was accessed to understand the Generation Based Incentive for Wind Power Projects. From the information available on the MNRE webpage it is noted that the GBI scheme came into effect on 17/12/2009 and the projects with installed capacity of more than 5 MW which are grid connected are eligible for the GBI scheme. The GBI scheme allows the Project Developer to claim a maximum of INR. 6.2 Million per MW and the developer who claims GBI is not eligible to claim the accelerated depreciation benefit under Section 32 of the Income Tax Act 1961. The PP has applied INR. 6.2 Million which is as per the MNRE guidelines and for the project size of 56.10 MW the eligible or the maximum incentive available is INR. 347.82 Million, the same value has been applied in the IRR calculation sheet. The IRR with GBI works out to be 10.55%, even with the
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VALIDATION REPORT

			Inclusion of GBI in the cash flow the IRR still remains below the benchmark. It is also crosschecked that accelerated depreciation has not been taken into account by the PP. The response, revised IRR calculation and documentary evidence are acceptable to the validation team, hence CAR 11 is closed.
CL 1 Paragraph 11 of ACM 0002, version 12.1.0 has the following equation: $ERY = BEy - PEy$, but the equation provided in the PDD is different.	Table -1 3. r. i	The equation for the emission reduction is corrected in the revised PDD with reference to the Paragraph 11 of ACM0002 version 12.1.0	The PP has corrected the equation as per paragraph 11 of ACM 0002 in the B.6.1 section of the revised PDD. The validation team has checked the same has been against the applied approved consolidated methodology ACM 0002, Version 12.1.0 and during the course of validation the EB at its 65th meeting had approved version 12.2.0. The equation was found to be in line with the approved applied methodology. Hence CL1 is closed.



VALIDATION REPORT

CL 2 The source of data is stated, but the PP is required to clarify how the Net Electricity is being determined whether it is calculated or measured?	Table -1 3. t. ii. a	The net electricity generated by the project activity is a calculated value. The meters used in monitoring are bidirectional meter, having facility to record both export and import. The net electricity of the project activity is arrived from the deduction of total import from total export. The same has been incorporated in the revised PDD.	The PP in the response and in the B.7.1 section of the PDD has stated that the Net Electricity would be a measured value which would be determined by deducting the total import from total export to grid. This a common approach which has been commonly adopted in by the other wind power projects in the region. The response and approach adopted to determine the net electricity is acceptable, hence CL2 is closed.
CL 3 The information about the renewable of crediting period is not stated in this C.2.1 section of the PDD but the same has been stated in the C.2.1.1 section. PP to clarify.	Table – 1 3. z	PP has chosen renewable crediting in the proposed project activity and the same information is incorporated in the section C.2.1 of the revised PDD.	The correction has been checked in the revised PDD and found to be meeting the requirements specified in the Guidelines for completing the SSC-PDD. Hence CL 3 is closed.
CL 4 The PP to clarify how the description of the project activity was provided to the local stakeholders.	Table -1 3. gg. li	Mr. Prashanth Vittal, Director, Tuppadahalli Wind Energy Private Limited had described the project activity to the local stakeholders in the meeting and the same is incorporated in the revised PDD.	The description of how the project activity was illustrated to the local stakeholder has been incorporated in the E.3 section of the revised PDD. The same has been checked and found to be OK. CL 4 is closed.



VALIDATION REPORT

CL 5 The name of stakeholders who put forth the comments are not present in the PDD. PP to clarify.	Table -1 3. hh. i	The name of the stakeholders who put forth the comments has been presented in the revised PDD.	The same has been checked and it is verified that the names of local stakeholders who had put forth the comments are presented in the E.1 section of the revised PDD. Hence CL 5 is closed.
CL 6 The PDD is not clear how the comments were received from the local stakeholders.	Table -1 3. ii	Mr. Prashanth Vittal, Director, Tuppadahalli Wind Energy Private Limited had described the project activity to the local stakeholders in the meeting and subsequently he requested the stakeholders to come up with some queries/clarification. The stakeholders who had participated in the meeting had put forth their comments. Mr. Prashanth Vittal responded to all stakeholders' comments. The comments and responses have been recorded in the Minutes of meeting. Information about the comments and responses are now provided information in the revised PDD. The minutes of meeting has been submitted to the DOE for validation.	The process of how the comments were received and recorded during the stakeholder meeting has been stated in the E.1 section of the revised PDD. The same has been checked and found satisfactory. Hence CL 6 is closed.



