



VALIDATION REPORT
TAMIL NADU NEWSPRINT AND PAPERS
LIMITED

VALIDATION OF THE
13.75 MW GRID CONNECTED "WIND
ELECTRICITY GENERATION PROJECT BY
TAMILNADU NEWSPRINTS AND PAPERS
LIMITED"

REPORT No. INDIA-VAL/239.49/2012

REVISION No. 03

BUREAU VERITAS CERTIFICATION

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BUREAU
VERITAS

VALIDATION REPORT

Date of first issue: 23/07/2011	Organizational unit: Bureau Veritas Certification Holding SAS
Client: TamilNadu Newsprints & Papers Limited	Client ref.: Dr S Chinnaraj
Summary: Bureau Veritas Certification has made the validation of the "13.75 MW Grid connected "Wind Electricity generation Project by Tamilnadu Newsprints and Papers Limited" located in Alagiapandiapuram and Devarkulam villages of Tirunelveli District at TamilNadu 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 ACM 0002, Version 12.2.0 and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.	

Report No.: INDIA-val/239.49/2012	Subject Group: CDM
Project title: 13.75 MW Grid connected "Wind Electricity generation Project by Tamilnadu Newsprints and Papers Limited"	
Work carried out by: R S Premkumar – Team Leader Srinivasan Selvaraj – Team Member T Ramesh – Team Member Sushil Budhia Associates – Financial Experts Karthikeyan and Jayaram – Chartered Accountants	
Internal Technical Review carried out by: Sanjay S Patankar – Internal Technical Reviewer 	
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Mr Flavio Gomes
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Abbreviations

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



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1 INTRODUCTION

TamilNadu Newsprint and Papers Limited has commissioned Bureau Veritas Certification to validate its CDM project '13.75 MW Grid connected "Wind Electricity generation Project by Tamilnadu Newsprints and Papers Limited' (hereafter called "the project") at Alagiapandiapuram and Devarkulam villages in TamilNadu, India.

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

1.1 Objective

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

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

1.2 Scope

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

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

1.3 Validation team

The validation team consists of the following personnel:

FUNCTION	NAME	CODE HOLDER*	TASK PERFORMED
Lead Verifier	R S Premkumar	☒ Yes ☐ No	☒ DR ☒ SV ☐ RI
Verifier	Srinivasan Selvaraj	☒ Yes ☐ No	☒ DR ☐ SV ☐ RI
Verifier	T Ramesh	☐ Yes ☒ No	☒ DR ☒ SV ☐ RI



Financial Specialist	Sushil Budhia Associates (For IRR)	☐ Yes ☒ No	☒ DR ☐ SV ☐ RI
Financial Specialist	Karthikeyan and Jayaram Associates (For Benchmark)	☐ Yes ☒ No	☒ DR ☐ SV ☐ RI
Internal Technical Reviewer (ITR)	Sanjay Patankar	☒ Yes ☐ No	☒ DR ☐ SV ☐ RI
Specialist Supporting ITR	Not Applicable	☐ Yes ☐ No	☐ DR ☐ SV ☐ RI
Report Approval	Flavio Gomes	☐ 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 TamilNadu Newsprint and Papers 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, TamilNadu Newsprint and Papers Limited revised the PDD and resubmitted it in April 2012.



The validation findings presented in this report relate to the project as described in the PDD version 3.0.

2.2 Follow-up Interviews

From 23/09/2009 to 26/09/2009, Bureau Veritas Certification conducted the site visit and performed interviews with project stakeholders to confirm selected information and to discuss issues identified in the document review. Representatives of TamilNadu Newsprint and Papers Limited were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
TamilNadu Newsprint and Papers Limited	➤ CDM Consideration ➤ Methodology applicability ➤ Baseline determination & emission factor ➤ Additionality ➤ Monitoring Plan ➤ GHG Calculations ➤ Local stakeholder consultation and resolution of their concerns ➤ Supporting data and documentation ➤ Resolution of CAR's and CL's
Local Stakeholders	➤ Views and concerns about the Project Activity ➤ Confirmation of the local stakeholder meeting conducted by the Project Participant.
Suzlon Infrastructure Services Limited (O&M of the wind mill site)	➤ Monitoring System at site ➤ Metering system at site

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 23 Corrective Action Requests (CARs) and 25 Clarification Requests (CLs).

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

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

3.1 Approval (49-50)

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



that this letter is in accordance with paragraphs 45 – 48 of VVM version 1.2.

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

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

3.2 Participation (54)

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

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

The project was webhosted on the UNFCCC for global stakeholder's comments as per CDM requirements. The project activity was webhosted from 13th August to 11th September 2009. Five comments were received from global stakeholders for the project activity, which has been discussed in Appendix B of this report.

3.3 Project design document (57)

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

3.4 Changes in the project activity

The final PDD, Version 3.0 has the following changes with respect to version 01 which was webhosted.

1. Information in section A.2 has been updated to provide information on the prior experience of the Project Participant in renewable energy projects.
2. The CER estimates have been revised.
3. IRR calculations have been revised in order to comply with the latest EB guidelines.



4. The chronology of events with respect to the project implementation and the CDM implementation steps has been detailed in Section B.5.
5. Discussion on Common Practice Analysis in additionality section has been revised to include analysis of projects with -50% of the output capacity as that of the proposed project activity in response to the Request for Review raised by the CDM EB .
6. Monitoring plan has been revised to transparently describe the entire process of monitoring and metering at site.

CAR 1 & CL 15 were raised since the prior experience of the project participant in renewable energy sector projects were not discussed transparently in the webhosted PDD which has now been included in the revised PDD. Further the project participant was requested to justify as to why the proposed project activity is not classified as a capacity addition. The project participant has provided a detailed justification for the same and hence CAR 1 and CL 15 were closed. (Refer CAR 1 & CL 15 in Appendix A below).

The validation team hereby confirms that the PDD complies with the latest PDD format (Ref /59/) and PDD Completeness Guidelines (Ref /58/) for completion of PDD.

3.5 Project description (64)

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

The project activity involves the installation of 11 numbers Wind Turbine Generator's (WTG) of capacity 1.25 MW each, at villages Alagiapandiapuram and Devarkulam in Tirunelveli District, State of Tamil Nadu, India. The total capacity of the project activity is 13.75 MW and the entire power generated by the project activity will be exported to the Southern grid with a firm power purchase agreement with the TNEB (Ref /4/). All the 11 machines of the project activity are owned by M/s TamilNadu Newsprint & Papers Limited (TNPL)

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

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

- is approved for voluntary participation by DNA of India
- provides direct and indirect employment to the local people



- provides electricity to the deficient electricity grid of western region
- leads to reduced fossil fuel consumption
- does not release pollutants like SPM, CO₂, CO, etc.

The validation team validated the accuracy of the project description through a combination of steps consisting of review of the purchase orders (Ref /5/ to /13/) related to the project activity, commissioning certificates for all the WTG (Ref /14/ to /24/), site visit and interview of the project participant and their representatives. The confirmation that the electricity generated from the project activity will only be exported to the state grid is available through the PPA (Ref /4/).

CAR 1 & CL 15 were raised since the webhosted PDD did not describe the prior experience of the Project Participant in renewable energy projects. Project participant have included the description of all the prior projects in renewable energy with respect to this CAR and clarification request in the revised PDD and hence is closed satisfactorily.

CAR 2 was raised since the technological well being in the webhosted PDD was not described in line with the Indian DNA requirements. The project participant revised the description of technological well being in Section A.2 of the revised PDD and hence the CAR was closed.

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

3.6 Baseline and monitoring methodology

3.6.1 General requirement (76-77)

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

The proposed Project Activity “13.75 MW Grid connected “Wind Electricity generation Project by Tamilnadu Newsprints and Papers Limited” uses the approved methodology ACM 0002, Version 12.2.0 (Ref /60/).

1. The purchase orders (Ref /5/ to /13/) for the windmills and physical verification at site indicate that the project activity involves installation of windmill alone and therefore is a renewable energy project. The purchase orders also indicate that the windmills are new and are not transferred. Further the proposed project activity is a capacity addition project as the project participant has prior wind power installations at the same location as that of the project activity. The validation team noted that the earlier wind power installation of the project participant are 7 MW (Phase I) installed in the year 1993, 3 MW (Phase II) & 3.75 MW (Phase III) installed in the year 2001 & 2004 respectively and subsequently the proposed project activity as 6.25 MW (Phase IV –



also called as sub-bundle I henceforth in this report) and 7.5 MW as phase V (also called as sub-bundle II henceforth in this report). Of the above, Phase II & III have been combined and is registered as a CDM project activity (CDM Registration No 1053). The validation team took note of the fact that the wind power installation under Phase I (7 MW) & Phase II (3 MW) were done under a totally different regulatory regime wherein the MNRE guidelines were considered and sales tax benefits were provided to the investors. Hence the installation under Phase I & II is not considered in further discussions. The Phase III (6.75 MW) wind project is installed in the year 2004 at Devarkulam village in Tirunelveli District which is registered under the CDM (CDM Registration No 1053). Since the location of this wind power installation (Phase III) and the location of wind turbines in the proposed CDM project activity are at the same site, hence the project activity was considered as a capacity addition. However para c of the applied methodology (Refer page 10 of 20) assumes that in case of wind power projects, addition of new capacity does not significantly affect the electricity generated by existing plants / units, provided that the electricity fed into the grid by the added power plant can be directly metered. It further states that in case of capacity addition in wind projects, shadow effects are not accounted for in the applied methodology. The validation team noted that the electricity generated by the individual wind turbines of the proposed project activity can be directly metered to determine EG_{PJy} . Hence even though the proposed project activity is a capacity addition, it does not have any impact on the baseline and emission reduction calculations. The project participant has used Option 2, equation 10 to determine the baseline emissions and therefore the applicability condition no. 2 of the applied methodology is also not applicable.

2. The Grid connectivity was verified through PPA (Ref /4/), samples of records of monthly JMR statements (also known as the Statement showing the energy generated through the wind mill, issued by TNEB) (Ref /74/) and physical connection to the grid at site. As per CEA data (Ref /63/), TamilNadu falls under the Southern grid, the geographic and system boundaries of which are clearly identified and information on the characteristics of the grid is available.
3. Physical verification at site indicate that it is not an add up of a renewable and non-renewable component and only windmills are involved in the project activity and the capacity is 13.75 MW, which falls below the threshold limit of 15 MW for small scale projects. However since the project participant has a 6.75 MW CDM registered wind project in the same site as that of the proposed project activity which are within 1 km of the project boundary and since the total capacity of the earlier wind installation (6.75 MW) and the capacity of the proposed project activity (13.75 MW) exceeds the threshold capacity of 15 MW, it is considered as a debundled component of a large scale project activity. Hence the project participant has applied



- the large scale methodology ACM 0002, Version 12.2.0 and the validation team confirms the same to have been applied appropriately by the project participant. The project falls under Type I Renewable energy projects, Electricity generation for a system.
4. The project activity does not involve switching from fossil fuels to renewable energy sources at the project activity site nor is a biomass fired power plant, but is only a windmill based electricity generation project.
 5. The project activity is not a hydro power plant and hence the applicability condition of power density less than 4 W/m² is not applicable.

The validation team therefore agrees that the project activity meets all the applicability conditions of the selected approved methodology ACM 0002, version 12.2.0 (Ref /60/).

CL 17 was raised by the validation team since the justification for some of the applicability conditions were not discussed transparently in the webhosted PDD. The Project Participant corrected the PDD and the revised PDD describes the justification for applicability condition of the methodology and tool clearly. Hence the CL was closed.

The validation team hereby confirms that the selected baseline and monitoring methodology, ACM 0002, Version 12.2.0 is previously approved by the CDM Executive Board, and is applicable to the project activity, which complies with all the applicability conditions therein.

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

3.6.2 Project boundary (80)

The validation team validated the project boundary as follows:

- a) The spatial extent of the project boundary is assessed through the description in the final PDD and the grid structure in India as known from the official data available from the Central Electricity Authority (CEA) (Ref /63/). The project activity boundary therefore includes the project activity WTG and all power plants connected physically to the southern electricity grid of India that the CDM project power plant is connected to.

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, EG_{PJ,y}. There are no other sources of project emissions. Hence, in line with the applied methodology,



project participant has considered project emissions as zero for renewable energy projects. Further, it is also confirmed through the verification of purchase orders for the WTG (Ref /5/ to /13/) and the commissioning certificates of all the WTG (Ref /14/ to /24/) 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 (Alagiapandiapuram and Devarkulam villages, Tirunelveli District, TamilNadu, India) and temporal (20 years) boundaries of the project activity are clearly defined. Project participant has taken a lifetime of 20 years for the WTG and the validation team confirmed the appropriateness of the technical lifetime of the WTG from the C-WET website.

CL 2 was raised by the validation team since the description of the project boundary included a system boundary as well. The same has been corrected by the project participant and hence the CL is closed.

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 (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 capacity addition project activity is defined as

‘In the absence of the CDM project activity, the existing facility would continue to supply electricity to the grid at historical levels, until the time at which the generation facility would likely be replaced or retrofitted (DATE_{BaselineRetrofit}). From that point of time onwards, the baseline scenario is assumed to correspond to the project activity, and no emission reductions are assumed to occur.’

The validation team noted that as per the above defined baseline scenario, the proposed project activity shall be considered to be the baseline scenario, when the existing wind turbines reach the end of life viz; 20 years. The validation team reviewed the commissioning certificates of the existing 6.75 MW wind turbines (Ref /57/) and observed the date as 24/03/2004. Hence the validation team concluded that the end of life of the existing 6.75 MW wind turbines would be reached in the year 2024.



The project participant has chosen the 10 year fixed crediting period which would end by the year 2022 assuming the project gets registered by February 2012. Since the end of life of the existing project is not reached by the end of the crediting period of the proposed project activity, the validation team accepted and confirms that the same shall not have any impact on the baseline of the proposed CDM project activity.

Project participant has used the official published data on operating and build margin emission factors (Ref /63/) which is calculated as per the "Tool to calculate emission factor for an electricity system". The version of the CEA database used is Version 4, which was available on the start date of validation viz; webhosting date of the PDD. This data is published by Central Electricity Authority (CEA), who is the sole authority for the publication of such data in India. This data is based on Version 1.1 of the 'Tool to calculate the emission factor for an electricity system'. However the project participant has used the latest available version (Version 02.2.0) of the tool which indicates in Step 1 that the tool is not applicable in case the project electricity system is located partially or fully in an Annex 1 country. Further it also includes an optional step, Step 2 which provides an option to project participant to exclude off-grid plants in the project electricity system. Since the Indian Electricity system, wherein the proposed project activity is located in, is well defined and is not located partially or fully in any Annex 1 country, the Step 1 of the tool is still applicable to the project activity. Further since step 2 is optional, the project participant have not considered Step 2 in the estimation of the operating margin and build margin, since the CEA database version 4 calculates the values of operating margin and build margin considering data for grid power plants only. Hence CEA database can still be used (Ref /63/). 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 2005-06 to 2007-08 and for the BM it is 2007-08. Accordingly, the combined margin emission factor is 0.9272 tCO₂/MWh.

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

CAR 6 was raised by the validation team since the CL 8 was raised by the validation team since the algorithm used to calculate the baseline emissions was incorrect. Also CAR 7 was raised since the parameters of operating margin and build margin was not discussed under Section B.6.2 and further it was not clearly stated whether the project participant would use an ex-post or ex-ante value of emission factor. Project participant has corrected the PDD to include the correct algorithms for baseline and



project emissions and also to include the parameters of OM & BM in Section B.6.2 of the revised PDD. It is also clearly stated in Section B.6.2 that the emission factor is fixed ex-ante for the entire crediting period.

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 (92-93)

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

As per the applied methodology ACM 0002, version 12.2.0, the baseline for a capacity addition project activity is defined as

'In the absence of the CDM project activity, the existing facility would continue to supply electricity to the grid at historical levels, until the time at which the generation facility would likely be replaced or retrofitted ($DATE_{BaselineRetrofit}$). From that point of time onwards, the baseline scenario is assumed to correspond to the project activity, and no emission reductions are assumed to occur.'

Even though the project activity is classified as a capacity addition (Please refer Point 1 of Section 3.6.1 above), however in line with the applied methodology, which states that since the addition of new capacity of wind, solar, wave or tidal power plants to the existing units does not significantly affect the electricity generated by the existing plants/units and the electricity fed into the grid by the added power plant (viz; the proposed project activity) could be directly metered and used to determine EG_{PJy} .

Since the electricity produced by the added power plant (viz; the proposed project activity) could be directly metered and recorded, through the TNEB Monthly Statements, which indicate the net electricity supplied to the grid by the individual WEG's, hence $EG_{PJ,y}$, the quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y, could be directly metered. Hence $EG_{PJ,y} = EG_{PJ_addy}$.

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

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

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

BE_y = baseline emissions

$EG_{PJ,y} = EG_{PJaddy}$ = quantity of net electricity supplied to the grid by the added power plant (viz; the proposed project activity)

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

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

$ER_y = BE_y - PE_y - LE_y$ where,

ER_y = emission reductions from the project activity

PE_y = project emissions from the project activity

LE_y = leakage emissions from the proposed project activity.

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

Thus $ER_y = BE_y$

Validation team assessed the calculations of estimated CERs as provided by project participant in a spreadsheet (Ref /70/). The assumptions in this spreadsheet were validated as follows -

Parameter, Value	Source of information	Validation justification
Project Capacity, 13.75 MW	Purchase Order & PPA	The project capacity is as per the documents verified and observation at site.
Number of machines, 11 of 1250 kW	Purchase Order, commissioning certificate	The number of machines is as per the documents provided and seen at site.

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each		
PLF, 25.5%	As per the actual PLF based on previous years generation data	PLF is considered on the basis of the actual PLF achieved by the project activity Wind Turbine Generator since the commissioning till date. This was observed to be conservative as against the TNERC 2006 Order PLF of 24.96 and the bank loan document which states the PLF to be 24%. Refer section 3.6.3 of this report for a detailed explanation regarding the same.
Baseline EF, 0.9272 for Southern grid	CEA database ver. 4	CEA database is an official source of data and Version 4 was the version available at the start of validation viz; webhosting of the PDD for global stakeholder comments and hence accepted.

The estimated annual average of emission reductions of approximately 28,478 tCO_{2e} over the 10 year crediting period of emission reduction represents a reasonable estimation using the assumptions given by the project activity. All the assumptions for this estimate either come from the assumptions used for investment analysis or grid emission factor as taken from CEA website. These are already validated in section 3.6.3 of this report. The validation team confirms that the estimates of baseline emissions can be replicated using the information provided. It also can be verified using the spreadsheet (Ref /70/) for calculations of CERs.

CAR 9 was raised since the webhosted PDD did not have a transparent description of the ex-ante calculation for emission reductions in line with the applied methodology. The revised PDD describes transparently the algorithms used for calculating the emission factor in Section B.6.3 in line with the applied methodology ACM 0002, Version 12.2.0 and hence the CAR was satisfactorily closed.

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

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



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

3.7 Additionality of a project activity (97)

The steps taken by the validation team to assess the additionality of the Project Activity include review of documents indicated in the assumptions in the IRR excel sheet (Ref /71/) and common practice analysis (Ref /76/). The detailed steps are described in Sections 3.7.1 through 3.7.5 below

3.7.1 Prior consideration of the clean development mechanism (104)

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

Project participant provided copies of all the Purchase orders for the sub-bundle I (6.25 MW capacity) & sub-bundle II (7.50 MW capacity) (Ref /5/ to /13/) of the project activity. Since for windmills, there cannot be any other real action before the Purchase order, the validation team accepted the corresponding date of the first purchase order raised, as the starting date for the project activity. Accordingly, 17/12/2005, which is the date of the earliest purchase order raised for the project activity, is accepted as the start date of the project activity.

Since the start date of the project activity was before 02 Aug 2008, the serious consideration of CDM for the project activity was assessed in line with the guidelines as specified in EB 62, Annex 13 (Ref /65/) as under;

As evidence towards prior awareness of CDM, the Project Participant already had initiated actions for registration of their 6.75 MW capacity wind project in TamilNadu State. (CDM registration nos. 1053), prior to the investment decision date for the proposed CDM project activity. Hence the validation team confirms that the Project Participant was aware of CDM prior to the start date of the proposed CDM project activity. Further, from the extract of the minutes of the Board meeting for the sub-bundle I of the project activity dated 22/08/2005 (Ref /25/) it was also noted that the project participant was aware of CDM prior to the start date of the project activity.

The minutes of the 171st Board meeting dated 22/08/2005 (Ref /25/) describes the intention of the company to install a 6±0.25 MW capacity (sub-bundle I of the proposed project activity) wind project at Devarkulam in TamilNadu and also discusses the desire of the organization to avail CDM benefits considering the economics of the project activity.

In order to validate the statements indicated in the extract of Minutes of the Board Meeting (Ref /25/), the validation team also verified the



originals of the Board register at the Head office of the Project Participant at Chennai, TamilNadu based on which the extracts of the Board resolution is made. The review of the Board register indicated that the discussion of Phase IV (sub-bundle I) of the project activity took place in the 171st meeting of the Board of Directors under Item 10 and the contents of the extract of the board resolution (Ref /25/) were found to be matching word by word in the Board register. In the board register, it is indicated that the board discussed about the potential of CDM benefits for the proposed project activity and further states the need for the company to pursue the action of availing CDM benefits for the project activity WEG's.

The minutes of the 180th Board meeting dated 22/11/2006 (Ref /26/) describes the intention of the company to install a 7.5±0.25 MW capacity wind project at Devarkulam in TamilNadu and also discusses the desire of the organization to avail CDM benefits considering the economics of the project activity.