VALIDATION REPORT

CL 7 The PP has used Pre-tax weighted average cost of capital as the benchmark for this project activity. The B.5 section states that the project proponent has registered a wind power project under CDM, PP clarify whether the same benchmark was applied to assess the viability of the project. PP is required to demonstrate how this benchmark is applicable with respect to the paragraph 14 of Annex 13 of EB 61.	Table -1 6. p. iii	PP clarifies that it is a distinct legal entity and this is the only project it has undertaken. Benchmark and risk criteria involved at the time of decision are considered based on generally prevalent norms including those considered by other CDM projects.	From the response and discussions with the PP it is understood that the PP "Tuppadahalli Wind Energy India Private Limited" has ventured first time in the wind power business and this is the first CDM project activity of this entity. Hence the PP's decision of applying Weighted Average Cost of Capital (WACC) as benchmark for this project activity is acceptable. CL 7 is closed.
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VALIDATION REPORT

CL 8 As per Sub-step 4a of Tool to Demonstrate Additionality which has been applied by the PP. The PP to justify the criteria applied to the select scale of the projects.	Table -1 6. aa	As per the “Tool for the demonstration and assessment of additionality (Version 6.0.0)”, analysis of other activities are similar to the proposed project activity can be done “if they are in the same 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.” Following this guideline, the project proponents have analyzed all large-scale wind energy projects of similar scale in the state of Karnataka available at the time of decision making. For the purpose of analysis, similar project activity has been defined as any project activity with size above 15MW which is considered as the large scale project under CDM and set up by a single project proponent post year 2000 in the same region (Karnataka) with the WTG capacity more than 1 MW (Similar technology). The same has been incorporated in the revised PDD and the sub step 4a has elaborated in the revised PDD.	The common practice discussion has been revised in line with the tool to demonstrate additionality, in the revised PDD. The revised PDD now includes the following with detailed justifications, 1. The scope of the region to discuss common practice is now described as Karnataka state. 2. Criteria to define projects similar to the proposed CDM project activity have been included. 3. A list of all similar projects has been described in sub-step 4(a), under Section B.5 of the revised PDD. 4. The justification for why these similar projects cannot be compared with the project activity is now included. Based on the inclusion of the above description, CL 8 is closed.
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VALIDATION REPORT

CL 9 The information provided in the PDD states that 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. Proof for the same to provided by the PP.	Table -1 6. a. g	PP has sent the Prior Consideration Form to the UNFCCC and the host country DNA informing about the commencement of the project activity. The mail communication along with the Prior Consideration Form have been submitted to the DOE for validation along with confirmations of its receipt received from the DNA and UNFCCC.	The intimation sent to the Host DNA and UNFCCC have been submitted to the validation team. The same has been crosschecked from the UNFCCC website. The response and documentary evidence meets the requirements of Guidelines on the Demonstration and Assessment of Prior Consideration the CDM – Annex 13, EB 62. Hence CL 9 is closed.
CL 10 The B.5 section states that the PP has registered a CDM project. The PP is requested to clarify whether the PP for the registered CDM project and the proposed CDM project activity are the same. The proof for investment decision to be provided by the PP.	Table -1 6. a. h. ii	PP wants to clarify that the proposed project activity is owned by Tuppadahalli Energy India Private Limited and the existing registered project activity is owned by Acciona Wind Energy Private Limited and are two different legal entities. The same has been corrected in the revised PDD. The board resolution dated 05/05/2010 is also submitted herewith.	The correction incorporated in the PDD has been checked and the CDM registration status of the other project has been crosschecked on the UNFCCC website "http://cdm.unfccc.int/Projects/DB/DNV-CUK1216117082.43/view" and from the website it also confirmed that the project participant for the registered CDM project activity is "Acciona Wind Energy Private Limited". CDM and its related benefits have been seriously considered which is evident from the Minutes of the meeting held on 05/05/2010. The response and the evidence provided to support the response are satisfactory, hence CL 10 is closed.