In order to validate the statements indicated in the extract of Minutes of the Board Meeting (Ref /26/), the validation team also verified the originals of the Board register at the Head office of the Project Participant at Chennai, TamilNadu based on which the extracts of the Board resolution is made. The review of the Board register indicated that the discussion of sub-bundle II of the project activity took place in the 180th meeting of the Board of Directors under Item 15 and the contents of the extract of the board resolution (Ref /26/) were found to be matching word by word in the Board register. In the board register, it is indicated that the board discussed about the potential of CDM benefits for the proposed project activity and further states the need for the company to pursue the action of availing CDM benefits for the project activity WEG's.

Further to the above, the validation team interacted and interviewed the top management of the organization viz; Deputy Managing Director (DMD) on 03/11/2009 who was involved in the decision making process for both, sub-bundle I & sub-bundle II of the project activity. The DMD indicated that a Board note was presented by the Finance Department to the Board indicating the financial analysis of the sub-bundles I & II of the project activity, subsequent to which the Board takes the investment decision. It was further confirmed by the DMD that the benefits from CDM were discussed at the time of investment decision. Based on the above, the validation team confirms that CDM benefits were a decisive factor in the decision to proceed with sub-bundles I & II of the Project Activity.

The detailed chronology of events provided in the revised PDD indicates the time gap between the date of placement of purchase orders for sub-bundle I (17/12/2005 – Ref /5/) & the appointment of the CDM consultant



(13/02/2008 – Ref /36/) is more than 2 years (by 2 months) but less than 3 years.

The validation team reviewed all the activities that took place in the interim period and noted that the Project Participant representatives started the process of appointment of CDM consultant on 09/07/2007, which is within the 2 year gap, through a limited enquiry process (Ref /27/) and received a price proposal from the CDM consultant viz; M/s Synergy Global Limited on 23/07/2007 (Ref /28/) within 15 days from the date of floating the enquiry,

The proposal was put up for approval of the Board on 24/07/2007(Ref /29/). The board reviewed the same but decided to follow the competitive bidding process for engaging the CDM Consultant. (Ref /29/).

As a general practice this process popularly known as NIT – Notice Inviting Tender – is a substantially lengthy process as many concerned departments from a public sector organization are involved.

Based on the time line provided in the chronology of events and review of supporting documentation (Ref /27/ to /34/), the validation team noted that from the date of decision for the NIT process till the date of appointment of CDM Consultant, a period of 7 months are utilized. This period is reasonable as any NIT process has a minimum notice/response period for any invitation from public related to the process of appointment of CDM Consultant. The pre tender activities like issuance of advertisement in news paper, scrutiny of responses, drafting of pre-qualification criteria for CDM consultant, drafting of Tender document etc are time consuming and in public sector the said activities are carried out in a cross sectional team. Close scrutiny of the activities listed indicates that there is no undue delay in taking the decision on the subsequent activities leading to the appointment of CDM Consultant.

The Project Participant has completed the other activities like local stakeholder consultation process, appointment of DOE for validation services, webhosting of the PDD for global stakeholder consultation process etc are completed in a short span of 8 months from the date of appointment of CDM consultant. Hence the validation team confirms that the time gap between the start date of the project activity (sub-bundle I) and appointment of CDM consultant and subsequently the other activities are adequately justified for sub-bundle I of the project activity.

The events related to the project implementation and CDM implementation for sub-bundle II of the project activity indicate that all the activities from the Board resolution, appointment of the CDM consultant and also appointment of the DOE for validation services were all completed well within a time span of 2 years and thus adequately meets the requirements specified by EB 62, Annex 13 (Ref /65/).



However the validation team noted that the time gap between placing the purchase order (Ref /5/ to /13/) and the commissioning of the wind turbines (Ref /14/ to /24/) is 2 months for sub-bundle I and 1 month for sub-bundle II. The validation team accepted the short time gap between placing the purchase orders and commissioning of wind turbines and the reason for accepting 2/1 month(s) as reasonable time for commissioning is due to the fact that an investor in wind mills can avail depreciation in the months of March and September, if the machine is commissioned by that time. This leads to a rush for machines, e.g. WTGs in last quarter [January – March and August-September] of each financial year. The DOE is aware about this and knows that M/s. Suzlon Energy Limited plans for this rush by keeping in standard machines ready for quick delivery in these months. We therefore confirm that the prevailing practice in India, especially for wind projects, are that the WTG suppliers identify and develop the wind farms including obtaining all legal clearances and the basic infrastructure needed for wind mills. Upon receipt of a purchase order from a client, the only activity required to be done is to transfer the equipment to site, erect and commission, which, does not take more than 30 – 90 days in general. At times, the suppliers even erect the Wind Turbine generator's at the wind farm site. However these windmills are not commissioned. Only upon receipt of a firm purchase order from a client, the Wind Turbine generators are commissioned and all the clearances are transferred to the client. Both these activities happen / could happen parallelly. In such cases, the necessary formalities can be completed within a short duration of 7 days too.

Project participant had provided in the revised PDD, the detailed chronology of events since the date of decision for sub-bundles I and II of the project activity. The validation team verified the evidences for all the events listed in the chronology under Section B.5 of the revised PDD.

Hence the validation team confirms that the proposed project activity adequately meets the requirements as mandated by the Guidelines on the Demonstration and Assessment of Prior Consideration of the CDM, Version 04, EB 62 (Ref /65/).

CAR 17 was raised since the process of investment decision taken by the Board of Directors was not clear. The Project Participant has explained the entire process of decision making and hence the CAR was closed.

CAR 18 was raised by the validation team since the chronology of events was not transparently explained in the webhosted PDD. The Project Participant has now detailed out the entire chronology of events related to project as well as CDM implementation for the 2 phases separately. Hence the CAR was closed.

CL 9 was raised since the explanation of how 17/12/2005 was taken as the start date of the project activity was not explained. The Project Participant provided the validation team with copies of all the purchase



orders placed for the project activity (both sub-bundle I & II), based on the review of which the validation team concluded that the first purchase order for the project activity was placed on 1712/2005. Hence the CL was closed.

From the above discussions, it is seen that the project participant was aware of CDM prior to the start date of the project activity and even prior to the decision for the project activity. From the minutes of the Board meeting, it is seen that the benefits of CDM were a decisive factor in the decision to proceed with the project activity. Further, continuing and real actions were taken by project participant to secure CDM status in parallel with the implementation of the project activity. This is in line with para 8 of Annex 13 of EB 62 (Ref /65/).

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

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

3.7.1.1 Historical information on project timeline

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

3.7.2 Identification of alternatives (107)

The approved methodology ACM 0002, Version 12.2.0 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".

Further as per para 104 of VVM manual ver 1.2 (Ref /62/) and para 4 of the additionality tool (Ref /66/), the credible alternative to the project activity would be no project activity itself. Since the applied methodology itself prescribes a pre-defined baseline scenario, no further analysis on identification of alternatives is required.

3.7.3 Investment analysis (114)

The project participant has demonstrated the additionality of the project activity using the investment analysis, as stated in Step 2 of the latest version of the additionality tool (Ref /66/).

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The webhosted PDD initially did not have sufficient information to conclude that the project activity was additional. CAR 19 was raised in this regard. Project participant made the assumptions transparent and rationalized the investment analysis in response to the CAR raised. Hence the CAR was closed.

The investment decision for the project activity was taken in 2 phases viz on 22/08/2005 for sub-bundle I of the project activity and 22/11/2006 for sub-bundle II of the project activity. Accordingly the investment analysis has been done separately for sub-bundles I & II of the project activity.

The validation team validated the input values used in the investment analysis for **sub-bundle I (6.25 MW)** as follows –

Parameter, Value	Source of information	Validation justification
Total project cost INR 303.57 million (inclusive of land cost)	Offer letter from M/s Suzlon Energy Limited dated 09/06/2005 (Ref /40/)	The project cost is taken from the price bid submitted by M/s Suzlon Energy Limited dated 09/06/2005 in response to the global bid for setting up a 6 ± 0.25 MW project capacity, which reflects the project cost applicable at the time of decision making. Land cost is considered as zero since the Project Participant already had the land available. This is as per para 6 of Guidelines on the Assessment of Investment Analysis (EB 62 Annex 5). The actual cost of the project activity was also verified based on the purchase orders and subjected to a sensitivity analysis, as discussed below.
Project Capacity, 6.25 MW	Board Resolution (Ref /25/) and Purchase order	The project capacity is as per the discussion in the Board resolution and also the purchase order raised.
Number of machines, 5	Purchase order	The number of machines is verified from site visit, purchase orders and also from commissioning certificates.
PLF(CUF), 25.5%	Maximum Actual PLF of the individual Wind	The validation team verified the PLF as per the information



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Parameter, Value	Source of information	Validation justification
	Turbine Generator since commissioning. (Ref /41/)	submitted to the bank for financing (Ref /42/ & /43/). As per the letter from the bank, it is indicated that the annual power generation from each wind turbine of 1250 kW capacity is 26,28,000 kWh which works out to a PLF of 24%. Since the PLF value is determined in line with the requirements specified in EB 48, Annex 11, the validation team accepted the same. However the validation team further reviewed the TNERC Order 2006 (Ref /44/), which is post the investment decision date, and observed that the PLF indicated for higher capacity machines in the Shencotta region (wherein the project activity wind turbines are located) is 24.96%. The validation team reviewed the TNERC Order of 2006 since there were no earlier TNERC Orders available at the time of investment decision and further the TNERC Order of 2006 was introduced just 6 months after the investment decision for sub-bundle I. The validation team also reviewed the actual annualized PLF of the project activity wind turbines since their commissioning of 2006 till April 2010 and observed that the maximum PLF reached was 25.5%. Hence based on the review of the above documents, the validation team confirms that the PLF of 25.5 % was observed to be the most conservative value for consideration in the IRR analysis. The Project Participant has further subjected the PLF to a sensitivity



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Parameter, Value	Source of information	Validation justification
		analysis of $\pm 10\%$. Please refer discussion below on sensitivity analysis.
O&M cost per year for the first 3 years, INR 2.75 million	Offer letter from the WEG supplier dated 09/07/2005 (Ref /40/)	The offer letter from Suzlon Energy Limited indicates different O&M cost for the first 30 months and subsequently on annual basis till the end of 8 th year. Since the offer letter was available to the Project Participant at the time of investment decision, the validation team accepted the same.
O&M cost per year for the 4 th year, INR 6.29 million	Offer letter from the WEG supplier dated 09/07/2005 (Ref /40/)	The offer letter from Suzlon Energy Limited indicates the O&M cost for the 4 th year separately. Since the offer letter was available to the Project Participant at the time of investment decision, the validation team accepted the same.
O&M cost per year for the 5 th year, INR 6.66 million	Offer letter from the WEG supplier dated 09/07/2005 (Ref /40/)	The offer letter from Suzlon Energy Limited indicates the O&M cost for the 5 th year separately. Since the offer letter was available to the Project Participant at the time of investment decision, the validation team accepted the same.
O&M cost per year for the 6 th year, INR 7.04 million	Offer letter from the WEG supplier dated 09/07/2005 (Ref /40/)	The offer letter from Suzlon Energy Limited indicates the O&M cost for the 6 th year separately. Since the offer letter was available to the Project Participant at the time of investment decision, the validation team accepted the same.
O&M cost per year for the 7 th year, INR 7.41 million	Offer letter from the WEG supplier dated 09/07/2005 (Ref /40/)	The offer letter from Suzlon Energy Limited indicates the O&M cost for the 7 th year separately. Since the offer letter was available to the Project Participant at the time of investment decision, the



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Parameter, Value	Source of information	Validation justification
		validation team accepted the same.
O&M cost per year for the 8 th year, INR 7.78 million	Offer letter from the WEG supplier dated 09/07/2005 (Ref /40/)	The offer letter from Suzlon Energy Limited indicates the O&M cost for the 8 th year separately. Since the offer letter was available to the Project Participant at the time of investment decision, the validation team accepted the same.
O&M cost per year from the 9 th to the 20 th year, INR 7.78 million	Assumed for conservativeness.	The offer letter from Suzlon Energy Limited indicates the O&M cost only upto the 8 th year. It is further indicated that the O&M cost from the 9 th year onwards would be made on mutual agreement. Since the offer letter of Suzlon Energy Limited did not specify the O&M cost, the validation team accepted the assumption of INR 7.78 million which is the same cost as that of the 8 th year. The validation team confirms that is a conservative approach, as the O&M cost normally tends to escalate further as the life of the wind turbines increases. Further the Project Participant has subjected the O&M cost to a sensitivity analysis, by considering the actual O&M cost based on the purchase order placed.
Deration, 5% after 10 years	Directory of Wind Power, 2004 (Ref /45/)	The Directory of Wind Power, 2004 indicates a one time deration of wind turbines as 5% after 10 th year. Since the document was available to the Project Participant at the time of investment decision, the validation team accepted the same. Further the validation team also reviewed the TNERC Order 2006



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Parameter, Value	Source of information	Validation justification
		which indicates the duration to be 1 % each year after the 10 th year. This would deduce to be 10% after the 10 th year of operation. Hence the validation team confirms that the value of one time duration of 5% considered after the 10 th year is conservative.
Debt equity ratio, 77:23	Actual Debt-equity ratio for the earlier wind project, as indicated in the registered PDD (Ref /46/)	The debt equity ratio for the previous loan taken by the Project Participant for the existing project is considered. The value is taken from the registered PDD of the existing project (Ref /46/) The validation accepts this value to be in line with the Para 17, Annex 5 of EB 62.
Interest rate on term loan, 7%	Interest rate on loan taken by the Project Participant for the earlier wind project, as indicated in the registered PDD (Ref /46/)	The interest rate for the previous loan taken by the Project Participant for the existing project is considered and taken from the registered PDD (Ref /46/). The validation accepts this value to be in line with the Para 17, Annex 5 of EB 62.
Loan Repayment period, 5 years	Repayment period on the loan taken by the Project Participant for the earlier wind project, as indicated in the registered PDD (Ref /46/)	The loan repayment period for the previous loan taken by the Project Participant for the existing project is considered and taken from the registered PDD (Ref /46/). The validation accepts this value to be in line with the Para 17, Annex 5 of EB 62.
Insurance charges@ percentage of capital cost, 0.50 %	Normative	The validation team reviewed the TNERC Order of 2006 and observed that the insurance charges are indicated to be 0.75 % of the capital cost. Hence the insurance charges considered are conservative, reasonable and not material.



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Parameter, Value	Source of information	Validation justification
Power Tariff, INR 2.70/kWh	Tariff indicated in the PPA of the earlier wind project of the project participant in the same region (Ref /47/)	The tariff is considered from the PPA signed between the project participant and TNEB for the existing 3.75 MW project of the Project Participant in the same region. Since this data was available to the project participant at the time of investment decision, the validation team accepted the same.
CER price Euro/CER, 14.7	http://wbcarbonfinance.org/docs/FinalNarrativeReport_DelhiGHGForum2006.doc	This is the CER price applicable at the time of investment decision.
Euro exchange rate, INR/Euro is 56.29	http://www.x-rates.com/d/INR/EUR/hist2005.html	This is the exchange rate applicable at the time of investment decision.
Baseline EF, 0.9272 tCO ₂ /MWh	CEA database, Version 4.	CEA database is an official source of data published by the Central Electricity Authority in India and hence acceptable. (As explained in section 3.5.3 of this report). The validation team verified the values of Operating Margin and Build Margin from the CEA database, Version 4 and the Combined Margin calculations from the CER excel sheet and confirms that they are correct.

The validation team validated the input values used in the investment analysis for **sub-bundle II (7.5 MW)** as follows –

Parameter, Value	Source of information	Validation justification
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Parameter, Value	Source of information	Validation justification
Total project cost INR 384.51 million (inclusive of land cost)	Offer letter from M/s Suzlon Energy Limited dated 12/09/2006 (Ref /48/)	The project cost is taken from the price bid submitted by M/s Suzlon Energy Limited dated 12/09/2006 in response to the global bid for setting up a 7.5 MW project capacity, which reflects the project cost applicable at the time of decision making. Land cost is considered as zero since the Project Participant already had the land available. This is as per para 6 of Guidelines on the Assessment of Investment Analysis (EB 62 Annex 5). The actual cost of the project activity was also verified based on the purchase orders and subjected to a sensitivity analysis, as discussed in sections below.
Project Capacity, 7.50 MW	Board Resolution (Ref /26/) and Purchase order	The project capacity is as per the discussion in the Board resolution and also the purchase order raised.
Number of machines, 6 of 1250 kW each	Offer letter from M/s Suzlon Energy Limited dated 12/09/2006 (Ref /48/). Also from Purchase orders (Ref /6/ to /13/)	The number of machines is verified from site visit, purchase orders and also from commissioning certificates.
PLF(CUF), 25.5%	Maximum Actual PLF of the individual Wind Turbine Generator since commissioning. (Ref /41/)	The validation team verified the PLF as per the information submitted to the banks for financing (Ref /49/ & /50/). As per the letter from the banks, it is indicated that the annual power generation from each wind turbine of 1250 kW capacity is 26,28,000 kWh which works out to a PLF of 24%. Since the PLF value is determined in line with the requirements specified in EB 48, Annex 11, the validation team accepted the



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Parameter, Value	Source of information	Validation justification
		same. However the validation team further reviewed the TNERC Order 2006 (Ref /44/), which was the applicable tariff order available at the time of investment decision, and observed that the PLF indicated for higher capacity machines in the Shencotta region (wherein the project activity wind turbines are located) is 24.96%. The validation team also reviewed the actual annualized PLF of the project activity wind turbines since their commissioning of 2007 till April 2010 and observed that the maximum PLF reached was 25.5%. Hence based on the review of the above documents, the validation team confirms that the PLF of 25.5 % was observed to be the most conservative value for consideration in the IRR analysis. The Project Participant has further subjected the PLF to a sensitivity analysis of $\pm 10\%$. Please refer discussion below on sensitivity analysis.
O&M cost per year for the first 3 years, INR 5.04 million	Offer letter from the WEG supplier dated 12/09/2006 (Ref /48/)	The offer letter from Suzlon Energy Limited indicates different O&M cost for the first 30 months and subsequently on annual basis till the end of 8th year. Since the offer letter was available to the Project Participant at the time of investment decision, the validation team accepted the same.
O&M cost per year for	Offer letter from the WEG supplier dated	The offer letter from Suzlon Energy Limited indicates the O&M



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Parameter, Value	Source of information	Validation justification
the 4 th year, INR 8.08 million	12/09/2006 (Ref /48/)	cost for the 4 th year separately. Since the offer letter was available to the Project Participant at the time of investment decision, the validation team accepted the same.
O&M cost per year for the 5 th year, INR 8.48 million	Offer letter from the WEG supplier dated 12/09/2006 (Ref /48/)	The offer letter from Suzlon Energy Limited indicates the O&M cost for the 5 th year separately. Since the offer letter was available to the Project Participant at the time of investment decision, the validation team accepted the same.
O&M cost per year for the 6 th year, INR 8.91 million	Offer letter from the WEG supplier dated 12/09/2006 (Ref /48/)	The offer letter from Suzlon Energy Limited indicates the O&M cost for the 6 th year separately. Since the offer letter was available to the Project Participant at the time of investment decision, the validation team accepted the same.
O&M cost per year for the 7 th year, INR 9.36 million	Offer letter from the WEG supplier dated 12/09/2006 (Ref /48/)	The offer letter from Suzlon Energy Limited indicates the O&M cost for the 7 th year separately. Since the offer letter was available to the Project Participant at the time of investment decision, the validation team accepted the same.
O&M cost per year for the 8 th year, INR 9.83 million	Offer letter from the WEG supplier dated 12/09/2006 (Ref /48/)	The offer letter from Suzlon Energy Limited indicates the O&M cost for the 8 th year separately. Since the offer letter was available to the Project Participant at the time of investment decision, the validation team accepted the same.
O&M cost per year from the 9 th to the 20 th year, INR 9.83 million	Assumed conservativeness. for	The offer letter from Suzlon Energy Limited indicates the O&M cost only upto the 8 th year. It is further indicated that the O&M cost from the 9 th year onwards would be made based on mutual



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Parameter, Value	Source of information	Validation justification
		agreement between the Project Participant and the O&M contractor. Since the offer letter of Suzlon Energy Limited did not specify the O&M cost, the validation team accepted the assumption of INR 9.83 million which is the same cost as that of the 8th year. The validation team confirms that is a conservative approach, as the O&M cost normally tends to escalate further from the cost of previous year as the life of the wind turbines increases. Further the Project Participant has subjected the O&M cost to a sensitivity analysis, by considering the actual O&M cost based on the purchase order placed.
Deration, 1% year after the 10 th year	TNERC Order 2006 (Ref /44/)	The TNERC Order of 2006, which was available and applicable at the time of investment decision, indicates a deration of wind turbines as 1% every year, after the 10th year of operation. Since the Order was available to the Project Participant at the time of investment decision, the validation team accepted the same.
Debt equity ratio, 77:23	Actual Debt-equity ratio for the earlier wind project, as indicated in the registered PDD (Ref /46/)	The debt equity ratio for the previous loan taken by the Project Participant for the existing project is considered. The value is taken from the registered PDD of the existing project (Ref /46/) The validation accepts this value to be in line with the Para 17, Annex 5 of EB 62.
Interest rate on term loan, 7%	Interest rate on loan taken by the Project Participant for the earlier wind project, as	The interest rate for the previous loan taken by the Project Participant for the existing project is considered and taken from the



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Parameter, Value	Source of information	Validation justification
	indicated in the registered PDD (Ref /46/)	registered PDD. The validation accepts this value to be in line with the Para 17, Annex 5 of EB 62.
Loan Repayment period, 5 years	Repayment period on the loan taken by the Project Participant for the earlier wind project, as indicated in the registered PDD (Ref /46/)	The loan repayment period for the previous loan taken by the Project Participant for the existing project is considered and taken from the registered PDD (Ref /46/). The validation accepts this value to be in line with the Para 17, Annex 5 of EB 62.
Insurance charges@ percentage of capital cost, 0.75 %	Normative	The validation team reviewed the TNERC Order of 2006 and observed that the insurance charges are indicated to be 0.75 % of the capital cost. Since the TNERC Order was available at the time of investment decision, hence the insurance charges considered are reasonable and not material.
Power Tariff, INR 2.90/kWh	Tariff indicated in the TNERC Order of 2006 (Ref /44/)	The tariff is considered from the TNERC Order 2006 which was available to the Project Participant at the time of investment decision. The validation team also reviewed the tariff indicated in the PPA signed between the project participant and TNEB for the Phase I of this project bundle (Ref /4/) and observed the value to be INR 2.70/kWh. Since the tariff indicated in the TNERC Order 2006 (Ref /44/) was higher than the tariff indicated in the PPA (Ref /4/), the validation team accepted the tariff of INR 2.90/kWh as a conservative value.
CER price Euro/CER, 14.7	http://wbcarbonfinance.org/docs/FinalNarrativeReport_DelhiGHGForum2006.doc	This is the CER price applicable at the time of investment decision.



Parameter, Value	Source of information	Validation justification
Euro exchange rate, INR/Euro is 56.29	http://www.x-rates.com/d/INR/EUR/hist2005.html	This is the exchange rate applicable at the time of investment decision.
Baseline EF, 0.9272 tCO ₂ /MWh	CEA database, Version 4.	CEA database is an official source of data published by the Central Electricity Authority in India and hence acceptable. (As explained in section 3.5.3 of this report). The validation team verified the values of Operating Margin and Build Margin from the CEA database, Version 4 and the Combined Margin calculations from the CER excel sheet and confirms that they are correct.

The validation team hereby confirms that project participant has applied all the statutory levies and taxes as per the then valid tax rules. Project participant has also applied incentives like accelerated depreciation, additional depreciation and provisions of section 80IA [deferred tax benefit] as per Indian Income Tax Act (Ref /68/). The validation team validated the assumptions as above and observed that they are correct. The financial expert also verified the IRR calculations and observed them to be correct. The input values are as per para 110 of VVM ver 1.2 and in line with Guidelines on the Assessment of Investment Analysis (EB 62 Annex 5).

The project participant has chosen benchmark analysis to demonstrate additionality of the project and for this purpose, has selected project IRR as the financial indicator. As per Annex 5 of EB 62 "In cases where benchmark approach is used, the applied benchmark shall be appropriate to the type of IRR calculated. Local commercial lending rates or Weighted Average Cost of Capital (WACC) are appropriate benchmarks for project IRR". Since project IRR has been selected as the financial indicator, as per the guidance, the local commercial lending rate viz; the Reserve Bank of India's Prime Lending Rate (RBI PLR) has been chosen as the benchmark for the project activity. Therefore the benchmark selected is appropriate to financial indicator chosen and is also in conformity with the EB guidance provided.

The validation team reviewed the RBI website (Ref /51/) and observed that the PLR applicable at the time of investment decision for sub-bundle I of the project activity was ranging from 10.25 – 10.75 % and hence the



average value of 10.5% has been considered as the benchmark for sub-bundle I of the project activity. Further the validation team reviewed the PLR data applicable at the time of investment decision for sub-bundle II of the project activity was ranging from 11.00 – 11.50 % (Ref /52/) and hence the average value of 11.25% has been considered as the benchmark for Phase II of the project activity

The validation team verified the correctness and authenticity of the data used for the benchmark determination and found them to be correct and publicly available. This is also in line with the guidelines for benchmark selection stipulated in the Guidelines on the Assessment of Investment Analysis, EB 62 Annex 5 and hence the validation team has accepted the same. The validation team therefore concluded that the benchmark adopted by the Project Participant to establish the investment analysis is 10.50% (for sub-bundle I) and 11.25% (for sub-bundle II) and consequently the project's additionality, is correct and valid.

The validation team confirms that the project IRR for the project activity works out to be 8.00 % (for sub-bundle I) and 7.61% (for sub-bundle II) which is lower than the benchmark of 10.50 & 11.25 % respectively.

Sensitivity Analysis, sub-bundle I:

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

The project IRR values with $\pm$ 10% sensitivity for PLF are 9.76 % (+10% PLF) and 6.10 % (-10% PLF). It is seen that the project IRR with sensitivity on PLF is below the benchmark value, without CDM.

The validation team agrees with the +10 % variation subjected on PLF since the PLF stated by the TNERC Order 2006 (Ref /44/), which even though not applicable at the time of investment decision but was available within 6 months of the investment decision, indicates the average PLF in the Shencottah pass (wherein the project activity wind turbines operate) to be 24.96 for large machines viz; upto 1650 kW. The 10% variation subjected by the Project Participant over the base case PLF of 25.5 % results in a sensitivity analysis for PLF at 28.05% which is higher than the PLF value of 24.96 as indicated in the TNERC Order. The validation team further noted that the average PLF for the entire State of TamilNadu was 25.29 as indicated in the TNERC Order of 2006 (Ref /44/), however the sensitivity analysis is conducted to cover the PLF value of 28.05. Hence the validation team confirms that the +10% sensitivity on PLF value is adequate.



Project Proponent has conducted a sensitivity analysis of -10% on the O&M cost and the project IRR value was 8.32%, which is lower than the benchmark. The validation team verified the actual O&M cost based on the O&M agreement signed between the Project Participant and M/s Suzlon Infrastructure Services Ltd (Ref /53/ & /54/) and compared the same with the O&M cost indicated in the offer letter submitted by M/s Suzlon Energy Ltd (Ref /48/). The team observed that there is a difference of about 2.69% in the O&M cost as against indicated in the offer letter. Hence the validation team confirms that the sensitivity analysis of -10 % on the O&M cost (which is more conservative than the actual variation of -2.69%) and observed that the project IRR of 8.32% is below the benchmark.

Project Proponent has conducted a sensitivity analysis of -5% on the project cost. The reason for subjecting the project cost to a sensitivity analysis of only -5% is that the difference in the project cost indicated in the initial offer (INR 303.57 million) and the cost as per actual P.O raised (INR 301.17 million) is only about 0.79 %. Since the project cost can not be any lower than the cost in the P.O, the validation team accepted a sensitivity analysis of -5% on project cost to be adequate.

The project IRR based on the sensitivity analysis of -5% on the project cost works out to be 8.79% without CDM revenue, which is below the benchmark.

The Project Proponent has conducted a sensitivity analysis on the power tariff even though the power tariff, as described in the PPA, is fixed for the entire life of the project activity. The project IRR based on the sensitivity analysis of +10% on the tariff works out to be 9.76% without CDM revenue, which is below the benchmark

Sensitivity Analysis, sub-bundle II:

The project IRR values with $\pm 10\%$ sensitivity for PLF are 9.36 % (+10% PLF) and 5.71 % (-10% PLF). It is seen that the project IRR with sensitivity on PLF is below the benchmark value, without CDM.

The validation team agrees with the +10 % variation subjected on PLF since the PLF stated by the TNERC Order 2006 (Ref /44/), which was applicable and available at the time of investment decision, indicates the average PLF in the Shencottah pass (wherein the project activity wind turbines operate) to be 24.96 for large machines viz; upto 1650 kW. The 10% variation subjected by the Project Participant over the base case PLF of 25.5 % results in a sensitivity analysis for PLF at 28.05% which is higher than the PLF value of 24.96 as indicated in the TNERC Order. The validation team further noted that the average PLF for the entire State of TamilNadu was 25.29 as indicated in the TNERC Order of 2006 (Ref /44/), however the sensitivity analysis is conducted to cover the PLF value of 28.05. Hence the validation team confirms that the +10% sensitivity on PLF value is adequate.



Project Proponent has conducted a sensitivity analysis of -10% on the O&M cost and the project IRR value was 7.95%, which is lower than the benchmark. The validation team verified the actual O&M cost based on the O&M agreement signed between the Project Participant and M/s Suzlon Infrastructure Services Ltd (Ref /55/ & /56/) and compared the same with the O&M cost indicated in the offer letter submitted by M/s Suzlon Energy Ltd (Ref /48/). The team observed that there is a difference of about 1.73% in the O&M cost as against indicated in the offer letter. Hence the validation team confirms that the sensitivity analysis of -10 % on the O&M cost (which is more conservative than the actual variation of -1.73%) and observed that the project IRR of 7.60% is below the benchmark.

Project Proponent has conducted a sensitivity analysis of -5% on the project cost. The reason for subjecting the project cost to a sensitivity analysis of only -5% is that the difference in the project cost indicated in the initial offer (INR 384.51 million) and the cost as per actual P.O raised (INR 378.63 million) is only about 1.53 %. Since the project cost can not be any lower than the cost in the P.O, the validation team accepted a sensitivity analysis of -5% on project cost to be adequate.

The project IRR based on the sensitivity analysis of -10% on the project cost works out to be 8.39% without CDM revenue, which is below the benchmark.

The Project Proponent has conducted a sensitivity analysis on the power tariff even though the power tariff, as described in the PPA, is fixed for the entire life of the project activity. The project IRR based on the sensitivity analysis of +10% on the tariff works out to be 9.36% without CDM revenue, which is below the benchmark

The validation team raised CAR 19 since the IRR working described in the webhosted PDD were not described clearly, also input values for the investment analysis were not completely indicated and also since the webhosted PDD did not subject some of the project parameters to a sensitivity analysis.

The revised PDD and the revised IRR excel sheet describes all the assumptions along with the source of the information and also have conducted sensitivity analysis on parameters of PLF, project cost, O&M cost and the tariff. Hence CAR 19 was satisfactorily closed.



CAR 20 was raised since the Project Participant did not consider salvage value of the project activity equipments in its IRR working. The Project Participant revised the IRR sheet to include the salvage value of equipments and hence the CAR was closed. The validation team, based on the assessment result by the financial expert engaged (Ref /72/), hereby confirms that the underlying assumptions are appropriate and the financial calculations are correct.

CL 24 was raised since justification for applying a normal sensitivity of $\pm 10\%$ was not provided in the webhosted PDD. The Project Participant has now provided justification for applying a normal sensitivity analysis of $\pm 10\%$ in the revised PDD and hence the CL is closed.

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

The validation team therefore confirms that the project IRR for the project activity without CDM revenue is 8.00% & 7.61% for sub-bundle I & II respectively and even with sensitivity analysis, the values does not cross the benchmark.

Based on the above discussions and on the assessment result by the financial expert engaged (Ref /72/), the validation team hereby confirms that the underlying assumptions are appropriate and the financial calculations are correct.

3.7.4 Barrier analysis (118)

Project participant had discussed additionality by barrier analysis in the webhosted PDD. The validation team raised CAR 15 to indicate that the barriers discussed under Section B.5 of the webhosted PDD are not specific to the Project Participant but are also faced by other investors. The Project Participant deleted the discussions on barrier analysis in the revised PDD and hence the CAR was closed.

3.7.5 Common practice analysis (121)

The Project Participant has demonstrated common practice analysis based on the latest version of the additionality tool (Ref /66/). Since the proposed project activity does not fall under any of the measures defined in para 6 of the tool, the Project Participant has demonstrated the common practice analysis using sub-steps 4a and 4b only.

The geographical scope of the common practice analysis is limited to the state of Tamil Nadu. Validation team agrees with this because the regulatory and tariff policies in India with respect to the windmills change



from state to state. Each state has its own regulatory tariff orders and offers different incentives to wind mill developers. Therefore, the regulatory environment for the investment in windmills would be comparable only at the state level.

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

1. Under sub-step 4a, the Project participant has defined the following criteria for considering similar scale projects by identifying and comparing wind farm projects in the State of Tamil Nadu
 - a. with an applicable output range of less than 50% of the proposed project activity capacity viz; 6.875 MW and above and
 - b. wind projects commissioned between September 2001 to March 2007.

The validation team accepted the first criteria defined above, since the Project Participant has now compared projects with capacities ranging from 6.875 MW and above, based on the data provided in the Wind Power Directory of 2007. The Wind Power Directory of 2007 provides information on installation of wind turbines by a project owner along with information on WTG capacity, total installation, location & date of commissioning. The validation team confirms that The Wind Power Directory is the only publicly available source that provides a comprehensive list of the wind turbines installed in the country. The validation team noted that common practice analysis, as per the additionality tool, is required to be conducted only for large scale projects and since the proposed CDM project activity has a capacity of 13.75 MW [which falls under the small scale criteria], hence wind power projects with capacity at -50% of the output capacity viz; 6.875 MW and above are now compared.

Further the validation team accepted the second criteria since all the wind power projects in the country commissioned prior to September 2001 were governed by the Ministry of New and Renewable Energy (MNRE) policy which provided benefits for development of wind power projects like escalation in the power tariff by 5% every year over the previous year, sales tax benefits etc. which were subsequently withdrawn from September 2001; wherein the MNRE policy was superseded by the Regional State Electricity regulatory Commission viz; TNERC for the State of TamilNadu. The analysis is limited to 31/03/2007 since the Wind Turbine Generator of both the phases of the proposed project activity was commissioned by 31/03/2007. Hence the above criterion ensures that the comparison is done with wind projects of similar scale and nature. The validation team would like to confirm that the Project Participant has conservatively considered similar



projects for comparison upto March 2007 and not upto the investment decision date viz; in the year 2005. Thus the data of projects considered for common practice analysis is larger and thus more conservative.

Based on the above criterion, the Project Participant has identified a total of 76 projects in the region, which are set up post-September 2001 upto March 2007 with project capacity of 6.875 MW and above. Of the total of 76 projects, 60 projects are under various stages of CDM registration or registered with the UNFCCC and the remaining 16 projects are similar to the proposed project activity. Hence as can be seen, about 80 % of the projects are implemented with consideration of CDM revenue.

2. In Sub-step 4 (b) of the revised PDD, the Project Participant has further analyzed the 16 projects which are similar to the proposed CDM project activity under sub-step 4b in Section B.5 of the revised PDD to explain essential distinctions between them and the proposed CDM project activity. Of the 16 similar projects, the Project Participant has demonstrated that 10 projects are in the process of VCS registration or already registered under VCS.

The projects are;

1. Laxmi Ring Travelers,
2. Sri Ranganathar Industries Ltd,
3. GHGL,
4. Raja Steels,
5. Rajapalayam Steels,
6. Rajpalyam Silks
7. Ramco Industries Ltd and,
8. Sri Vasudeva Textiles
9. Sri Ishwarya Textiles
10. DCW

The validation team verified the VCS registry and observed that the above projects are under various stages of VCS validation or registered with VCS. The validation team would like to clarify that for the projects which are not registered with the VCS registry; the Project Participant has provided the web-links of the consultant handling such projects wherein the VCS PD and the validation opinion could be seen for the concerned organizations. The validation team accepted the same since access to the VCS PD / VCS Validation Report from a public domain [like the VCS registry] in such cases is not practically possible. The above 10 VCS projects enjoy benefits wherein these projects accrue other financial benefits in the form of Voluntary Carbon units [VCU's] which are additional than the tariff received by the projects. Apart from this, the validation team also noted that the power generated by the wind turbines of M/s Laxmi Ring Travelers [Sr No 1 above] and Sri Vasudeva Textiles [Sr No 8 above] are used for captive consumption for their manufacturing



units. Therefore these projects are not comparable with the proposed project activity [which exports the generated electricity to the grid] as the tariff received by the Project Participant and the tariff saved by the investor for captive consumption are totally different. Further the baseline scenario for a captive investor would be different than the baseline for the proposed CDM project activity. Therefore these 10 projects are excluded from the list of 16 similar projects

Of the remaining 6 projects, 1 project [totaling a capacity of 21.15 MW] is installed by wind farm developer viz; M/s NEG Micon and another project [capacity of 8.75 MW] is developed by another wind farm developer M/s Suzlon Infrastructure Ltd.

NEG Micon and Suzlon Infrastructure Limited are wind turbine manufacturing companies. Typically WEG manufacturing companies install wind farms for marketing purposes with the motive of selling to individual customers at a later date and CDM development is undertaken under the name of the individual customers. These projects are not set up with the primary purpose of revenue generation through sale of power, unlike the proposed project activity, but for sale to other parties. Further, NEG Micon was taken over by Vestas in the year 2006 and the company no longer exists, hence the current status of these installations in terms of ownership as well as CDM development is not available in the public domain like CDM Pipeline or other industry specific publications. The validation team noted that the business activity of these 2 entities is primarily to set up wind farms unlike the Project Participant who is not into manufacturing of wind farms. Therefore these 2 investments cannot be compared with the proposed project activity and therefore excluded from the analysis.

The validation team noted that for the remaining 4 similar projects, the necessary data/information with respect to the status of implementation etc is not available in the public domain and hence not accessible to the Project Participant to conduct this analysis. The validation team could not analyze further due to lack of information available in the public domain. The validation team reviewed the website of CDM pipeline and also reviewed the website of the organization, but could not locate any information regarding to the wind power project. Therefore these 4 projects have been excluded (since data / information is not available / accessible) from this analysis, which is also permitted as per the Tool for "Demonstration and Assessment of Additionality".

Hence, in conclusion, the validation team observed that by excluding the 4 projects for which data is not available /accessible, it has been demonstrated that almost 95% of the projects [72 projects out of a total of 76 projects] are not similar to the proposed project activity. Therefore the



validation team concluded that the proposed project activity is not a common practice in the region and the project is additional.

The information on similar large scale projects was validated using the Indian Wind Power Directory 2007 (Ref /76/).

CAR 16 was raised by the validation team since the common practice analysis in the webhosted PDD was not conducted as per the requirements of the additionality tool. The Project Participant corrected the discussion on common practice in the revised PDD and hence the CAR was closed satisfactorily.

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

3.8 Monitoring plan (124)

The Project activity uses the approved consolidated monitoring methodology ACM 0002 Version 12.2.0. Please refer discussions on the applicability of the methodology at section 3.6.1 above. The steps taken to assess whether the monitoring arrangements described in the monitoring plan are feasible within the project design are described below.

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

1. According to the methodology, there is only one variable that a windmill project needs to monitor, i.e., $EG_{PJ,y}$, the net electricity supplied to the grid by the proposed Project Activity.
2. $EF_{grid,CM,y}$, the emission factor is fixed ex-ante based on CEA database, Version 4. This is in line with the EF tool as required by the methodology.
3. Project participant has provided provision for monitoring these parameters and for electronic as well as hard copy archiving of the monitored data. This is stated in Section B.7.1 of the revised PDD.
4. Project participant has provided for archiving the data for 2 years beyond the crediting period or last issuance whichever is later.
5. The monitoring plan includes requirements for calibration of the energy meters, used for monitoring the project activity variable, $EG_{facility,y}$, annually. The calibration is conducted by the State Electricity Authority, TNEB. In case during the annual calibration, the meter(s) is found to be outside the permissible limits of error, then the meter(s) would be replaced immediately by the TNEB.
6. The monitoring frequency for $EG_{PJ,y}$ matches with that of the applied methodology, viz. continuous measurement and monthly recording. The cross checking will be carried out with sales receipts (invoices/bank statements), which indicates the payment made by the State Electricity



- Utility viz; TNEB to the Project Participant for the net electricity delivered by the Project Activity to the grid.
7. Project participant has included another variable, $EG_{windmill,y}$ in the monitoring plan to provide for an apportioning procedure wherein the dates of the recorded data do not coincide with the dates of the verification period.(Procedure for apportioning)
 8. Under section B.7.2 of the PDD, project participant has provided the detailed metering system, measurement procedure, procedures to deal with data uncertainty, procedure for apportioning of the measured data, organizational structure etc.
 9. The validation team validated the metering system at site as follows viz;
 - a. There is an energy meter connected to the individual Wind Turbine Generator of the proposed project activity of 0.5 % accuracy class.
 - b. Joint Monthly recording (Ref /74/) of the electricity exported and electricity imported by the individual Wind Turbine Generator's is done at the project site by the representatives of the Project Participant and TNEB. The JMR sheet is prepared and signed by all the personnel involved in the meter recording.
 - c. Based on this JMR sheet, the Project Participant prepares the invoice (Ref /75/) and submits it to TNEB for release of payment. The payment is made by TNEB to the Project Participant either in the form of a cheque or online transfer (RTGS transfer).
 - d. The cross checking of the primary data in the JMR sheet will be carried out with sales receipts (invoices/bank statements) (Ref /75/), which indicates the payment made by TNEB to the Project Participant for the net electricity delivered by the Project Activity to the grid. This is in line with the cross-checking requirement specified in the applied methodology viz; ACM 0002, version 12.2.0

The validation team physically verified the metering system installed at the site of the project activity. Monitoring plan was not correctly described in the webhosted PDD and hence CAR 10, CAR 22, CAR 23 and CL 6 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. Hence the CAR 10, 22, 23 & CL 6 were satisfactorily closed.

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



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

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

3.9 Sustainable development (127)

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

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

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

CAR 2 was raised since the description of the sustainable development criteria in the webhosted PDD were not complete / correct. The Project Proponent revised the PDD in response to CAR 2 and the same was closed.

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 04/04/2008 (Ref /39/) at the local office of the Project Participant at Devarkulam village, TamilNadu, India. The method of invitation to the local stakeholders was by a public advertisement in the local newspaper as well as in a national daily viz; The Hindu dated 27/03/2008 (Ref /38/).