VALIDATION REPORT

CL 11 Information major maintenance and/or rehabilitation in IRR calculation. The IRR calculation sheet does not provide any information of the same. PP to clarify.	Table -1 6. c. f.	The Operation and Maintenance Expense of the project activity include all the expenses related to the maintenance. The same has been considered in the investment analysis. The proposed project will be constructed on forest land after the approval has been obtained from the forest department who would consider various parameters before giving approval. In the PP's assessment there is no population that resides at the identified site and hence rehabilitation will not be applicable for relocation of people from this site to elsewhere.	The Operation & Maintenance Expense is part of the financial analysis, the same has been checked and found to be OK. The validation team based on the approval from Government of Karnataka and from the physical verification of the site is able to confirm that the land is a forest land and there has been no evidence of occurrence any kind of resettlement or rehabilitation of the population due to this project activity. The response provided by the PP is acceptable, CL 11 is closed.
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VALIDATION REPORT

CL 12 The source for the reference of local regulation to used to calculate fair value to be provided by the PP.	Table-1 6. c. i	PP wants to clarify that there is no regulation for fair value. Fair value is the estimated amount will remain after the life time of the project activity from the scrap. PP has decided the 5 % fair value for the proposed project activity as the 100% depreciation rates are written off before the life time of the project activity. Fair value considered in the project activity is an estimated figure during the investment decision and the same has been considered in the investment analysis sheet.	The response provided by the PP and Fair Value of 5% considered in the financial analysis is acceptable to the validation team. Since, the value has been derived from the Technical Report of the PP which was the basis on which the investment decision was made and the same technical report was submitted to the bank for availing the debt. Hence CL 12 is closed.
CL 13 The PP to clarify whether the same benchmark has applied across for other projects (implemented projects & proposed projects) for making the investment decision.	Table -1 6. c. yy. ii	This is the first project from Tuppadahalli Energy India Private Limited.	The justification provided by the PP is acceptable as it is in line with the paragraph 14 of Guidelines on the Assessment of Investment Analysis, Annex 05, EB 62.Hence CL 13 is closed.



VALIDATION REPORT

CL 14 The project has used Feasibility Study Reports (FSR) values, the PP needs to clarify whether the FSR is approved by National Authorities.	Table -1 6. c. zz	There is no mandatory requirement to get such approval. PP wants to clarify to DOE that the FSR was submitted to the financial institution for debt funding of the proposed project activity. The financial institution sanctioned the debt amount for implementing the proposed project activity.	Based on the information provided and discussions with the PP it is understood that it is not mandatory to get the Feasibility Reports approved by a National Authority. The validation team has also cross checked the approval process of Karnataka Renewable Energy Development Limited (KREDL) "http://kredl.kar.nic.in/Application-Forms/Wind.doc" and has been to confirm that this approval of FSR is not a mandatory requirement. The response is found acceptable, hence CL 14 is closed.
CL 15 Information about the calibration of energy meters used for measurements is not clearly stated in the PDD. PP to clarify the same.	Table -1 7. j	The energy meters of the project activity will be checked for accuracy by the Utility as per the PPA. PP will follow the calibration frequency of the energy meter is once in a year. The same calibration frequency has been incorporated in the revised PDD.	The PP has mentioned the frequency of calibration as one year which is a common frequency adopted by most of the registered CDM projects even though the CEA metering regulations state that the calibration of energy meters can be done once in every 5 years. The response provided by the PP is found to be acceptable, hence CL 15 is closed.