The validation team feels that the time provided [08 days] to the local stakeholders for providing comments on the Project Activity is adequate. The same was verified by the validation team during the personal interaction with some of the local stakeholders during the validation site visit.

The list of participants, copy of the newspaper advertisement inviting participation of interested local stakeholders, and minutes of the stakeholder meeting proceedings (Ref /39/) were verified by the validation team. The stakeholders viewed this project as contributing to local environmental benefits and socio-economy. Overall, there was agreement that the project activity was a beneficial project from the local sustainable development.

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

CAR 13 and CL 11 were raised since the webhosted PDD did not transparently describe the local stakeholder process as mandated by the PDD Completeness guideline in Sections E.1 and E.2. The CAR and CL were closed based on the corrections made by the Project Proponent in the revised PDD.

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

3.11 Environmental impacts (133)

As per the Schedule of the EIA notification (Ref /69/), given by the Ministry of Environment and Forests (Government of India) EIA is not a regulatory requirement in India for wind energy projects. Thus the project activity doesn't require EIA. The project activity does not involve any negative environmental impacts, as the Wind Turbine Generator's are installed for generation of power using wind which is a clean source of energy.

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



4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

The PDD using methodology ACM 0002 was webhosted on the UNFCCC for global stakeholder's comments as per CDM requirements. The project was webhosted from 13/08/2009 to 11/09/2009

05 comments were received from 01 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 '13.75 MW Grid connected "Wind Electricity generation Project by Tamilnadu Newsprints and Papers Limited' Project in India. The validation was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

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

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

By synthetic description of the project, the project is likely to result in reductions of GHG emissions partially. An analysis of the investment analysis demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

The review of the final project design documentation (Version 3.0) and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project correctly applies and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria. Bureau Veritas Certification thus requests registration of '13.75



MW Grid connected “Wind Electricity generation Project by Tamilnadu Newsprints and Papers Limited’ as CDM project activity.

6 REFERENCES

Category 1 Documents:

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

- /1/ Webhosted PDD, Version 01 dated 10/08/2009
- /2/ Final Revised PDD, Version 3.0, dated 02/04/2012
- /3/ Host Country Approval for the project activity vide letter no. 4/27/2008-CCC dated 17/06/2009
- /4/ Power Purchase Agreement between Project Participant and TNEB for all the Wind Turbine Generator of the project activity.
- /5/ Contract between the Project Participant and M/s Suzlon Energy Limited for supply and installation of 5 nos Wind Turbine Generator of 1250 kW each (total 6.25 MW of sub-bundle I) vide contract no. PMD/CON/2005600009 dated 17/12/2005
- /6/ Work Order from Project Participant to M/s Suzlon Infrastructure Services Limited for installation and commissioning of 6 nos Wind Turbine Generator of 1250 kW each (total 7.5 MW of sub-bundle II) vide contract no. PMD/CB/WO/2007300066 dated 28/02/2007
- /7/ Work Order from Project Participant to M/s Suzlon Infrastructure Services Limited for civil works of 6 nos Wind Turbine Generator of 1250 kW each (total 7.5 MW of sub-bundle II) vide contract no. PMD/CB/WO/2007300067 dated 28/02/2007
- /8/ Work Order from Project Participant to M/s Suzlon Infrastructure Services Limited for electrical line works of 6 nos Wind Turbine Generator of 1250 kW each (total 7.5 MW of sub-bundle II) vide contract no. PMD/CB/WO/2007300068 dated 28/02/2007
- /9/ Work Order from Project Participant to M/s Suzlon Windfarm Services Limited for comprehensive operations and maintenance services during warranty period for 6 nos Wind Turbine Generator of 1250 kW each (total 7.5 MW of sub-bundle II) vide contract no. PMD/CB/WO/2007300069 dated 28/02/2007
- /10/ Purchase Order from Project Participant to M/s Suzlon Energy Limited for supply of 6 nos Wind Turbine Generator of 1250 kW each (total 7.5 MW of sub-bundle II) vide contract no. PMD/CB/PO/2007600009 dated 28/02/2007
- /11/ Purchase Order from Project Participant to M/s Suzlon Towers and Structures Limited for supply of 6 nos tubular towers (total 7.5 MW of sub-bundle II) vide contract no. PMD/CB/PO/2007600010 dated 28/02/2007
- /12/ Purchase Order from Project Participant to M/s Suzlon Infrastructure Limited for supply of 6 nos transformers (total 7.5 MW of sub-bundle II) vide contract no. PMD/CB/PO/2007600011 dated 28/02/2007
- /13/ Purchase Order from Project Participant to M/s Suzlon Infrastructure Limited for



- supply of electrical items for 6 nos Wind Turbine Generator of 1250 kW each (total 7.5 MW of sub-bundle II) vide contract no. PMD/CB/PO/2007600012 dated 28/02/2007
- /14/ Commissioning certificate for HTSC 1571 (sub-bundle I) vide letter no. Lr No.SE/TIN/AEE/DVT/AE.1/F.WEG.HTSC No.1571/R.799/2006 dated 22/02/2006 indicating the commissioning date as 18/02/2006
 - /15/ Commissioning certificate for HTSC 1570 (sub-bundle I) vide letter no. Lr No.SE/TIN/AEE/DVT/AE.1/F.WEG.HTSC No.1570/R.798/2006 dated 22/02/2006 indicating the commissioning date as 18/02/2006
 - /16/ Commissioning certificate for HTSC 1569 (sub-bundle I) vide letter no. Lr No.SE/TIN/AEE/DVT/AE.1/F.WEG.HTSC No.1569/R.797/2006 dated 22/02/2006 indicating the commissioning date as 18/02/2006
 - /17/ Commissioning certificate for HTSC 1568 (sub-bundle I) vide letter no. Lr No.SE/TIN/AEE/DVT/AE.1/F.WEG.HTSC No.1568/R.800/2006 dated 22/02/2006 indicating the commissioning date as 18/02/2006
 - /18/ Commissioning certificate for HTSC 1567 (sub-bundle I) vide letter no. Lr No.SE/TIN/AEE/DVT/AE.1/F.WEG.HTSC No.1567/R.801/2006 dated 22/02/2006 indicating the commissioning date as 18/02/2006
 - /19/ Commissioning certificate for HTSC 2268 (sub-bundle II) vide letter no. Lr No.SE/TIN/AEE/DVT/AE.2/F.WEG.HTSC No.2268/R.1394/2007 dated 04/04/2007 indicating the commissioning date as 29/03/2007
 - /20/ Commissioning certificate for HTSC 2257 (sub-bundle II) vide letter no. Lr No.SE/TIN/AEE/DVT/AE.2/F.WEG.HTSC No.2257/R.1393/2007 dated 04/04/2007 indicating the commissioning date as 28/03/2007
 - /21/ Commissioning certificate for HTSC 2256 (sub-bundle II) vide letter no. Lr No.SE/TIN/AEE/DVT/AE.2/F.WEG.HTSC No.2256/R.1392/2007 dated 04/04/2007 indicating the commissioning date as 28/03/2007
 - /22/ Commissioning certificate for HTSC 2209 (sub-bundle II) vide letter no. Lr No.SE/TIN/AEE/DVT/AE.2/F.WEG.HTSC No.2209/R.1321/2007 dated 02/04/2007 indicating the commissioning date as 23/03/2007
 - /23/ Commissioning certificate for HTSC 2208 (sub-bundle II) vide letter no. Lr No.SE/TIN/AEE/DVT/AE.2/F.WEG.HTSC No.2208/R.1320/2007 dated 02/04/2007 indicating the commissioning date as 23/03/2007
 - /24/ Commissioning certificate for HTSC 2210 (sub-bundle II) vide letter no. Lr No.SE/TIN/AEE/DVT/AE.2/F.WEG.HTSC No.2210/R.1324/2007 dated 02/04/2007 indicating the commissioning date as 23/03/2007
 - /25/ Extract of the minutes of the 171st Board Meeting dated 22/08/2005 (for sub-bundle I)
 - /26/ Extract of the minutes of the 180th Board Meeting dated 22/11/2006 (for sub-bundle II)
 - /27/ Email sent by the Project Participant to M/s Synergy Global for CDM consultancy services for the proposed project activity dated 09/07/2007
 - /28/ Email response sent by M/s Synergy Global to the Project Participant, with the proposal for CDM consultancy services for the project activity vide email dated 23/07/2007
 - /29/ Approval Note put up to the Managing Director (MD) and Deputy Managing Director (DMD) of the Project Participant vide not no. PMD/23/311A, for



- approval by the Board of Directors, to appoint CDM consultant.
- /30/ Sanction note for release of press advertisement for inviting national bids for pre-qualifying consultants for CDM consultancy work, put up to the Board of Directors for approval, vide note no. PMD/23/306 dated 09/08/2007
 - /31/ Newspaper advertisement in national newspapers like 'The Hindu' and 'The Economic Times' dated 15/08/2007 submitted by the Project Participant inviting applications from CDM consultants for pre-qualification.
 - /32/ Application for CDM consultancy services for the project activity received by the Project Participant from M/s Agri-Energy Consultancy Pvt Limited vide email dated 28/08/2007
 - /33/ Note put up to the Board of Directors of the Project Participant for approval of pre-qualified CDM consultants (as a result of the national bidding system) vide note no. PMD/23/313 dated 28/09/2007
 - /34/ Notice Inviting Tender (NIT) published by the Project Participant to the shortlisted pre-qualified CDM consultants for providing price offer for CDM consultancy work for the project activity vide Tender No. PMD/ENQ/2008300002 dated 03/01/2008.
 - /35/ Minutes of the meeting between the Project Participant and CDM consultant, M/s ITCOT Consultancy Services regarding CDM consultancy services for the project activity dated 28/01/2008
 - /36/ Work Order issued by the Project Participant on CDM consultants viz; M/s ITCOT Consultancy Services vide letter no. TNPL/CDM/WO/2008300105 dated 13/02/2008, for CDM consultancy services for the proposed project activity.
 - /37/ Internal note issued to CGM (F&A) to release advertisement in the local newspapers for inviting local stakeholders for meeting vide note dated 20/03/2008.
 - /38/ Newspaper advertisement in a national English newspaper 'The Hindu' dated 27/03/2008 and local language newspaper dated 27/03/2008 inviting local stakeholders for a meeting on 04/04/2008.
 - /39/ Minutes of the local stakeholder consultation process including the attendance list of the meeting conducted on 04/04/2008.
 - /40/ Offer letter from M/s Suzlon Energy Limited to the Project Participant for Phase I of the project activity vide letter no. SEL/TBS/HAK/2005-06/041 dated 09/07/2005
 - /41/ Excel sheet calculation to deduce the actual PLF achieved of the project activity since commissioning till 30/04/2010
 - /42/ Letter from the financing bank viz; State Bank of Patiala dated 25/02/2011 with reference to the loan sanction for sub-bundle I (6.25 MW capacity) dated 03/10/2005, indicating the power generation to be 26,28,000 kWh per annum from each Wind Turbine Generator of 1250 kW capacity (PLF of 24%)
 - /43/ Letter from the financing bank viz; Syndicate Bank vide letter no. 1621/6002/2010-11/F.103 dated 07/03/2011 with reference to the loan sanction for sub-bundle I (6.25 MW capacity) dated 26/09/2005, indicating the power generation to be 26,28,000 kWh per annum from each Wind Turbine Generator of 1250 kW capacity (PLF of 24%)
 - /44/ TNERC Tariff Order 2006
 - /45/ Wind Power Directory, 2004



- /46/ PDD of earlier registered project activity of Project Participant (CDM Registration No 1053)
- /47/ PPA of the earlier existing wind project of the Project Participant in the same region viz; Tamil Nadu.
- /48/ Offer letter from M/s Suzlon Energy Limited to the Project Participant for sub-bundle II of the project activity vide letter no. SEL/TB/AG/2006-07/203-A dated 12/09/2006
- /49/ Letter from the financing bank viz; BNP Paribas dated 01/03/2010 with reference to the loan sanction for sub-bundle II (7.50 MW capacity) dated 12/02/2007, indicating the power generation to be 26,28,000 kWh per annum from each Wind Turbine Generator of 1250 kW capacity (PLF of 24%)
- /50/ Letter from the financing bank viz; HSBC dated 02/03/2011 with reference to the loan sanction for sub-bundle II (7.50 MW capacity) dated 27/02/2007, indicating the power generation to be 26,28,000 kWh per annum from each Wind Turbine Generator of 1250 kW capacity (PLF of 24%)
- /51/ RBI website <http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/65424.pdf> (for sub-bundle I)
- /52/ RBI website <http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/74054.pdf> (for sub-bundle II)
- /53/ Contract for Comprehensive Operation and Management services of 6.25 MW (sub-bundle I) signed between Project Participant and M/s Suzlon Infrastructure Services Limited vide contract no. TOS:RC:20103000026:1753 dated 19/01/2010
- /54/ Contract for Comprehensive Maintenance services of 6.25 MW (sub-bundle I) signed between Project Participant and M/s Suzlon Infrastructure Services Limited vide contract no. TOS:RC:20103000027:1753 dated 19/01/2010
- /55/ Contract for Comprehensive Operation and Management services of 7.50 MW (sub-bundle II) signed between Project Participant and M/s Suzlon Infrastructure Services Limited vide contract no. TOS:RC:20103000144:1888 dated 03/07/2010
- /56/ Contract for Comprehensive Maintenance services of 7.50 MW (sub-bundle II) signed between Project Participant and M/s Suzlon Infrastructure Services Limited vide contract no. TOS:RC:20103000194:1753 dated 23/09/2010
- /57/ Commissioning certificate of the earlier existing Phase 3 wind power project of the Project Participant.

Category 2 Documents:

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

- /58/ PDD completion guidance - Guidelines for completing the simplified project design document (CDM-PDD) and the proposed new baseline and monitoring methodology (CDM-NM), version 07, Annex 12 of EB 41
- /59/ PDD Form, CDM-PDD, Version 03
- /60/ ACM 0002, Version 12.2.0 - Consolidated baseline methodology for grid-connected electricity generation from renewable sources, EB 58
- /61/ Emission Factor tool - Tool to calculate the emission factor for an electricity



- system, version 02.2.0, Annex 12, EB 61
- /62/ Validation and Verification Manual, version 1.2, EB 55; [VVM]
- /63/ CEA baseline database, version 04 dated September 2008
[<http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm>]
- /64/ Guidance on the Assessment of Investment Analysis, Version 05, Annex 5, EB 62
- /65/ Guidelines on the Demonstration and Assessment of Prior Consideration of the CDM, Version 04, Annex 13, EB 62
- /66/ Tool for the demonstration and assessment of additionality, version 06.0.0, EB 65, Annex 21.
- /67/ Guidelines for the reporting and validation of PLF's, EB 48 Annex 11
- /68/ Income Tax Act, Government of India
[<http://law.incometaxindia.gov.in/TaxmannDit/DisplayPage/dpage1.aspx>]
- /69/ EIA notification, S.O. 1533 dated 14th September, 2006
- /70/ CER Excel Sheet
- /71/ IRR Excel sheet
- /72/ IRR Certificate by the financial expert
- /73/ Sample copies of meter calibration certificates
- /74/ Sample copies of the 'Monthly JMR Statement' issued by the TNEB to the project participant for the monthly recording of electricity supplied to the grid
- /75/ Sample copy of the invoices raised by the Project participant on TNEB and the sales receipt (bank statement)
- /76/ Wind Power Directory 2007, CDM Pipeline & CDM website – For Common Practice Analysis

Persons interviewed:

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

- /1/ Dr S Chinnaraj, Senior Manager, R&D, TNPL
- /2/ Mr T Vijaykumar, Manager, R&D, TNPL
- /3/ Mr A Velliangiri, Deputy Managing Director, TNPL
- /4/ Mr M Asirvetham, Retired Head Master, Devarkulam (Local Stakeholder)
- /5/ Mr S Selvaraj, Retd. English Professor, Devarkulam (Local Stakeholder)
- /6/ Ms S Stella Samuel, Pastor, Devarkulam (Local Stakeholder)
- /7/ Ms A S Indra Neela, Teacher, TDTA School, Devarkulam (Local Stakeholder)
- /8/ Ms T Uma, Teacher, TDTA School, Devarkulam (Local Stakeholder)
- /9/ Mr H S Rajkumar Paulraj, HeadMaster, TDTA Middle School, Devarkulam (Local Stakeholder)



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

R S Prem Kumar: (Team Leader)

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

Srinivasan Selvaraj (Team Member)

Has a Bachelors of Technology degree in Chemical Engineering and Master of Engineering degree in Environmental Management and has successfully completed the IRCA approved Lead Auditor training course for Environmental Management System. He has over 6 years of experience in the field of Environment and Energy services including detailed design engineering and preparation of Detailed Project Reports, environmental assessment reports, Environmental management plans for urban as well as industrial projects. He has been in the CDM validation and verification since June 2008 and he is with Bureau Veritas Certification (India) Pvt. Ltd. as Verifier -Climate change since March 2010. He has undergone training related to Clean Development Mechanism and is currently involved in validation and verification of CDM project activities.

T Ramesh (Team Member)

Has a Bachelors of Technology degree in Mechanical Engineering and Master of Technology degree in Energy Conservation and Management. He has an overall work experience of 10 years of which the last 3 years have been in the CDM field. His earlier stint has been in the CDM consulting field wherein he was exposed to a variety of projects.

Sushil Budhia Associates (Financial Expert)

Services from Sushil Budhia Associates were delivered by Mr. Sushil Budhia and Ms. Usha Gopalan who are both Chartered Accountants. Mr. Sushil Budhia has been practicing as Chartered Accountant for 25 years and he has very wide experience on project finance, taxation and financial auditing. Ms Usha Gopalan has over 15 years of experience in Project finance, taxation and auditing. Mr. Sushil Budhia and Ms. Usha Gopalan have undergone training on Clean Development Mechanism They have conducted verification of financial indicators like IRR for more than 70 CDM projects.

Karthikeyan and Jayaram Associates (Financial Expert)

Services from Jayaram & Karthikeyan Associates was delivered by Mr. Jayaram, who is a Chartered Accountant, for the validation of the benchmark calculations. He possesses



in depth understanding and experience in Assurance services relating to financial appraisals & analyses, those specially related to CDM projects. He is empanelled with other DOE's for scrutinizing the financial additionality aspects of the CDM projects handled by them and expressing opinions on the financials of the project participant. Has appraised over 50 CDM projects for financial additionality on behalf of CDM validators of repute.

Sanjay S Patankar, Internal Technical Reviewer**Bureau Veritas Certification**

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

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

APPENDIX A - VALIDATION PROTOCOL

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

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
1. Approval			<i>COUNTRY A (insert the country name)</i>	<i>COUNTRY B (insert the country name)</i>		
a. Have all Parties involved approved the project activity?	VVM	44	Yes, there is only one party involved in the project activity viz; India. The Host Country Approval dated 17/06/2009 for the project activity is provided.	--	OK	OK
b. Has the DNA of each Party indicated as being involved in the proposed CDM project activity in section A.3 of the PDD provided a written letter of approval? (If yes, provide the reference of the letter of approval, any supporting documentation, and specify if the letter was received from the project participant or directly from the DNA)	VVM	45	Yes, the DNA of India has provided a written letter of approval vide No. 4/27/2008-CCC dated 17/06/2009. The approval letter was received from the project participant.	--	OK	OK
c. Does the letter of approval from DNA of each	VVM	45				


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CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
Party involved:						
i. confirm that the Party is a Party of the Kyoto Protocol?	VVM	45.a	Yes	--	OK	OK
ii. confirm that participation is voluntary?	VVM	45.b	Yes	--	OK	OK
iii. confirm that, in the case of the host Party, the proposed CDM project activity contributes to the sustainable development of the country?	VVM	45.c	Yes	--	OK	OK
iv. Refers to the precise proposed CDM project activity title in the PDD being submitted for registration?	VVM	45.d	Yes, the title of the project activity as indicated in the webhosted PDD is the same as described in the HCA.	--	OK	OK
d. Is(are) the letter(s) of approval unconditional with respect to (i) to (iv) above?	VVM	46	Yes	--	OK	OK
e. Has(ve) the letter(s) of approval been issued by the respective Party's designated national authority (DNA) and is valid for the CDM project activity under validation?	VVM	47	Yes, the HCA has been issued by the Indian DNA	--	OK	OK
f. Is there doubt with respect to the authenticity of the letter of approval?	VVM	48	No, there is no doubt with respect to authenticity of the HCA as the validation team verified the original copy of the HCA.	--	OK	OK
g. If yes, was verified with the DNA that the letter of approval is authentic?	VVM	48	Not applicable	--	OK	OK


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CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
2. Participation			<i>PP1 (insert PP1 name)</i>	<i>PP2 (insert PP2 name)</i>		
a. Have all project participants been listed in a consistent manner in the project documentation?	VVM	51	Yes	--	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	Yes, the participation of the project participant has been approved by Indian DNA, which is approved under Kyoto Protocol	--	OK	OK
c. Are the project participants listed in tabular form in section A.3 of the PDD?	VVM	52	Yes	--	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	--	OK	OK
e. Has the participation of each of the project participants been approved by at least one Party involved, either in a letter of approval or in a separate letter specifically to approve participation? (Provide reference of the approval document for each of the project participants)	VVM	52	Yes	--	OK	OK
f. Are any entities other than those approved as project participants included in these sections of the PDD?	VVM	52	No		OK	OK
g. Has the approval of participation issued from the relevant DNA?	VVM	53	Yes, the approval of participation (HCA) has been issued by the Indian DNA	--	OK	OK



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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
h. Is there doubt with respect to (g) above?	VVM	53	No	OK	OK
i. If yes, was verified with the DNA that the approval of participation is valid for the proposed CDM project participant?	VVM	53	Not applicable	OK	OK
3. Project design document					
a. Is the PDD used as a basis for validation prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website?	VVM	55	Yes, the latest template of the PDD for large scale projects, available on the UNFCCC website has been used in the project activity	OK	OK
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	OK	OK
c. In CDM-PDD section A.1 are the following provided?	EB 41	Ann 12			
i. Title of project	EB 41	Ann 12	Yes, the title of the project activity is 13.75 MW Grid connected "Wind Electricity generation Project by Tamilnadu Newsprints and Papers Limited"	OK	OK
ii. Current version number and date of document	EB 41	Ann 12	Yes, Version is 01, dated 10/08/2009	OK	OK
d. In CDM-PDD section A.2 are following provided (max. one page)?	EB 41	Ann 12			
i. A brief description of the project activity covering purpose which includes the scenario existing prior to the start of project, present scenario and baseline scenario	EB 41	Ann 12	The Project Participant has the following investments in renewable energy viz ; • Wind energy project of about 15 MW set up in the year 1992 at Devarkulam and Perungadi (without CDM) • A biogas project under CDM (Registration No 0124),	CAR 1	OK


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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			- Another wind mill project of 6.75 MW also under CDM (Registration No 1053) at Devarkulam apart from this Project Activity. - However the PDD, under Section A.2, doesn't indicate this prior experience of the Project Participant in renewable energy projects. - Further, in the light of the above points, Project Participant to explain why the Project Activity is not considered as capacity addition as defined in ACM 0002, Version 10.		
ii. Explanation on how the GHG emission reductions are effected	EB 41	Ann 12	Yes	OK	OK
iii. The PP's vies on the contribution of project activity to sustainable development	EB 41	Ann 12	- Section A.2 of the PDD, under social well being - Please support the statement of employment for local populace with evidences. - It is indicated that Project Activity would bring about additional investment of INR 694.21 million. Provide supporting evidence for the same. - Technological well being is not discussed as per the requirement of the Indian DNA.	CAR 2	OK
iv. Are there any changes/modifications compared to the webhosted PDD?	EB 41	Ann 12	Yes, changes are envisaged in the PDD as compared to the webhosted PDD, in response to the CAR/CL raised above.	--	OK
e. In CDM-PDD section A.3 are following provided	EB	Ann			



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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
in the tabular format?	41	12			
i. List of project participants and parties	EB 41	Ann 12	Yes	OK	OK
ii. Identification of Host Party			Yes, India is identified as the host party	OK	OK
iii. Indication whether the Party wishes to be considered as project participant	EB 41	Ann 12	No, the party involved does not wish to be considered as the project participant.	OK	OK
f. In CDM-PDD section A.4.1 are following provided?	EB 41	Ann 12			
i. Technical description, location, host party(ies) and address as required	EB 41	Ann 12	Yes	OK	OK
ii. Detailed physical location with unique identification of the project activity (eg. Longitude/latitude) – not to exceed one page	EB 41	Ann 12	1. The description in Section A.4.1.4 exceeds one page. 2. Provide evidence for the lat-long of the individual WEG's and the SF numbers indicated in the table	CAR 3	OK
iii. Are there any changes/modifications compared to the webhosted PDD?	EB 41	Ann 12	Yes, changes are envisaged in the PDD as compared to the webhosted PDD, in response to the CAR/CL raised above.	--	OK
g. In CDM-PDD section A.4.2 is the list of categories of project activities provided?	EB 41	Ann 12	Yes	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	Yes	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	Explanation of purpose of the project activity is stated in Section A.2 of the PDD. Also the scenario existing prior to the start of the project activity and the baseline scenario is also	OK	OK


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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			explained.		
iii. List and arrangement of the main manufacturing/production technologies, systems and equipments involved	EB 41	Ann 12	Not applicable	OK	OK
iv. The emissions sources and GHGs involved	EB 41	Ann 12	Yes	OK	OK
v. Are there any changes/modifications compared to the webhosted PDD?	EB 41	Ann 12	No	OK	OK
i. In CDM-PDD section A.4.4 is the estimation of emission reductions provided as requested in a tabular format?	EB 41	Ann 12	Internationally accepted standard format for values where 1,000 represents one thousand is not used to indicate CER's under Section A.4.4 of the PDD.	CAR 4	OK
j. In CDM-PDD section A.4.5 is Information regarding Public funding provided?	EB 41	Ann 12	Yes, it is stated that there is no public funding for the project activity. Project participant to provide an undertaking on the company letterhead stating the same	CL 1	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	The approved methodology and the methodological tools used are referred under Section B.1 of the PDD. However, version of the applied methodology and the Tool to calculate the emission factor is no longer valid.	CAR 5	OK
ii. Any methodologies or tools which the above approved methodology draws upon and their version number	EB 41	Ann 12	Yes. Please refer above CAR	--	OK
l. In CDM-PDD section B.2 are following provided?	EB 41	Ann 12			


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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. Justification of the choice of methodology that the project activity meets each of the applicability conditions	EB 41	Ann 12	The Project Participant has other existing wind power projects in the region. Hence in light of this, Project Participant to justify as to why the proposed project activity should not be considered as a capacity addition, in line with the requirements of the methodology.	CAR 6	OK
ii. Documentations with references that had been used. This can be provided in Annex 3 instead	EB 41	Ann 12	Not applicable	OK	OK
m. In CDM-PDD section B.3 are following provided?	EB 41	Ann 12			
i. Description of all sources and gases included in the project boundary in the table	EB 41	Ann 12	1. The spatial extent of the project boundary, as indicated in Section B.3, indicates a system boundary as well as a project boundary. Please clarify. 2. Also there is a reference to five regional grids in India, which is incorrect as per the latest CEA guideline.	CL 2	OK
ii. A flow diagram of the project boundary physically delineating the project activity	EB 41	Ann 12	Yes, a flow diagram of the project boundary is provided.	OK	OK
iii. The flow diagram with all equipments, systems and flows of mass and energy etc	EB 41	Ann 12	Not applicable	OK	OK
n. In CDM-PDD section B.4 are following provided?	EB 41	Ann 12			
i. Explanation how the most plausible baseline scenario is identified in accordance with the selected baseline methodology	EB 41	Ann 12	The description of the plausible baseline scenario is described considering the project activity is a green-field project. However Project Participant to justify as to why the proposed project activity is not considered as a capacity addition and hence the description of the	--	OK


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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			baseline scenario is not in line with that described for capacity addition. Refer CAR 1 above		
ii. Justification of key assumptions and rationales	EB 41	Ann 12	To be verified after response to above query.	--	OK
iii. Transparent illustration of all data used to determine the baseline scenario (variables, parameters, data sources, etc.)	EB 41	Ann 12	Not applicable	OK	OK
iv. A transparent and detailed description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed project activity	EB 41	Ann 12	Refer CAR 1 above	--	OK
v. Are there any changes/modifications compared to the webhosted PDD?	EB 41	Ann 12	Yes, changes are envisaged in the PDD as compared to the webhosted PDD, in response to the CAR/CL raised above.	--	OK
o. In CDM-PDD section B.5 are following provided?	EB 41	Ann 12			
i. Explanation of how and why this project activity is additional and therefore not the baseline scenario in accordance with the selected baseline methodology	EB 41	Ann 12	Yes, an explanation of how and why the proposed project activity is additional is described in Section B.5 of the PDD	OK	OK
ii. Justification of key assumptions and rationales	EB 41	Ann 12	Yes	OK	OK
iii. Transparent illustration of all data used to determine the baseline scenario (variables, parameters, data sources etc)	EB 41	Ann 12	Yes	OK	OK



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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
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	Project Participant to provide the copies of all supporting evidences for the Board decision and the chronology of events.	CL 3	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	The use of the algorithm for project emissions is incorrectly stated in Section B.6.1, as required by the methodology.	CAR 7	OK
ii. Equations used in calculating emission reductions	EB 41	Ann 12	The equations used in calculating emission reductions may change, in light of the clarification requested for capacity addition.	--	OK
iii. Explanation and justification for all relevant methodological choices, including different scenarios or cases, options and default values	EB 41	Ann 12	Yes	OK	OK
q. In CDM-PDD section B.6.2 are following provided?	EB 41	Ann 12			
i. A compilation of information on the data and parameters that are not monitored throughout the crediting period but that are determined only once and thus remains fixed throughout the crediting period AND that are available when validation is undertaken	EB 41	Ann 12	1. Under Section B.6.2, the parameters of operating margin and build margin are not discussed. 2. Further it is not stated whether the values are monitored ex-post or ex-ante	CAR 8	OK
ii. The actual value period	EB 41	Ann 12	The value of the combined margin seems to be incorrect. Kindly re-verify.	CL 4	OK
iii. Explanation and justification for the choice of	EB	Ann	Yes, the justification for the choice of data	OK	OK



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the source of data	41	12	selected for emission factor is from the CEA database, which is the official source in India		
iv. Clear and transparent references or additional documentation in Annex 3	EB 41	Ann 12	No, additional information is not provided in Annex 3	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	No, the values have been taken from the CEA database, which is from an official source in India	OK	OK
r. In CDM-PDD section B.6.3 are following provided?	EB 41	Ann 12			
i. A transparent <i>ex ante</i> calculation of project emissions, baseline emissions (or, where applicable, direct calculation of emission reductions) and leakage emissions expected during the crediting period, applying all relevant equations provided in the approved methodology	EB 41	Ann 12	No, a transparent ex-ante calculation of project and baseline emissions is not provided. Also the emission reductions are not explained clearly	CAR 9	OK
ii. Documentation how each equation is applied, in a manner that enables the reader to reproduce the calculation	EB 41	Ann 12	No. Please refer above CAR	--	OK
iii. Additional background information and or data in Annex 3, including relevant electronic files (i.e. spreadsheets)	EB 41	Ann 12	No	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	EB 41	Ann 12	Yes, however the description of the years have to be revised	CL 5	OK


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format?					
t. In CDM-PDD section B.7.1 are following provided?	EB 41	Ann 12			
i. Specific information on how the data and parameters that need to be monitored would actually be collected during monitoring for the project activity	EB 41	Ann 12	Yes	OK	OK
ii. For each parameter the following below information, using the table provided:	EB 41	Ann 12			
a. The source(s) of data that will be actually used for the proposed project activity (e.g. which exact national statistics). Where several sources may be used, explain and justify which data sources should be preferred.	EB 41	Ann 12	Yes	OK	OK
b. Where data or parameters are supposed to be measured, specify the measurement methods and procedures, including a specification which accepted industry standards or national or international standards will be applied, which measurement equipment is used, how the measurement is undertaken, which 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	EB 41	Ann 12	The description of the measurement methods is not transparent in the webhosted PDD, in Section B.7.1. E.g The metering system, accuracy class of the meters, location of the meters etc are not clearly spelt out	CAR 10	OK


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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	No, procedures related to dealing with data uncertainties, procedures for apportioning etc are not described in Section B.7.2 of the PDD	CAR 11	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 is not provided in a flow chart form. Please provide the same	CL 6	OK
iii. The responsibilities for and institutional arrangements for data collection and archiving	EB 41	Ann 12	Yes	OK	OK
iv. Indication that the monitoring plan reflect good monitoring practice appropriate to the type of project activity	EB 41	Ann 12	No, the CAR/CL raised above indicates that the monitoring plan does not reflect good monitoring practices	--	OK
v. Relevant further background information in Annex 4	EB 41	Ann 12	No further information is provided in Annex 4	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	Yes	OK	OK
ii. Contact information of the person(s)/entity(ies) responsible for the application of the baseline and monitoring methodology to the project activity	EB 41	Ann 12	Yes, however project participant to clarify whether the person / entity indicated as the responsible entity is still valid	CL 7	OK



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iii. Indication if the person/entity is also a project participant listed in Annex 1	EB 41	Ann 12	Yes, it is indicated that the entity is not a project participant.	OK	OK
w. In CDM-PDD section C.1.1 are following provided?	EB 41	Ann 12			
i. The starting date of a CDM project activity, which is the earliest of the date(s) on which the implementation or construction or real action of a project activity begins/has begun (EB33, Para 76/CDM Glossary of terms/EB41, Para 67)	EB 41	Ann 12	Yes, the starting date of the project activity is stated as 17/12/2005. Project participant to provide the copies of the P.O placed for the project activity.	CL 8	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	It is not clear how this start date has been determined.	CL 9	OK
iii. If this starting date is earlier than the date of publication of the CDM-PDD for global stakeholder consultation by a DOE, description in Section B.5 contain a of how the benefits of the CDM were seriously considered prior to the starting date (EB41, Para 68).	EB 41	Ann 12	Yes	OK	OK
x. In CDM-PDD section C.1.2 is the expected operational lifetime of the project activity in years and months provided?	EB 41	Ann 12	Yes	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	No, it is not stated whether the project activity will use a renewable or fixed crediting period.	CAR 12	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	EB 41	Ann 12	Not applicable	OK	OK


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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?					
aa. In CDM-PDD section C.2.1.1 are dates in the following format: (DD/MM/YYYY) provided?	EB 41	Ann 12	Not applicable	OK	OK
bb. In CDM-PDD section C.2.1.2 is the length of the first crediting period in years and months provided?	EB 41	Ann 12	Not applicable	OK	OK
cc. In CDM-PDD section C.2.2 is the fixed crediting period at most ten (10) years provided?	EB 41	Ann 12	Yes	OK	OK
dd. In CDM-PDD section C.2.2.1 are the dates provided in the following format: (DD/MM/YYYY)?	EB 41	Ann 12	Yes	OK	OK
ee. In CDM-PDD section C.2.2.2 is the length of the crediting period in years and months Provided?	EB 41	Ann 12	Yes	OK	OK
ff. In CDM-PDD section D.2 are the conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the Host Party, if environmental impacts are considered significant by the project participants or the Host, provided?	EB 41	Ann 12	Yes, however the reference to the notification as per the Ministry of Environment and Forests is not indicated in the PDD, under Section D.1	CL 10	OK
gg. In CDM-PDD section E.1 are the following provided?	EB 41	Ann 12			
i. The process by which comments by local stakeholders have been invited and compiled. An invitation for comments by local stakeholders shall be made in an open and transparent manner, in a way that facilities	EB 41	Ann 12	The local stakeholder consultation meeting is indicated to be conducted at Devarkulam village. However the project activity is also located at another village. Project participant to clarify as to	CL 11	OK


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comments to be received from local stakeholders and allows for a reasonable time for comments to be submitted.			how the stakeholder at the other village viz Alagiapandiyapuram, was conducted.		
ii. The project activity is described in a manner, which allows the local stakeholders to understand the project activity, taking into account confidentiality provisions of the CDM modalities and procedures.	EB 41	Ann 12	Yes	OK	OK
iii. The local stakeholder process has been completed before submitting the proposed project activity to the DOE for validation.	EB 41	Ann 12	To be verified based on Project Participant response to CL 11 above.	--	OK
hh. In CDM-PDD section E.2 are following provided?	EB 41	Ann 12			
i. Identification of local stakeholders that have made comments	EB 41	Ann 12	No, the identification of the local stakeholders are provided in Section E.1 instead of E.2 in the webhosted PDD	CAR 13	OK
ii. A summary of this comments.	EB 41	Ann 12	Refer above CAR	--	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	There were no negative commnets received from any of the stakeholders.	OK	OK
jj. In CDM-PDD Annex 1 are the following provided?	EB 41	Ann 12			
i. Contact information of project participants	EB 41	Ann 12	Yes	OK	OK
ii. For each organisation listed in section A.3 the following mandatory fields: Organization, Name of contact person, Street, City, Postfix/ZIP, Country, Telephone and Fax or e-mail	EB 41	Ann 12	The email id indicated in Annex 1 of the PDD is erroneous.	CL 12	OK


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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	Yes	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	Yes	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	There is no information provided in Annex 4. There is an incorrect description of Annex 5 provided in the PDD. The same needs to be corrected as "Appendix"	CL 13	OK
4. Project description					
a. Does the PDD contain a clear description of the project activity that provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation?	VVM	58	Yes. 1. However the registration number of the CDM project activity that is registered is not provided in Section A.2 of the webhosted PDD. 2. Further it is not clear as to how many numbers of wind turbines are located in each of the 2 villages and the total capacity at each village.	CL 14	OK
b. Is the description of the proposed CDM project activity as contained in the PDD:	VVM	59			
i. sufficiently covering all relevant elements?	VVM	59	Yes, however the prior experience of the Project	--	OK


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			Participant in renewable energy projects are not explained in the PDD, under Section A.2		
ii. accurate?	VVM	59	Yes	OK	OK
iii. providing the reader with a clear understanding of the nature of the proposed CDM project activity?	VVM	59	Yes	OK	OK
iv. Are there any changes/modifications compared to the webhosted PDD?	VVM	59	Yes, changes are envisaged in the PDD as compared to the webhosted PDD, in response to the CAR/CL raised.	--	OK
c. Is the proposed CDM project activity in existing facilities or utilizing existing equipments?	VVM	60	The project activity is not in existing facilities or utilizing existing equipments	OK	OK
d. Is the CDM project activity one of the following types:	VVM	60			
i. Large scale?	VVM	60	The project activity is a 13.75 MW wind power project however since there is another wind power project of the same project participant registered with the CDM EB within 1 km distance of the proposed CDM project activity, the project participant has used the large scale methodology, ACM 0002.	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	VVM	60	Yes, a site visit was conducted from 23 to 26/09/2009 to confirm the description of the project activity as described in the PDD.	OK	OK


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specified 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	No	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 approved by the CDM EB	OK	OK
b. Is the selected methodology applicable to the project activity?	VVM	66	Refer to (5.b.a) below	-	OK



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c. Had the PP correctly applied the selected methodology?	VVM	66	Refer to (5.b.d) below	-	OK
d. Had the selected methodology been correctly applied with respect to project boundary?	VVM	67	Refer to (5.c) below	-	OK
e. Had the selected methodology been correctly applied with respect to baseline identification?	VVM	67	Refer to (5.d) below	-	OK
f. Had the selected methodology been correctly applied with respect to Algorithms and/or formulae used to determine emission reductions?	VVM	67	Refer to (5.e) below	-	OK
g. Had the selected methodology been correctly applied with respect to additionality?	VVM	67	Yes	OK	OK
i. Has the additionality of the project activity been demonstrated and assessed using the latest version of the "Tool for the demonstration and assessment of additionality" agreed by the Board, which is available on the UNFCCC website?	ACM	0002 v.12.1	Yes, the additionality of the project activity has been demonstrated using Version 05.2 of the Additioanlity Tool	OK	OK
h. Had the selected methodology been correctly applied with respect to monitoring methodology?	VVM	67	Refer to (7.g), (7.h), (7.i), (7.j) and (7.k) below		OK
<i>b. Applicability of the selected methodology to the project activity</i>					
a. Is the selected baseline and monitoring methodology, previously approved by the CDM Executive Board, applicable to the project activity? Is the used version valid?	VVM	68	Yes, the selected methodology, ACM 0002 is previously approved by the CDM EB. However the version of the methodology used is no longer valid. Please refer CAR 5 above	--	OK
i. This methodology is applicable to grid-connected renewable power generation project activities that (a) install a new power plant at a	ACM	0002 v.12.1	The webhosted PDD describes the project activity as a Greenfield project.		OK


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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).			However it was observed that the Project Participant has other installations in wind / other renewable power in other regions of the country. In light of the same, Project Participant to clarify as to why the proposed project activity should not be considered as a capacity addition to the existing wind power projects.	CL 15	
b. Has the DOE applied specific guidance provided by the CDM Executive Board in respect to the applicable approved methodology?	VVM	69	No	OK	OK
c. Is the methodology correctly quoted?	VVM	70	Yes, however the version number indicated is no longer valid	--	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 power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit	ACM	0002 v.12.1	The justification for the Project Activity as indicated in Section B.2 of the PDD doesn't indicate the case of capacity addition. All the evidences submitted to the validation team like DPR, note to the Board etc indicate the Project Activity to be an expansion of wind farm.	CL16	OK
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	ACM	0002 v.12.1	Please refer CL 16 above	--	OK



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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.					
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 and the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m ² .	ACM	0002 v.12.1	The project activity is a 13.75 MW wind power project in the State of Tamil Nadu, India. Hence this applicability condition is not applicable to the project activity.	OK	OK
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	ACM	0002 v.12.1	The project activity is a 13.75 MW wind power project in the State of Tamil Nadu, India. Hence this applicability condition is not applicable to the project activity	OK	OK


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reservoirs or in the increase in existing reservoirs where the power density of the power plant is less than 4 W/m ² .					
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	The project activity is a 13.75 MW wind power project in the State of Tamil Nadu, India. Hence this applicability condition is not applicable to the project activity	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	OK	OK
g. Have the project participants shown that the project activity meets each of the applicability conditions or the approved methodology?	VVM	71	Refer to (5.b.d) above	-	OK
h. Have the project participants shown that the project activity meets each of the applicability conditions of any tool or other methodology component referred to the methodology?	VVM	71	No, justification of the applicability conditions of the tools referred are not provided	CL 17	OK
i. Are each of the applicability conditions of the "Tool to calculate the emission factor for an electricity system" met?	EB 50	Ann 40	Please refer above CL	--	OK
ii. Are each of the applicability conditions of the "Tool for the demonstration and assessment	EB 39	Ann 10	Please refer above CL	--	OK