VALIDATION REPORT

CL 16 The clearances obtained from the Government of Karnataka states 57.75 MW (35 Nos) as the allocated capacity, but whereas the webhosted PDD states 56.10 MW (34 Nos), the PP is requested clarify the same.	Table -1 6. c. 0	PP wants to clarify that the Government of Karnataka has approved for 35 numbers of WTG to implement in the project activity, but the PP decided to implement only 34 numbers of WTG. PP confirms that the size of project activity will remain the same during the entire lifetime and crediting period.	The PP has stated that even though the clearances are obtained for 57.75 MW which is total allocated capacity for this site, the confirmed size of the project would be 56.10 MW. To support the claim the PP stated that the capacity and no. of WTGs mentioned in the Board Resolution, supply contract with the equipment supplier and erection & commissioning agreement are same as that stated in the PDD. The documents mention that the total size of the project activity would be 56.10 MW and would comprise of 34 Nos WTGs. The supply contract with the equipment supplier Dt., 13/09/2010 and erection & commissioning agreement also Dt., 13/09/2010 and the Board Resolution passed on 05/05/2010 all confirm that the size of project activity as 56.10 MW and total no. of WTGs as 34. The same have been checked and the response provided by the PP is acceptable. CL 16 is closed.
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VALIDATION REPORT

CL 17 PP to clarify why the escalation in Tariff has not been considered in the investment analysis.	Table -1 6. c. m	The tariff orders of KERC dated 18/12/2005 and 11/12/2009 available at the time of decision making illustrates that tariff reduces year on year in KERCs reasoning, but KERC was inclined to have a fixed feed-in-tariff. The reason stated in KERC Order (Dt., 18/12/2005) for this reduction is: <i>"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. The Commission feels that for wind projects, as in the case of mini hydel, varying tariff from year to year on a reducing scale is not appropriate and may not give welcome signal to the developers to attract new investment. Therefore, the Commission decides to have a uniform average tariff for the first 10 year period for the wind projects."</i> The reason why the tariff rate reduces after the 10th year is because the largest component of	The validation team checked the tariff order of 2005 and as well the tariff order of 2009, the approach adopted by the regulatory commission to determine the tariff for renewable energy projects has remained the same. From both the orders 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 17 is closed.
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tariff being the repayment and servicing debt obligations. It is assumed that the loan repayment concludes by the 10th year of operation. These have been factored in while determining the regulated tariff for the first 10 years. The tariff table as per the 11/12/2009 KERC order is presented below to substantiate the afore mentioned statement:

Year	Tariff (Rs./unit)
1 st Year	4.40
2 nd Year	4.25
3 rd Year	4.10
4 th Year	3.94
5 th Year	3.79
6 th Year	3.64
7 th Year	3.49
8 th Year	3.34
9 th Year	3.19
10 th Year	3.04
Average Tariff for the above 10 years	3.72
Rounded off to	3.70



VALIDATION REPORT

		Based on the above rationale and tariff workings it is noted that the tariff reduces gradually year on year and it is therefore likely that the tariff for the project activity beyond the initial PPA period may be lower. This is expected to happen in the cost plus tariff regulated power projects where the tariff reduces after the debt service is over. In the financial analysis, we have retained Rs. 3.70 kWh tariff for the entire lifetime of the project activity. However in the sensitivity analysis we have subjected the tariff to 10% escalation and even with 10% escalation the IRR does not cross the benchmark.	
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VALIDATION REPORT

CL 18 PP to clarify how the 11 years of BSE 500 index used in the computation of Benchmark is in conjunction with the project technical lifetime of 20 years.	Table -1 6. c. ee	The available indices for calculation of Market Return in India are: BSE Sensex (30), BSE 100, BSE 200 and BSE 500. Project Participant has used BSE 500 Market Return for computation of the benchmark. Capital Asset Pricing Model (CAPM) uses the data from BSE 500 index as this is a more diversified portfolio (one of the basic requirements of CAPM) as compared to BSE 30, BSE 100 and BSE 200. BSE 500 index covers the 20 major industries of the economy, and also covers all the power sector companies listed on the Bombay Stock Exchange Limited as compared to other indices such as BSE 30, BSE 100 and BSE 200 which cannot be construed to be widely diversified as these consist of only 30 scrips (BSE 30), 100 scrips (BSE 100) and 200 scrips (BSE 200). BSE 500 index has 500 scrips. Selection of BSE 500 represent a more robust and efficient face of the market. The Project Participant has considered data for determining the WACC on a conservative basis, and has considered the data which is relatively most dependable and indicative of the future evolution of expectations as foreseen at the time of decision in the Indian context.	The PP's response to CL 18 is found to be satisfactory and acceptable, hence CL 18 is closed.
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VALIDATION REPORT