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of additionality" met?					
iii. Are each of the applicability conditions of the "Combined tool to identify the baseline scenario and demonstrate additionality" met?	EB 28	Ann 14	Not applicable, as the project activity does not involve replacement or retrofit	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	No	OK	OK
j. If yes, was the PDD cross checked against the other sources to confirm that the project activity meets the applicability conditions of the methodology? (provide the reference to these choices)	VVM	71	Not applicable	OK	OK
k. Can a determination regarding the applicability of the selected methodology to the proposed CDM project activity be made?	VVM	72	Yes	OK	OK
l. If no, clarification of the methodology was requested, in accordance with the guidance provided by the CDM Executive Board?	VVM	72	Not applicable	OK	OK
m. If answer to (5.b.d) above is "no", revision or deviation from the methodology was requested, in accordance with the guidance provided by the CDM Executive Board?	VVM	73	Not applicable	OK	OK
n. If yes to (5.b.l) and (5.b.m) above, a request for registration was submitted before the CDM Executive Board has approved the proposed	VVM	74	Not applicable	OK	OK



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deviation or revision?					
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	Yes, however it is not clear on the distinction between the system boundary and the project boundary.	OK	OK
i. Does the extent of the project boundary, as described in the PDD, includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to?	ACM	0002 v12.1	Yes	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 v12.1	Yes	OK	OK
b. Is the delineation in the PDD of the project boundary correct and include identification of all locations, processes and equipment including secondary equipment and associated processes such as logistics etc.?	VVM	79	Yes	OK	OK
c. Does the delineation in the PDD of the project boundary meet the requirements of the selected baseline?	VVM	79	Yes	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	Yes, there would be a minor change in the project boundary based on the CL raised	--	OK



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e. Have all sources and GHGs required by the methodology been included within the project boundary?	VVM	79	Yes	OK	OK
f. Does the methodology allow project participant to choose whether a source or gas is to be included within the project boundary	VVM	79	No	OK	OK
g. If yes, have the project participants justified that choice?	VVM	79	Not applicable	OK	OK
h. If yes, is the justification provided reasonable? (provide reference to the supporting documented evidence provided by the project participants)	VVM	79	Not applicable	OK	OK
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	Yes, however the description of the baseline to be further reviewed after the Project Participant response on capacity addition, because the baseline scenario description would change for capacity addition projects	--	OK
b. Has any procedure contained in the methodology to identify the most reasonable baseline scenario, been correctly applied?	VVM	82	Please refer above comment	--	OK
i. If the project activity is the install a new grid-connected renewable power plant/unit (greenfield plant), is the baseline scenario identified appropriately in accordance with the ACM0002 ver.12.1?	ACM	0002 v12.1	The webhosted PDD indicates the project activity to be Greenfield project, however the project participant is required to clarify as to why the project activity is not considered as a capacity expansion. Refer CL 15 above	--	OK
ii. If the project activity is a capacity addition to	ACM	0002	Project participant is required to clarify as to why	--	OK



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existing grid-connected renewable power plant/unit, is the baseline scenario identified appropriately in accordance with the ACM0002 ver. 12.1? And is the point of time at which the generation facility would likely be replaced or retrofitted (DATE Baseline Retrofit) reasonably defined?		v12.1	the proposed project activity is not classified as a capacity addition. Refer CL 15 above		
iii. If the project activity is the retrofit or replacement of existing grid-connected renewable power plant/unit, is the baseline scenario identified following the step-wise procedure in accordance with the ACM0002 ver.12.1?	ACM	0002 v12.1	No, the project activity is not a retrofit or replacement of existing renewable power plant.	OK	OK
iv. Are the realistic and credible alternative baseline scenarios for power generation appropriately identified following the Step 1 of the "Combined tool to identify the baseline scenario and demonstrate additionality"? (Step 1)	ACM	0002 v12.1	Not applicable, as the project activity is not a retrofit or replacement of existing renewable power plant	OK	OK
v. Are the realistic and credible alternative baseline scenarios i.e. P1, P2 and P3 appropriately applied Barrier analysis following the Step 2 of the "Combined tool to identify the baseline scenario and demonstrate additionality"? (Step 2)	ACM	0002 v12.1	Not applicable, as the project activity is not a retrofit or replacement of existing renewable power plant	OK	OK
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	ACM	0002 v12.1	Not applicable, as the project activity is not a retrofit or replacement of existing renewable power plant	OK	OK



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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)					
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	The selected methodology prescribes a pre-defined baseline scenario for the project activity	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	Not applicable	OK	OK
e. Does the methodology require several alternative scenarios to be considered in the identification of the most reasonable baseline scenario?	VVM	83	No, as the selected methodology itself prescribes a pre-defined baseline scenario for the project activity	OK	OK
f. If yes, are all scenarios that are considered by the project participants and are supplementary to those required by the methodology reasonable in the context of the proposed CDM project activity?	VVM	83	Not applicable	OK	OK
g. Has any reasonable alternative scenario been excluded?	VVM	83	The selected methodology itself prescribes a pre-defined baseline scenario for the project activity	OK	OK
h. Is the baseline scenario identified reasonably supported by:	VVM	84			
i. Assumptions?	VVM	84	Not applicable	OK	OK
ii. Calculations?	VVM	84	Not applicable	OK	OK
iii. Rationales?	VVM	84	Not applicable	OK	OK


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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. Are the documents and sources referred to in the PDD correctly quoted and interpreted?	VVM	84	Yes	OK	OK
j. Was the information provided in the PDD cross checked with other verifiable and credible sources, such as local expert opinion, if available? (identify the sources)	VVM	84	No	OK	OK
k. Have all applicable CDM requirements been taken into account in the identification of the baseline scenario for the proposed CDM project activity?	VVM	85	Yes, as the applied methodology itself prescribes a pre-defined baseline scenario, no further analysis is required.	OK	OK
l. Have all relevant policies and circumstances been identified and correctly considered in the PDD, in accordance with the guidance by the CDM Executive Board?	VVM	85	No, relevant policies and circumstances have not been correctly identified in the PDD.	CAR 14	OK
m. Does the PDD provide a verifiable description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed CDM project activity?	VVM	86	Yes, the PDD, under Section B.4 describes the baseline scenario by considering the project activity as a Greenfield project. However project participant is required to clarify as to why the project activity is not considered as a capacity addition. Refer CL 15 above.	--	OK
e. Algorithms and/or formulae used to 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	Yes, the equations used to calculate the baseline emissions comply with the requirements of the applied methodology, ACM 0002. Project emissions and leakage emissions are not to be considered for wind projects as per the methodology.	OK	OK


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b. Have the equations and parameters in the PDD been correctly applied with respect those in the select approved methodology?	VVM	90	Yes	OK	OK
i. Are the Project emissions appropriately calculated?	ACM	0002 v.12.1	Project emissions are not to be considered for wind projects, as per the applied methodology ACM 0002	OK	OK
ii. Are the Baseline emissions appropriately calculated specifically for (a) greenfield plants or (b) retrofit and replacements or (c) capacity additions?	ACM	0002 v.12.1	To be verified after the Project Participant response to clarify whether the project activity is a Greenfield or capacity addition	--	OK
iii. Are the Leakage appropriately calculated?	ACM	0002 v.12.1	Leakage emissions are not required to be considered as per the approved methodology.	OK	OK
iv. Are the Emission reductions appropriately calculated?	ACM	0002 v.12.1	Please provide the copy of the CER sheet	CL 18	OK
c. Have project participants prepared as part of the CDM-PDD an estimate of likely emission reductions for the proposed crediting period? This estimate should, in principle, employ the same methodology as selected for the calculation of emission reductions. Where the grid emission factor (EFCM,grid,y) is determined ex post during monitoring, project participants may use models or other tools to estimate the emission reductions prior to validation.	ACM	0002 v.12.1	Yes, however please provide the copy of the CER sheet	--	OK
d. Does the methodology provide for selection between different options for equations or parameters?	VVM	90	No	OK	OK
e. If yes, has adequate justification been provided (based on the choice of the baseline scenario,	VVM	90	Not applicable	OK	OK



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context of the proposed CDM project activity and other evidence provided)?					
f. If yes, have correct equations and parameters been used, in accordance with the methodology selected?	VVM	90	Refer to (5.e.b) above	-	OK
g. Will data and parameters be monitored throughout the crediting period of the proposed CDM project activity?	VVM	91	Only the net electricity supplied to the grid by the project activity would be monitored ex-ante. All the other parameters for emission factor are fixed ex-ante	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			
i. Appropriate and correct?	VVM	91	Yes	OK	OK
ii. Applicable to the proposed CDM project activity?	VVM	91	Yes	OK	OK
iii. Resulting in a conservative estimate of the emission reductions?	VVM	91	Yes	OK	OK
i. Will data and parameters be monitored on implementation and hence become available only after validation of the project activity?	VVM	91	Only the parameter of net electricity supplied to the grid would be monitored after the implementation of the project activity.	OK	OK
j. If yes, are the estimates provided in the PDD for these data and parameters reasonable?	VVM	91	Yes	OK	OK
6. Additionality of a project activity					
a. Does the PDD describe how a proposed CDM project activity is additional?	VVM	94	Yes	OK	OK
b. Does the CDM-PDD state the latest version of the additionality tool being used?	ACM	0002 v.12.1	Yes	OK	OK
c. Were the following steps of the tool to assess additionality used:	EB 39	Ann 10			



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i. Identification of alternatives to the project activity?	EB 39	Ann 10	The identification of the alternatives are not required to be done since the applied methodology itself prescribes a pre-defined baseline scenario	OK	OK
ii. Investment analysis to determine that the proposed project activity is either: 1) not the most economically or financially attractive, or 2) not economically or financially feasible?	EB 39	Ann 10	Yes, the Project Participant has conducted investment analysis to prove additionality of the project activity.	OK	OK
iii. Barriers analysis?	EB 39	Ann 10	Yes, the Project Participant has demonstrated additionality with barrier analysis too. High capital cost and technical barriers are discussed under barrier analysis. However the barriers discussed are not specific to the Project Participant alone but are also faced by other investors. Hence it is not proven as to how the barriers are applicable to the proposed project activity.	CAR 15	OK
iv. Common practice analysis?	EB 39	Ann 10	Common practice analysis is described in the PDD. However the following is not clear viz; 1. The reason for considering the geographical scope for conducting common practice analysis is limited to the State of Tamil Nadu. 2. The criteria defined by the Project Participant for similar scale projects, in line with the requirements described in sub-step 4 (a) of the additionality tool is not clear. 3. The list of wind power projects that are similar to the proposed CDM project activity is not provided.	CAR 16	OK


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			4. Further, in case, similar wind power projects are observed, then it is not clear what are the essential differences between these project ts and the proposed project activity.		
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	Yes, there are 2 alternatives considered viz; proposed project activity not undertaken as a CDM project activity and continuation of the current situation viz drawing power from the grid	OK	OK
ii. Sub-step 1b: Consistency with mandatory laws and regulations	EB 39	Ann 10	Both the above alternatives are consistent with the mandatory laws and regulations	OK	OK
e. Have the following alternatives been included while defining alternatives as per sub-step 1a?	EB 39	Ann 10			
i. (a) The proposed project activity undertaken without being registered as a CDM project activity;	EB 39	Ann 10	Yes	OK	OK
ii. (b) Other realistic and credible alternative scenario(s) to the proposed CDM project activity scenario that deliver outputs services or services with comparable quality, properties and application areas, taking into account, where relevant, examples of scenarios identified in the underlying methodology;	EB 39	Ann 10	No, since the applied methodology prescribes the baseline scenario	OK	OK
iii. (c) If applicable, continuation of the current situation (no project activity or other alternatives undertaken).	EB 39	Ann 10	Yes	OK	OK
f. Has the project participant included the technologies or practices that provide outputs or	EB 39	Ann 10	Not applicable	OK	OK


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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?					
g. Has the outcome of Step 1a: Identified realistic and credible alternative scenario(s) to the project activity done correctly? Please briefly mention the outcome.	EB 39	Ann 10	Yes	OK	OK
h. Is the alternative(s) in compliance with all mandatory applicable legal and regulatory requirements, even if these laws and regulations have objectives other than GHG reductions, e.g. to mitigate local air pollution.?	EB 39	Ann 10	Yes	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	OK	OK
j. Has the outcome of Step 1b: Identified realistic and credible alternative scenario(s) to the project activity that are in compliance with mandatory legislation and regulations taking into account the enforcement in the region or country and EB decisions on national and/or sectoral policies and	EB 39	Ann 10	The outcome of none of the steps of the additionality tool are specified	CL 19	OK


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regulations done correctly? Please state the outcome.					
k. Has PP selected Step 2 (Investment analysis) or Step 3 (Barrier analysis) or both Steps 2 and 3?	EB 39	Ann 10	The Project Participant has selected investment analysis as well as barrier analysis	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	OK	OK
ii. Sub-step 2b: Option I. Apply simple cost analysis;	EB 39	Ann 10	Simple cost analysis is not applied since the project activity derives economic benefits from the project activity other than CDM revenue	OK	OK
iii. Sub-step 2b: Option II. Apply investment comparison analysis;	EB 39	Ann 10	Not applied	OK	OK
iv. Sub-step 2b: Option III. Apply benchmark analysis;	EB 39	Ann 10	Yes, the Project Participant has applied benchmark analysis to demonstrate investment analysis	OK	OK
v. Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III);	EB 39	Ann 10	Yes	Ok	OK
vi. Sub-step 2d: Sensitivity analysis (only applicable to Options II and III).	EB 39	Ann 10	Yes, a sensitivity analysis is conducted	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	OK	OK
ii. Otherwise, use the investment comparison	EB	Ann	The benchmark analysis is used for financial	OK	OK


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analysis (Option II) or the benchmark analysis (Option III). Specify option used with justification.	39	10	analysis. PLR specified by RBI is considered as the benchmark which is in line with the EB requirement which states that local commercial lending rates are appropriate benchmarks for a project IRR.		
n. Has the below guideline followed for sub-step 2b Option I. Apply simple cost analysis? Document the costs associated with the CDM project activity and the alternatives identified in Step1 and demonstrate that there is at least one alternative which is less costly than the project activity.	EB 39	Ann 10	Simple cost analysis is not being used for the project financial analysis	OK	OK
o. Has the below guideline followed for sub-step 2b Option II. Apply investment comparison analysis? Identify the financial indicator, such as IRR, NPV, cost benefit ratio, or unit cost of service most suitable for the project type and decision-making context. Please specify	EB 39	Ann 10	Not applicable	OK	OK
p. Has the below guideline followed for Sub-step 2b: Option III. Apply benchmark analysis?	EB 39	Ann 10			
i. Identify the financial/economic indicator, such as IRR, most suitable for the project type and decision context.	EB 39	Ann 10	Yes, project IRR is used as the financial indicator.	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	EB 39	Ann 10	Yes	OK	OK



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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.					
iii. Discount rates and benchmarks shall be derived from: (a) Government bond rates, increased by a suitable risk premium to reflect private investment and/or the project type, as substantiated by an independent (financial) expert or documented by official publicly available financial data; (b) Estimates of the cost of financing and required return on capital (e.g. commercial lending rates and guarantees required for the country and the type of project activity concerned), based on bankers views and private equity investors/funds' required return on comparable projects; (c) A company internal benchmark (weighted average capital cost of the company), only in the particular case referred to above in 2. The project developers shall demonstrate that this benchmark has been consistently used in the past, i.e. that project activities under similar conditions developed by the same company used the same benchmark; (d) Government/official approved benchmark where such benchmarks are used for investment decisions; (e) Any other indicators, if the project participants can	EB 39	Ann 10	Yes	OK	OK


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demonstrate that the above Options are not applicable and their indicator is appropriately justified. Please specify benchmark and justify.					
q. Has the below guideline followed for Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III)?	EB 39	Ann 10			
i. Calculate the suitable financial indicator for the proposed CDM project activity and, in the case of Option II above, for the other alternatives. Include all relevant costs (including, for example, the investment cost, the operations and maintenance costs), and revenues (excluding CER revenues, but possibly including inter alia subsidies/fiscal incentives, ODA, etc, where applicable), and, as appropriate, non-market cost and benefits in the case of public investors if this is standard practice for the selection of public investments in the host country.	EB 39	Ann 10	Not applicable	OK	OK
ii. Present the investment analysis in a transparent manner and provide all the relevant assumptions, preferably in the CDM-PDD, or in separate annexes to the CDM-PDD.	EB 39	Ann 10	Please refer CAR 19 below.	--	OK
iii. Justify and/or cite assumptions.	EB 39	Ann 10	Please refer CAR 19 below	--	OK
iv. In calculating the financial/economic indicator, the project's risks can be included through the cash flow pattern, subject to project-specific expectations and assumptions.	EB 39	Ann 10	Yes	OK	OK



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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	Yes, there is no difference in the input values across the project activity.	OK	OK
vi. Present in the CDM-PDD a clear comparison of the financial indicator for the proposed CDM activity. Please specify details for above.	EB 39	Ann 10	Yes	OK	OK
r. Has the below guideline followed for Sub-step 2d: Sensitivity analysis (only applicable to Options II and III)? Include a sensitivity analysis that shows whether the conclusion regarding the financial/economic attractiveness is robust to reasonable variations in the critical assumptions.	EB 39	Ann 10	Yes, sensitivity analysis is conducted by the Project Participant.	OK	OK
s. Has the outcome of Step 2 clearly mentioned with justification?	EB 39	Ann 10	No, the outcome of Step 2 is not indicated in the PDD Refer CL 19 above	--	OK
t. In step 3: Barrier analysis have all the sub-steps as below been followed?	EB 39	Ann 10			
i. Sub-step 3a: Identify barriers that would prevent the implementation of the proposed CDM project activity;	EB 39	Ann 10	Technical barriers and barrier due to high capital cost is stated as the barriers to the project activity. However these barriers are not only applicable to the Project Participant but also to the other investors in wind power project in the region. Hence it is not proven that the barrier exists for the Project Participant. Refer CAR 15 above	--	OK
ii. Sub-step 3 b: Show that the identified barriers would not prevent the implementation of at	EB 39	Ann 10	Please refer CAR 15 above	--	OK


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


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outputs comparable to those of the proposed CDM project activity, as demonstrated by relevant scientific literature or technology manufacturer information, The particular technology used in the proposed project activity is not available in the relevant region.					
iii. (c) Barriers due to prevailing practice: The project activity is the "first of its kind".	EB 39	Ann 10	Not applicable	OK	OK
iv. (d) Other barriers, preferably specified in the underlying methodology as examples.	EB 39	Ann 10	Not applicable	OK	OK
v. Has the outcome from Step 3a clearly mentioned in PDD?	EB 39	Ann 10	No, the outcome of Step 3a is not clearly mentioned Refer CL 19 above	--	OK
w. Has the below guideline followed for Sub-step 3 b: Show that the identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed project activity)?	EB 39	Ann 10	Please refer CAR 15 above	--	OK
i. If the identified barriers also affect other alternatives, explain how they are affected less strongly than they affect the proposed CDM project activity. In other words, demonstrate that the identified barriers do not prevent the implementation of at least one of the alternatives. Any alternative that would be prevented by the barriers identified in Sub-step 3a is not a viable alternative, and shall be eliminated from consideration.	EB 39	Ann 10	Please refer CAR 15 above	--	OK
ii. Provide transparent and documented evidence,	EB	Ann	Please refer CAR 15 above	--	OK


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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.	39	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, technical schools, training centres), industry associations and others. Please specify.	EB 39	Ann 10	Not applicable	OK	OK
x. Has the outcome from Step 3 clearly mentioned in PDD?	EB 39	Ann 10	No, the outcome from Step 3 is not clearly mentioned Refer CL 19 above	--	OK
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	Common practice analysis is described in the PDD. However the following is not clear viz; 1. The reason for considering the geographical	--	OK


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			scope for conducting common practice analysis is limited to the State of Tamil Nadu. 2. The criteria defined by the Project Participant for similar scale projects, in line with the requirements described in sub-step 4 (a) of the additionality tool is not clear. 3. The list of wind power projects that are similar to the proposed CDM project activity is not provided. 4. Further, in case, similar wind power projects are observed, then it is not clear what are the essential differences between these projects and the proposed project activity. Please refer CAR 16 above		
ii. Sub-step 4b: Discuss any similar Options that are occurring.	EB 39	Ann 10	Common practice analysis is described in the PDD. However the following is not clear viz; 5. The reason for considering the geographical scope for conducting common practice analysis is limited to the State of Tamil Nadu. 6. The criteria defined by the Project Participant for similar scale projects, in line with the requirements described in sub-step 4 (a) of the additionality tool is not clear. 7. The list of wind power projects that are similar to the proposed CDM project activity is not provided. 8. Further, in case, similar wind power projects are observed, then it is not clear what are the	--	OK


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			essential differences between these projects and the proposed project activity.		
			Please refer CAR 16 above		
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	Common practice analysis is described in the PDD. However the following is not clear viz; 1. The reason for considering the geographical scope for conducting common practice analysis is limited to the State of Tamil Nadu. 2. The criteria defined by the Project Participant for similar scale projects, in line with the requirements described in sub-step 4 (a) of the additionality tool is not clear. 3. The list of wind power projects that are similar to the proposed CDM project activity is not provided. 4. Further, in case, similar wind power projects are observed, then it is not clear what are the essential differences between these projects and the proposed project activity.	--	OK
			Please refer CAR 16 above		
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	EB 39	Ann 10	Common practice analysis is described in the PDD. However the following is not clear viz; 1. The reason for considering the geographical scope for conducting common practice analysis is limited to the State of Tamil Nadu. 2. The criteria defined by the Project Participant for similar scale projects, in line with the	--	OK


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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.			requirements described in sub-step 4 (a) of the additionality tool is not clear. 3. The list of wind power projects that are similar to the proposed CDM project activity is not provided. 4. Further, in case, similar wind power projects are observed, then it is not clear what are the essential differences between these projects and the proposed project activity. Please refer CAR 16 above		
bb. Has the outcome from Step 4 clearly mentioned in PDD?	EB 39	Ann 10	Outcome from Step 4 is not clearly mentioned. Refer CL 19 above	--	OK
cc. Has it been proved that the project is additional?	EB 39	Ann 10	No, please refer to CAR/CL raised above	--	OK



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a. Prior consideration of the clean development mechanism					
a. Is the project activity start date prior to the date of publication of the PDD for stakeholder comments?	VVM	98	Yes	OK	OK
b. If yes, were the CDM benefits considered necessary in the decision to undertake the project as a proposed CDM project activity?	VVM	98	As per the information provided by the Project Participant, the following procedure is followed for getting clearances from the Board viz; A note is prepared and submitted by the technical team of the factory unit to the Board and the Board decides to go ahead / not ahead with the Project Activity. Project Participant to provide the copy of the note / proposal submitted to the Board for phase 4 & 5 and also provide evidences of all the communication between the Board and the project technical team. Also provide the copy of the Board minutes w.r.t these notes submitted. The overall process of Board decision is not clear for the Project Activity	CAR 17	OK
c. Is the start date of the project activity, reported in the PDD, in accordance with the "Glossary of CDM terms", which states that "The starting date of a CDM project activity is the earliest date at which either the implementation or construction or real action of a project activity begins."?	VVM	99	Yes, the start date indicated in the PDD is the date of the purchase order placed for the project activity. However Project Participant to provide the copies of all the P.O placed for the project activity.	--	OK



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d. Does the project activity require construction, retrofit or other modifications?	VVM	99	The project activity requires construction.	OK	OK
e. If yes, is it ensured that the date of commissioning cannot be considered as the project activity start date?	VVM	99	Yes, the date of the P.O for the project activity is considered as the start date of the 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 is an existing project activity with a start date prior to 2 nd August 2008	OK	OK
g. For a new project, for which PDD has not been published for global stakeholder consultation or a new methodology proposed to the CDM Executive Board before the project activity start date, had PP's 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	Not applicable	OK	OK
h. For an existing project activity, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation, are the following evidences provided:	VVM	102			
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	Project Participant to provide supporting evidence regarding the awareness of CDM prior to the project activity start date.	CL 20	OK


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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	The copy of the CDM Board resolution dated 22.08.2005 for both the phases (i.e phase 4 & 5), as indicated in the webhosted PDD was not observed during the site visit. Please provide a copy of the same. Hence assessment of CDM consideration is not complete	CL 21	OK
iii. reliable evidence from project participants that must indicate that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation, including, inter alia:	VVM	102	The CDM chronology of events is incompletely described. E.g 1. Please forward all the original mails received from Synergy Global, as indicated in the CDM chronology of events. 2. The date of note issued for newspaper advertisement for rendering CDM services is incorrectly stated in the PDD. 3. Provide the copies of all the evidences as indicated in the chronology in the PDD. 4. The work order for ITCOT consultancy services does not have the signatures of the consultant. 5. The date of newspaper advt for local stakeholder meeting is not indicated in the PDD. Project Participant to provide a complete chronology of events along with all supporting evidences. The time period for assessing real and	CAR 18	OK


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			continuing actions were taken for securing CDM status as per EB 49 guideline is not adequately described. Hence the process of the chronology of events could not be assessed in complete.		
a. contract with consultants for CDM/PDD/methodology services?	VVM	102	The copy of the proposal given by Suzlon, as indicated in the note for Board Meeting No 167 to be provided. Also provide the copy of the proposal sent by E&Y. The contract agreement between Project Proponent and Suzlon dated 17.12.2005, for Phase 4 of the project activity (i.e at Alagiapandipuram) indicates of a tender dated 13.05.05 and LOI dated 03.09.2005. Project Proponent to provide the copies of all the documents indicated under "Reference" on page 1 of the contract. Similarly provide the copies of the same for Devarkulam contract agreement with M/s Suzlon.	CL 22	OK
b. Emission Reduction Purchase Agreements or other documentation related to the sale of the potential CERs (including correspondence with multilateral financial institutions or carbon funds)?	VVM	102	Not applicable	OK	OK



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c. evidence of agreements or negotiations with a DOE for validation services?	VVM	102	Yes, the evidence of agreement with DOE is available.	OK	OK
d. submission of a new methodology to the CDM Executive Board?	VVM	102	Not applicable	OK	OK
e. publication in newspaper?	VVM	102	Yes, local newspaper publication for stakeholder consultation process was reviewed.	OK	OK
f. interviews with DNA?	VVM	102	Yes	OK	OK
g. earlier correspondence on the project with the DNA or the UNFCCC secretariat?	VVM	102	Yes, the Project Participant has sought a clarification from the CDM EB regarding the applicability condition No 2 of the methodology ACM 0002, version 10. Based on the clarification request, ACM 0002 was revised to Version 11.	OK	OK
h. Has the chronology of events including time lines been appropriately captured and explained/detailed in the PDD?	VVM	102	No, please refer CAR 19 above	--	OK
b. Identification of alternatives					
a. Does the approved methodology that is selected by the proposed CDM project activity prescribe the baseline scenario and hence no further analysis is required?	VVM	105	Yes, the approved methodology, ACM 0002 prescribe the baseline scenario and hence no further analysis is required	OK	OK
b. If no, does the PDD identify credible alternatives to the project activity in order to determine the most realistic baseline scenario?	VVM	105	Not applicable	OK	OK
c. Does the list of alternatives given in the PDD ensure that:	VVM	106			
i. the list of alternatives includes as one of the options that the project activity is undertaken without being registered as a	VVM	106	Not applicable	OK	OK



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proposed CDM project activity?					
ii. the list contains all plausible alternatives that the DOE, on the basis of its local and sectoral knowledge, considers to be viable means of supplying the outputs or services that are to be supplied by the proposed CDM project activity?	VVM	106	Not applicable	OK	OK
iii. the alternatives comply with all applicable and enforced legislation?	VVM	106	Not applicable	OK	OK
c. Investment analysis					
a. Has investment analysis been used to demonstrate the additionality of the proposed CDM project activity?	VVM	108	Yes	OK	OK
b. If yes, does the PDD provide evidence that the proposed CDM project activity would not be:	VVM	108			
i. the most economically or financially attractive alternative?	VVM	108	Yes	OK	OK
ii. economically or financially feasible, without the revenue from the sale of certified emission reductions (CERs)?	VVM	108	Yes	OK	OK
c. Was this shown by one of the following approaches?	VVM	109			
i. The proposed CDM project activity would produce no financial or economic benefits other than CDM-related income. Document the costs associated with the proposed CDM project activity and the alternatives identified and demonstrate that there is at least one alternative which is less costly	VVM	109	In the investment analysis discussed in the PDD, the following needs further justification viz; 1. Provide the copy of the IRR excel sheet. 2. Provide the copy of the bank loan application letter (of all the banks). Also provide the copy of the loan sanction letter and also the loan agreement copies.	CAR 19	OK


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than the proposed CDM project activity.			3. The unit of energy used is different at different places. E.g kWh, MWh etc.. 4. The source of the assumptions is stated to be from the DPR. However it is not clear which entity has prepared the DPR and for what purpose? 5. The project cost is not indicated for either the Alagiapandipuram or Devarkulam project in the PDD 6. How is the repair and maintenance cost different from the O&M costs, as indicated in the DPR?? Further what is the basis for the Repair and maintenance values is not clear. 7. The O&M cost is indicated to be INR 11 lac per WEG/annum whereas the PDD indicates the cost to be INR 5.50 million from 3rd year onwards. Similar discrepancies are also observed for insurance costs. The sensitivity analysis has considered the project cost as one of the variables. How the project cost is a variable is not clear?? Sensitivity analysis is not conducted for the unit rate of power as the unit rates of power for both the phases 4 & 5 have changed		
ii. The proposed CDM project activity is less economically or financially attractive than at least one other credible and realistic alternative.	VVM	109	Yes	OK	OK


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iii. The financial returns of the proposed CDM project activity would be insufficient to justify the required investment.	VVM	109	Yes	OK	OK
d. Is the period of assessment limited to the proposed crediting period of the CDM project activity?	EB 51	Ann 58	No, the period of assessment of the proposed project activity is conducted for the lifetime of the project activity viz 20 years	OK	OK
e. Does the project IRR and equity IRR calculations reflect the period of expected operation of the underlying project activity (technical lifetime), or - if a shorter period is chosen - include the fair value of the project activity assets at the end of the assessment period?	EB 51	Ann 58	The project IRR calculations reflect the period of the project activity viz 20 years	OK	OK
f. Does the IRR calculation include the cost of major maintenance and/or rehabilitation if these are expected to be incurred during the period of assessment?	EB 51	Ann 58	No	OK	OK
g. Do the project participants justify the appropriateness of the period of assessment in the context of the underlying project activity, without reference to the proposed CDM crediting period?	EB 51	Ann 58	Yes, the period of assessment considered is 20 years, which is justified since the assessment is conducted for the lifetime of the project activity	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	The salvage value of the project activity components is not considered in the IRR working.	CAR 20	OK
i. Has the fair value been calculated in accordance with local accounting regulations where available, or international best practice?	EB 51	Ann 58	Please refer above CAR	--	OK
j. Does the fair value calculations include both the book value of the asset and the reasonable	EB 51	Ann 58	Please refer above CAR	--	OK


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expectation of the potential profit or loss on the realization of the assets?					
k. Was depreciation, and other non-cash items related to the project activity, which have been deducted in estimating gross profits on which tax is calculated, added back to net profits for the purpose of calculating the financial indicator (e.g. IRR, NPV)?	EB 51	Ann 58	Yes	OK	OK
l. Has taxation been included as an expense in the IRR/NPV calculation in cases where the benchmark or other comparator is intended for post-tax comparisons?	EB 51	Ann 58	Yes	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	1. There is no clarity as to from where were the values indicated in the DPR taken from? 2. The term loan agreement with State bank of Patiala and Syndicate Bank indicates of a bank application letter dated 25.08.2005 and also refers to 2 letters dated 26.09.2005 and 03.10.2005. Provide copies of the same.	CAR 21	OK
n. Is the timing of the investment decision consistent and appropriate with the input values?	EB 51	Ann 58	Yes	OK	OK
o. Are all the listed input values been consistently applied in all calculations?	EB 51	Ann 58	Yes	OK	OK
p. Does the investment analysis reflect the economic decision making context at point of the decision to recommence the project in the case of project activities for which implementation ceases after the commencement and where implementation is recommenced due to	EB 51	Ann 58	Not applicable	OK	OK


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consideration of the CDM?					
q. Have project participants supplied the spreadsheet versions of all investment analysis?	EB 51	Ann 58	Yes, the IRR worksheet is provided to the validation team	OK	OK
r. Are all formulas used in this analysis readable and all relevant cells be viewable and unprotected?	EB 51	Ann 58	Yes	OK	OK
s. In cases where the project participant does not wish to make such a spreadsheet available to the public has the PP provided an exact read-only or PDF copy for general publication?	EB 51	Ann 58	Not applicable	OK	OK
t. In case the PP wishes to black-out certain elements of the publicly available version, is it justifiable?	EB 51	Ann 58	Not applicable	OK	OK
u. Was the cost of financing expenditures (i.e. loan repayments and interest) included in the calculation of project IRR?	EB 51	Ann 58	Yes	OK	OK
v. In the calculation of equity IRR, has only the portion of investment costs which is financed by equity been considered as the net cash outflow?	EB 51	Ann 58	Not applicable, as the project activity uses 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	OK	OK
x. Was a pre-tax benchmark be applied?	EB 51	Ann 58	Yes, the webhosted PDD considers the RBI PLR as the benchmark which is pre-tax.	--	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	--	OK
z. In such situations, was interest calculated	EB	Ann	Yes, interest is calculated by assessing the cost	OK	OK


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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	of debt acquired by the project participant for the wind project prior to this project activity.		
aa. In cases where a benchmark approach is used is the applied benchmark appropriate to the type of IRR calculated?	EB 51	Ann 58	Yes, the project participant has considered RBI PLR as the benchmark and compared it with the project IRR, which is appropriate	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	Yes, lending rate of RBI has been considered as the benchmark for the project activity.	--	OK
cc. Has required/expected returns on equity selected as appropriate benchmark for an equity IRR?	EB 51	Ann 58	Not applicable	OK	OK
dd. In case benchmarks supplied by relevant national authorities selected is it applicable to the project activity and the type of IRR calculation presented?	EB 51	Ann 58	Not applicable	OK	OK
ee. In the cases of projects which could be developed by an entity other than the project participant is the benchmark applied based on publicly available data sources which can be clearly validated?	EB 51	Ann 58	Yes, the benchmark applied by the Project participant for the project activity is RBI PLR which is based on publicly available data.	OK	OK
ff. Have internal company benchmarks/expected returns (including those used as the expected return on equity in the calculation of a weighted average cost of capital - WACC) been applied in cases where there is only one possible project developer?	EB 51	Ann 58	Internal company benchmarks have not been considered in the project activity.	OK	OK


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gg. In such cases, have these values been used for similar projects with similar risks, developed by the same company or, if the company is brand new, would have been used for similar projects in the same sector in the country/region?	EB 51	Ann 58	Not applicable	OK	OK
hh. Has a minimum clear evidence of the resolution by the company's Board and/or shareholders been provided to the effect as above?	EB 51	Ann 58	Not applicable	OK	OK
ii. Has a thorough assessment of the financial statements of the project developer - including the proposed WACC - to assess the past financial behavior of the entity during at least the last 3 years in relation to similar projects been conducted?	EB 51	Ann 58	Project participant to provide the benchmarks that have been used in wind power projects for the previous 3 years, with supporting evidences	CL 23	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	The project participant is not using the approach of ROE for benchmark.	OK	OK
kk. Has an investment comparison analysis and not a benchmark analysis used when the proposed baseline scenario leaves the project participant no other choice than to make an investment to supply the same (or substitute) products or services?	EB 51	Ann 58	Not applicable as the project participant has used a benchmark analysis for the project activity.	OK	OK


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II. Have variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues been subjected to reasonable variation (positive and negative) and the results of this variation been presented in the PDD and be reproducible in the associated spreadsheets?	EB 51	Ann 58	The project participant has considered sensitivity analysis on the parameters of project cost and generation only, in the webhosted PDD. However the following points to be clarified by the project participant viz; 1. Justification for why the project cost is subjected to a variation of only 10% is not clear. 2. Similarly the justification for subjecting the generation to only 10% variation is not clear. 3. The justification provided by the project participant for not subjecting the tariff to a sensitivity analysis is not acceptable, as the validation team has observed that the tariff in Tamil Nadu increases over a period of time. 4. Project participant to justify as to why the parameter of O&M cost is not subjected to a sensitivity analysis.	CL 24	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	The project participant has considered sensitivity analysis on the parameters of project cost and generation only, in the webhosted PDD. However the following points to be clarified by the project participant viz; 1. Justification for why the project cost is	--	OK



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			subjected to a variation of only 10% is not clear. 2. Similarly the justification for subjecting the generation to only 10% variation is not clear. 3. The justification provided by the project participant for not subjecting the tariff to a sensitivity analysis is not acceptable, as the validation team has observed that the tariff in Tamil Nadu increases over a period of time. 4. Project participant to justify as to why the parameter of O&M cost is not subjected to a sensitivity analysis.		
nn. Is the range of variations selected is reasonable in the project context?	EB 51	Ann 58	No, the project participant has not provided adequate justification on whether the selected variations are reasonable. Please refer CL 24 above	--	OK
oo. Dos the variations in the sensitivity analysis at least cover a range of +10% and -10%, unless this is not deemed appropriate in the context of the specific project circumstances?	EB 51	Ann 58	Yes, however the reason for subjecting the parameters to only 10% variations is not justified by the project participant. Please refer CL 24 above	--	OK
pp. In cases where a scenario will result in the project activity passing the benchmark or becoming the most financially attractive alternative, is an assessment done of the probability of the occurrence of this scenario in	EB 51	Ann 58	To be reviewed based on the response provided by the project participant to CL 24 above	--	OK


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comparison to the likelihood of the assumptions in the presented investment analysis, taking into consideration correlations between the variables as well as the specific socio-economic and policy context of the project activity?					
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	Yes, the plant load factor has been based on the financing bank letter provided to the project participant. Project participant to provide the copies of the same.	CL 25 OK	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	OK	OK
rr. Was a thorough assessment of all parameters and assumptions used in calculating the relevant financial indicator, and determine the accuracy and suitability of these parameters using the available evidence and expertise in relevant accounting practices conducted?	VVM	111	Yes	OK	OK
ss. Were the parameters cross-checked against third-party or publicly available sources, such as invoices or price indices?	VVM	111	Yes, the values of some of the parameters were cross-checked with the applicable tariff orders by the State regulatory agency, valid at the time of investment decision.	OK	OK
tt. Were feasibility reports, public announcements and annual financial reports related to the proposed CDM project activity and the project	VVM	111	Yes, the annual financial reports of the project participant were reviewed.	OK	OK



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participants reviewed?					
uu. Was the correctness of computations carried out and documented by the project participants assessed?	VVM	111	Yes	OK	OK
vv. Was the sensitivity analysis by the project participants to determine under what conditions variations in the result would occur, and the likelihood of these conditions assessed?	VVM	111	Yes. Please refer CL 24 above	--	OK
ww. Is the type of benchmark applied is suitable for the type of financial indicator presented?	VVM	112	Yes, the RBI PLR is suitable for an project IRR	OK	OK
xx. Do any risk premiums applied determining the benchmark reflect the risks associated with the project type or activity?	VVM	112	Not applicable	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	Project participant to provide the details of the previous investments in wind power projects.	--	OK
ii. determining whether the same benchmark has been applied?	VVM	112	Project participant to provide the details of the benchmarks used in the previous investments in wind power projects. Provide supporting evidences.	--	OK
iii. determining if there are verifiable circumstances that have led to a change in the benchmark?	VVM	112	No	OK	OK
zz. Did the project participants rely on values from Feasibility Study Reports (FSR) that are	VVM	113	No, the project participant did not rely on values from the FSR, rather they relied on the values	OK	OK



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approved by national authorities for proposed CDM project activities?			indicated by the supplier in the initial offer.		
xx. If yes:	VVM	113			
i. has the FSR been the basis of the decision to proceed with the investment in the project, i.e. that the period of time between the finalization of the FSR and the investment decision is sufficiently short for the DOE to confirm that it is unlikely in the context of the underlying project activity that the input values would have materially changed?	VVM	113	Not applicable	OK	OK
ii. Are the values used in the PDD and associated annexes fully consistent with the FSR?	VVM	113	Not applicable	OK	OK
iii. If not, was the appropriateness of the values validated?	VVM	113	Not applicable	OK	OK
iv. On the basis of its specific local and sectoral expertise, is confirmation provided, by cross-checking or other appropriate manner, that the input values from the FSR are valid and applicable at the time of the investment decision?	VVM	113	Not applicable	OK	OK
d. Barrier analysis					
a. Has barrier analysis been used to demonstrated the additionality of the proposed CDM project activity?	VVM	115	Yes, barrier analysis has been used by the Project Participant to demonstrate additionality.	OK	OK
b. If yes, does the PDD demonstrate that the proposed CDM project activity faces barriers that:	VVM	115			


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i. prevent the implementation of this type of proposed CMD project activity?	VVM	115	1. The barrier analysis does not demonstrate additionality. E.g High capital cost is not a prohibitive barrier since the barrier is also applicable to the other investors. 2. Technical barriers discussed in the PDD are not prohibitive barriers to the Project Participant, but is a common barrier faced by the other investors also. Refer CAR 15 above	--	OK
ii. do not prevent the implementation of at least one of the alternatives?	VVM	115	Refer above CAR	--	OK
c. Are there any issues that have a clear direct impact on the financial returns of the project activity, other than: risk related barriers, for example risk of technical failure, that could have negative effects on the financial performance; or barriers related to the unavailability of sources of finance for the project activity? {If yes, these issues cannot be considered barriers and shall be assessed by investment analysis. [Refer to (6.c) above]}	VVM	116	1. The barrier analysis does not demonstrate additionality. E.g High capital cost is not a prohibitive barrier since the barrier is also applicable to the other investors. 2. Technical barriers discussed in the PDD are not prohibitive barriers to the Project Participant, but is a common barrier faced by the other investors also. Refer CAR 15 above	--	OK
d. Were the barriers determined as real by:	VVM	117			
i. assssing the available evidence and/or undertaking interviews with relevant individuals (including members of industry associations, government officials or local	VVM	117	The barrier analysis does not demonstrate additionality. E.g High capital cost is not a prohibitive barrier since the barrier is also applicable to the other investors.	--	OK



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experts if necessary) to determine whether the barriers listed in the PDD exist?			Technical barriers discussed in the PDD are not prohibitive barriers to the Project Participant, but is a common barrier faced by the other investors also. Refer CAR 15 above		
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	The barrier analysis does not demonstrate additionality. E.g High capital cost is not a prohibitive barrier since the barrier is also applicable to the other investors. Technical barriers discussed in the PDD are not prohibitive barriers to the Project Participant, but is a common barrier faced by the other investors also. Refer CAR 15 above	--	OK
iii. Is existence of a barrier substantiated only by the opinions of the project participants? (If yes, this barrier cannot be considered as adequately substantiated)	VVM	117	Refer above CAR	--	OK
e. Were the barriers determined as preventing the implementation of the project activity but not the implementation of at least one of the possible alternatives by applying local and sectoral expertise to judge whether a barrier or set of barriers would prevent the implementation of the	VVM	117	Refer above CAR	--	OK



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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	Common practice analysis is not discussed transparently. E.g Analysis of the wind mills not under CDM is not conducted and it is also not discussed clearly as to what benefits are enjoyed by these investors that the Project Participant has been unable to enjoy? Refer CAR 16 above	--	OK
c. Was it assessed whether the geographical scope (e.g. defined region) of the common practice analysis is appropriate for the assessment of common practice related to the project activity's technology or industry type? (For certain technologies the relevant region for assessment will be local and for others it may be transnational/global).	VVM	120	No, it is not explained by the Project Participant as why the geographical scope of the common practice analysis has been limited to the State of TamilNadu. Refer CAR 16 above	--	OK
d. Was a region other than the entire host country chosen?	VVM	120	Yes, the region chosen for common practice analysis is the State rather the host country. Please refer CAR 16 above	--	OK
e. If yes, was the explanation why this region is more appropriate assessed?	VVM	120	No Please refer CAR 16 above	--	OK


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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	Common practice analysis is not discussed transparently. E.g Analysis of the wind mills not under CDM is not conducted and it is also not discussed clearly as to what benefits are enjoyed by these investors that the Project Participant has been unable to enjoy?	--	
g. Are similar and operational projects, other than CDM project activities, already "widely observed and commonly carried out" in the defined region?	VVM	120	Common practice analysis is not discussed transparently. E.g Analysis of the wind mills not under CDM is not conducted and it is also not discussed clearly as to what benefits are enjoyed by these investors that the Project Participant has been unable to enjoy?	--	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	Common practice analysis is not discussed transparently. E.g Analysis of the wind mills not under CDM is not conducted and it is also not discussed clearly as to what benefits are enjoyed by these investors that the Project Participant has been unable to enjoy?	--	OK
7. Monitoring plan					
a. Does the PDD include a monitoring plan?	VVM	122	Yes	OK	OK
b. Is this monitoring plan based on the approved monitoring methodology applied to the proposed CDM project activity?	VVM	122	Yes	OK	OK
c. Were the list of parameters required by the selected methodology identified?	VVM	123	Yes	OK	OK
d. Does the monitoring plan contains all necessary	VVM	123	The PDD under Section B.7.1 and B.7.2 doesn't	CAR 22	OK


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parameters?			address the following points namely; 1. Procedure for data uncertainties is not addressed. 2. Procedure for data apportioning are not addressed. 3. It is indicated that the meters are installed at the sub-stations and that power exported would be measured using these meters. Kindly clarify and confirm whether the measuring / recording of power export takes place at the sub-station. 4. Frequency for calibration of meters is not indicated. 5. It is not clear as to where the parameter of EG_{import} would be used in the overall emission reduction calculations. 6. Why is the permissible variation in main and check meters only 0.3 % whereas the accuracy class of the meters is 0.5 %. 7. There is a log book maintained at site which record the readings taken on the monthly basis from the main meters and signed by the TNEB and Project Participant representative. However the monitoring plan do not indicate the same. 8. There are check meters and standby meters installed at site, apart from the main meter. However the utility of the check and standby meters, in the overall monitoring of CER's, are not described in the PDD.		