	The maximum available length of time for past data availability has been considered keeping this in view. The approach has been applied to the Risk-free Rate of Return (RRR) and Market Return calculations. The Project Participant is of the view that historical data of a period that is equal to the project lifetime, even if available, may not represent the expectations or future returns from the project with a 20 years lifetime as in this case as market behaviour is not contingent on project life. The results of such an analysis, if one considers two projects, one with a lifetime of five years and another with a lifetime of 35 years, even assuming dependable data is available, is unlikely to result in a reliable yardstick to take decision for the promoters. One should however try to ensure that the period chosen at the time of decision should be representative and good to reflect the overall market behaviour covering all the ups and downs, meaning a complete cycle. The Project Participant believes the data relied on is representative for this project in India.	
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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: Mathew	Between 04/02/2011 to 05/03/2011	How GHG emission is reduced due to the project activity is not demonstrated in the PDD. Please clarify.	Section B.5 explains this.	The B.5 section of the webhosted PDD and as well the A.2 section of the PDD describes how the project activity will lead to GHG emission reductions.
2.	Submitted by: Mathew	Between 04/02/2011 to 05/03/2011	The break up mentioned in the section B.4 doesn't match with URL at the footnote. Pls. explain.	There is no break-up referred to in B.4	The correct URL which can be accessed has been provided in the revised PDD, version 1.1.
3.	Submitted by: Mathew	Between 04/02/2011 to 05/03/2011	The calculation of project IRR is not as per "Guidance on the Assessment of Investment Analysis' Version 03, EB 51, Annex 58".	Pre-tax Project IRR is as per the stated UNFCCC Guidance.	The PP has used the Pre-Tax Project IRR for demonstrating additionality. This is in line with latest "Guidelines on the assessment of Investment Analysis", Annex 5 of EB 62.
4.	Submitted by: Mathew	Between 04/02/2011	Derating factor, array efficiency of the wind energy system is not	Based on experience we are confident that efficient operation and	The PP has considered these factors in the



VALIDATION REPORT

Sr. No.	Details of the commenter	Date of Comment	Comment [unedited]	Response by project participant	Explanation on how account is taken by DOE
		to 05/03/2011	depicted in the PDD. Pls. clarify.	maintenance this is not required. The same is brought out in the financial analysis and is a conservative approach for CDM.	assumptions of the financial analysis. The same has been verified by the financial expert of the validation team and found to be acceptable.
5.	Submitted by: Mathew	Between 04/02/2011 to 05/03/2011	Debt/Equity ratio should be based on recent investment done by the Project proponent.	Though this is one of the rationale for the Debt/Equity ratio in an analysis and is not a must, it happens to be similar to an existing project in our case. Evidence is made available to validator.	The debt equity ratio has been checked by the validation team and the PP's sister concern investment breakup has also been verified.
6.	Submitted by: Mathew	Between 04/02/2011 to 05/03/2011	Whether pre-tax or post tax IRR is selected is not demonstrated in the PDD.	It is clearly demonstrated in sub-step 2b.	The PP has opted for Pre Tax project IRR.
7.	Submitted by: Mathew	Between 04/02/2011 to 05/03/2011	Prior consideration of CDM which is important for the determination of additionality is not documented in the section B.5 of the PDD.	It is clearly stated in B.5 last two paragraphs. Documentary evidence is provided to validator.	The proof serious consideration of CDM and the intimation submitted to the UNFCCC and Host DNA has been submitted to the validation team. The



VALIDATION REPORT

Sr. No.	Details of the commenter	Date of Comment	Comment [unedited]	Response by project participant	Explanation on how account is taken by DOE
					same has been checked and found to be ok.