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			9. The organizational structure of the Project Participant as indicated in the PDD does not match with the actual structure at the site. E.g. PDD indicates of a project manager at site whereas there is none at site.		
e. Are the parameters clearly described?	VVM	123	Refer CAR above	--	OK
f. Does the means of monitoring described in the plan comply with the requirements of the methodology?	VVM	123	Yes, however the monitoring plan is not transparently explained in the PDD	--	OK
g. Are all data and parameters monitored as per monitoring methodology?	ACM	0002 v.12.1	Yes, the net electricity supplied by the project activity to the grid is the parameter to be monitored as per the applied methodology. The same is indicated in Section B.7.1 of the PDD	OK	OK
h. Are all data collected as part of monitoring archived electronically and kept at least for 2 years after the end of the last crediting period?	ACM	0002 v.12.1	Yes, it is stated under B.7.2 that the data would be archived electronically and in paper for 2 years after the end of the crediting period	OK	OK
i. Are 100% of the data monitored, if not indicated otherwise?	ACM	0002 v.12.1	Yes	OK	OK
j. Are measurements conducted with calibrated measurement equipment according to relevant industry standards?	ACM	0002 v.12.1	Yes, measurements would be done by calibrated instruments. However the frequency of calibration is not stated.	--	OK
k. Are the monitoring provisions in the tools referred to in the methodology correctly applied?	ACM	0002 v.12.1	Not applicable	OK	OK
l. Are the monitoring arrangements described in the monitoring plan feasible within the project design?	VVM	123	Yes, the same would be feasible provided all the queries raised above on monitoring plan are addressed	OK	OK
m. Are the following means of implementation of the monitoring plan sufficient to ensure that the	VVM	123	Yes	OK	OK



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emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex post and verified:					
i. data management procedures?	VVM	123	The detailed flow of information of the data, used for emission reduction calculations, is not described in the PDD.	CAR 23	OK
ii. quality assurance procedures?	VVM	123	Please refer CAR 22 & 23 above	--	OK
iii. quality control procedures?	VVM	123	Please refer CAR 22 & 23 above	--	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	Yes	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	Yes, the HCA approval from the Indian DNA confirm the contribution of the project activity to sustainable development of India	OK	OK
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	OK	OK
b. Have comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity been invited?	VVM	129	Yes	OK	OK


**BUREAU
VERITAS**

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
c. Is the summary of the comments received as provided in the PDD complete?	VVM	129	Yes	OK	OK
d. Have the project participants taken due account of any comments received and described this process in the PDD?	VVM	129	Yes	OK	OK
10. Environmental impacts					
a. Have the project participants submitted documentation on the analysis of the environmental impacts of the project activity?	VVM	131	Since the project activity is a wind power project, there are no environmental impacts envisaged from the project activity.	OK	OK
b. Have the project participants undertaken an analysis of environmental impacts?	VVM	132	Not applicable	OK	OK
c. Does the host Party require an environmental impact assessment?	VVM	132	As per the Indian environmental legislation (EIA notification), the project activity does not require to undertake an environmental impact assessment.	OK	OK
d. If yes, have the project participants undertaken an environmental impact assessment?	VVM	132	Not applicable	OK	OK

**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 The Project Participant has the following investments in renewable energy viz ; • Wind energy project of about 15 MW set up in the year 1992 at Devarkulam and Perungadi (without CDM) • A biogas project under CDM (Registration No 0124), • Another wind mill project of 6.75 MW also under CDM (Registration No 1053) at Devarkulam apart from this Project Activity. 1. However the PDD, under Section A.2, doesn't indicate this prior experience of the Project Participant in renewable energy projects. 2. Further, in the light of the above points, Project Participant to explain why the Project Activity is not considered as capacity addition as defined in ACM 0002, Version 10.	Refer 3.d.i of Table 1 above	The details of the wind farm projects implemented prior to the project activity are incorporated in section A.2 of PDD. The details of biogas project registered under CDM is incorporated in section A.2 of PDD. The project activity is energy generation from 13.75 MW grid connected wind energy project (comprising Sub bundle 1: 6.25 MW and Sub bundle 2: 7.5 MW) and it is the capacity addition to existing 13.75 MW in the same area, out of that 6.75 MW was registered with UNFCCC (ref no: 1053) as CDM project activity. The present project activity 13.75 MW wind farm uses Option 2: on page 11/20 of methodology ACM0002/version 12.1.0 to calculate the	1. Numbering to be provided as requested for in the query. Further the response to point No 1 to be further fine-tuned. 2. The response is not clear as to how many phases are already installed and what are the phase numbers for the proposed project activity. Further the justification for how the proposed project activity is not a capacity addition is not explained transparently.



VALIDATION REPORT

Draft report clarifications and action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		parameter EG_{PJy} <u>Response 2 :</u> 1. The details of all renewable power projects implemented by the Project Proponent prior to the project activity are incorporated in Section A.2 of revised PDD. 2. The project activity is 13.75 MW grid connected wind electricity project comprising of Phase IV (6.25MW) and Phase V (7.5 MW) and it is a capacity addition to existing phase I (7.0 MW), Phase II (3.0 MW) and Phase III (3.75 MW) in the same area. However, in line with base line emission description under para C, page 10/20 of the applied methodology, in the case of wind power plants, it is assumed that the addition of new capacity does not significantly affect the electricity generated by the existing plants. In such a case the methodology requires the electricity fed to the grid by	DOE 2nd Response: 1. The Section A.2 of the revised PDD now clearly indicates the prior renewable energy project installations done by the project participant. 2. The validation team noted that the project participant has prior installations in wind project under Phase I, II & III. The proposed project activity is under Phase IV & V. Since the earlier Phase II (3MW) and Phase III (3.75MW) are registered under CDM as a single project activity (Registration No. 1053). Since the earlier wind projects are located in the same site as that



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		the added project plant (viz. proposed project activity) could be directly metered Since the electricity supplied to the grid by the individual wind turbines of the proposed project activity can be directly metered and the same can be used to determine EG_{PJy}. Further the PP is using option 2, equation 10 to determine the EG_{PJy}.	of the proposed project activity, the same is considered as a capacity addition to the earlier existing wind projects. However in line with the applied methodology viz; ACM 0002, version 12.1.0, since the addition of capacity to wind power projects do not have any significant effect on the electricity, the project participant has used Option 2 (referred on page 10 of the methodology) to determine the net electricity supplied to the grid. Based on the above clarifications, the CAR is closed.



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
CAR 2 1. Section A.2 of the PDD, under social well being - Please support the statement of employment for local populace with evidences. 2. It is indicated that Project Activity would bring about additional investment of INR 694.21 million. Provide supporting evidence for the same. 3. Technological well being is not discussed as per the requirement of the Indian DNA.	Refer 3.d.iii of Table 1 above	The evidence for the employment of local people will be submitted to DOE. The investment indicated is as given by the supplier. The offer letter given by the supplier is submitted to DOE. (Ref: support IRR_030&034) Technological well being is re-discussed in section A.2 of PDD. <u>Response 2:</u> 1. There are total of 14 people employed on behalf of TNPL and 7 people on behalf of M/s Suzlon (O& M team) currently employed for this project activity. 2. The total investment in project activity is INR 688.08 million (Ref. Support IRR_030 & 034).	1. Please provide the response in the same serial number as it appears in the query. 2. The investment indicated in the PDD is different that INR 694.21 million. Please clarify. 3. The response to be fine tuned. DOE 2nd Response : 1. The validation team during the site visit observed that there are about 14 people on behalf of the project participant and around 7 people from the surrounding villages employed with the O&M contractor viz; M/s Suzlon Infrastructure Services Limited. Apart from the same, the validation team also noted that the there were about 15 persons who were employed



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		3. Technological well being is discussed as per the requirement of the Indian DNA in section A.2 of revised PDD.	during the construction phase of the project activity. 2. The total investment for both the phases of the project activity is INR 688.08 million. The same has been verified from the offer letter of the WEG supplier, which was available to the project participant at the time of investment decision. 3. The description of technological well being has been revised in line with the requirements specified by the Indian DNA in Section A.2 of the revised PDD. Based on the above observations, the CAR is closed.
CAR 3 1. The description in Section A.4.1.4 exceeds one page. 2. Provide evidence for the lat-long of the individual WEG's and the SF numbers indicated in the table	Refer 3.f.ii of Table 1 above	The description in Section A.4.1.4 of PDD is restricted to one page. The evidence for the lat-long of the individual WEG's will be submitted to DOE The evidence for SF numbers is provided to DOE. (Ref: support chronology_005 &	1. The description in Section A.4.1.4 of the revised PDD is restricted to one page. 2. The supporting evidence for the lat-long is not yet provided to the validation team.



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		007) <u>Response 2:</u> 2. The supporting evidence for the lat-long is provided to the validation team (Ref. Support_21.03.2011_055).	DOE 2nd Response : 2. The supporting evidence for the lat-long has been provided by the project participant to the validation team. Based on the above observation, the CAR is closed.
CAR 4 Internationally accepted standard format for values where 1,000 represents one thousand is not used to indicate CER's under Section A.4.4 of the PDD.	Refer 3.i of Table 1 above	Necessary corrections are made in Section A.4.4 of the revised PDD.	The corrections are made in the revised PDD under Section A.4.4 of the revised PDD. Hence the CAR is closed.
CL 1 It is stated that there is no public funding for the project activity. Project participant to provide an undertaking on the company letterhead stating the same	Refer 3.j of Table 1 above	An undertaking in the company letter head for "no public funding from Annex 1 Party is involved for the project activity" will be submitted to DOE. <u>Response 2:</u> The undertaking from finance department	The undertaking submitted to the validation is not from any finance department of the project participant. DOE 2nd Response: The undertaking from the Finance



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		of the project participant is submitted to the validation team (Ref. Support_21.03.2011_056).	department of the project participant has been provided to the validation team dated 23/03/2011, which states that there is no public funding from Annex 1 countries for the proposed project activity. Hence the clarification request is closed.
CAR 5 The approved methodology and the methodological tools used are referred under Section B.1 of the PDD. However, version of the applied methodology and the Tool to calculate the emission factor is no longer valid.	Refer 3.k.i of Table 1 above	The baseline and monitoring methodology for selected large-scale CDM project activity categories ACM 002 version 12.1.0, EB 58 has been used. The title of the methodology is "Consolidated baseline methodology for grid connected electricity generation from renewable sources" The tool applied for establishing the baseline is "Combined tool to identify baseline scenario and demonstrate additionality"(Version 02.2). "Tools to calculate the emission factor for an electricity system" (Version 02.2) is also refereed	The Combined Tool is not required to establish the baseline scenario for capacity addition projects, as per the applied methodology. Please clarify and correct as necessary.



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		Response 2 : The tool applied for establishing the baseline is "Tool for the demonstration and assessment of additionality"(Version 05.2) The version of the tool to calculate the emission factor for the electricity system is now revised from 2.0 to 2.2.0	DOE 2nd Response : The latest version of the methodology viz; ACM 0002, version 12.1.0 and the Tool to calculate the emission factor, Version 2.2.0 has been applied by the project participant in the revised version of the PDD. Hence the CAR is closed.
CL 2 1. The spatial extent of the project boundary, as indicated in Section B.3, indicates a system boundary as well as a project boundary. Please clarify. 2. Also there is a reference to five regional grids in India, which is incorrect as per the applied version 4 of the CEA latest CEA guideline.	Refer 3.m.i of Table 1 above	The project boundary encompasses the physical extent of southern regional electricity grid which includes project site and all power plants connected physically to the electricity system and the project boundary with flow diagram is depicted in section B.2 of PDD. As per the latest CEA guidelines the Indian electricity system is divided into two regional grids, viz. NEWNE (Northern, Eastern, Western and North Eastern) and Southern Grid. The above details are	1. The description of the project boundary is done in Section B.3 of the revised PDD whereas the response indicates the same to be in Section B.2. Please clarify and correct accordingly. 2. The description is revised in Section B.3 whereas the response indicates it to be B.2. Please correct.



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		incorporated in section B.2 of PDD. Response 2 : 1. The description of the project boundary is depicted in Section B.3 of the revised PDD and not in section B.2 as indicated earlier. 2. The web hosted PDD used version 4.0 of CEA database to determine the emission factor for the grid. As per the version 4.0 of the guidelines the Indian electricity system is divided into two regional grids, viz. NEWNE (Northern, Eastern, Western and North Eastern) and Southern Grid. The above details are incorporated in Section B.3 of revised PDD.	DOE 2nd response : 1. The description of the project boundary has been corrected in Section B.3 of the revised PDD. 2. The webhosted PDD used the Version 4 of the CEA database to determine and calculate the emission factor of the grid. As per Version 4 of the CEA database, the Indian Electricity System is divided into 2 broad categories viz; the NEWNE grid and the Southern grid. The same has been incorporated in Section B.3 of the revised PDD. Hence the clarification request is closed.
CL 3 Project Participant to provide the copies of all supporting evidences for the Board decision and the chronology of events	Refer 3.o.iv of Table 1 above	All supporting evidences for board decision and chronology of events are submitted to DOE. (Ref: support chronology_001 to 027).	All the supporting evidences for the Board investment decision and the chronology of events are provided to the validation team. Hence the clarification request is



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
			closed.
CAR 6 The use of the algorithm for project emissions is incorrectly stated in Section B.6.1, as required by the methodology.	Refer 3.p.i of Table 1 above	The algorithm for $PE_y = PE_{FF,y}$ in the web hosted PDD has been revised to $PE_y = 0$ in the section B.6.1 of revised PDD.	The project emissions have been indicated to be zero in Section B.6.1, which is in line with the applied methodology which states that for most renewable energy projects. The project emissions are zero. Based on the above, the CAR is closed.
CAR 7 1. Under Section B.6.2, the parameters of operating margin and build margin are not discussed. 2. Further it is not stated whether the values are monitored ex-post or ex-ante	Refer 3.q.i of Table 1 above	The parameters of operating margin and build margin are discussed in Section B.6.2 of PDD. Fixed ex-ante approach is considered in deriving the combined margin from OM & BM	1. The parameters of operating margin and build margin are calculated based on the Version 5 of the CEA database whereas the PDD was webhosted with version 4 of the CEA database. Project participant to please correct the values of the operating margin and build margin. 2. The operating margin, build margin and the combined margin are described to be fixed ex-ante in Section B.6.2 of the revised



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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		Response 2 : 1. The values of the operating margin and build margin are now calculated based on version 4 of Central Electricity Authority (CEA) database and the same is discussed in section B.6.2 of revised PDD.	PDD. Hence ok. DOE 2nd response : 1. Since the version of the CEA database available at the time of start of validation viz; the webhosting of the PDD for global stakeholder consultation process, is Version 4 the same has been used by the project participant in the revised version of the PDD to calculate the emission factor of the grid. Based on the clarification by project participant, the CAR is closed.
CL 4 The value of the combined margin seems to be incorrect. Kindly re-verify.	Refer 3.q.ii of Table 1 above	The calculation of combined margin are recalculated and incorporated in Section B.6.4 of PDD.	The Version 5 of the CEA database is used, which cannot be used since the webhosted PDD used Version 4 of the CEA database. Further description has been revised in Section B.6.2 and not in Section B.6.4 as indicated in the project participant response.



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		<u>Response 2 :</u> The values of the combined margin is now calculated based on version 4 of CEA database and the same is discussed in section B.6.2 of revised PDD and not in Section B.6.4 as indicated in earlier response	DOE 2nd response : The values of the operating margin, build margin and the combined margin are now derived from the CEA database Version 4, which was the version available at the time of start of validation. Further the same is now discussed in Section B.6.2 of the revised PDD. Hence the clarification request is closed.
CAR 9 A transparent ex-ante calculation of project and baseline emissions is not provided in Section B.6.3 of the webhosted PDD. Also the emission reductions are not explained clearly	Refer 3.r.i of Table 1 above	A transparent ex-ante calculation of project and baseline emissions is provided in Section B.6.3 of PDD. Also the emission reductions are explained clearly in Section B.6.3 of PDD. <u>Response 2 :</u> The algorithm to calculate EG PJ,y, EFgrid,CM,y and BEy is now provided in Section B.6.3 of the revised PDD. Also the emission reductions are explained	The algorithm to calculate ERY and BEy is not provided in Section B.6.3 of the revised PDD. DOE 2nd response : The algorithm to calculate the emission reductions are now included in Section B.6.3 of the revised PDD.



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		clearly in Section B.6.3 of the revised PDD.	Hence the CAR is closed.
CL 5 The description of the years have to be revised in Section B.6.4 of the webhosted PDD	Refer 3.s of Table 1 above	The descriptions of the years are revised in Section B.6.4 of PDD.	The description of the starting year is now revised in Section B.6.4 of the PDD. Hence the clarification request is closed.
CAR 10 The description of the measurement methods is not transparent in the webhosted PDD, in Section B.7.1. E.g The metering system, accuracy class of the meters, location of the meters etc are not clearly spelt out	Refer 3.ii.b of Table 1 above	Net Power exported to the grid will be measured using energy meters at grid inter connection point. For billing purpose, the meter readings are taken every month by TNEB officials in the presence of company representatives and the readings are jointly certified. The accuracy class of energy meter installed will be +/- 0.5%. Every month these meter readings will be recorded by TNEB officials in the presence of plant personnel. The meters will be calibrated by TNEB once in two year. The above details are incorporated in section B.7.1 of PDD. <u>Response 2 :</u>	The monitoring plan is still inadequate as the procedures to deal with data uncertainties is not completely described, the metering system at site is not transparently described in Section B.7.1 etc, etc. DOE 2nd Response :



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		The procedures to deal with data uncertainties are completely described in section B.7.2 of revised PDD. Also the metering system at site, accuracy class of meters is transparently described in Section B.7.1 of revised PDD.	The monitoring plan description in Section B.7.1 and B.7.2 of the revised PDD now describes transparently the metering system at site, the monitoring and recording system, procedures to deal with data uncertainties, procedures for data apportioning etc. Hence the CAR is closed.
CL 6 The operational and management structure is not provided in a flow chart form. Please provide the same	Refer 3.u.ii of Table 1 above	The operational and management structure is provided in a flow chart form is depicted in section B.7.2 of PDD Response 2 : The responsibilities of the personnel indicated in the flow chart are now described in the PDD under Section B.7.2.	The responsibilities of the personnel indicated in the flow chart are not described in the PDD under Section B.7.2. DOE 2nd response : The roles and responsibilities of all the personnel involved in the proposed project activity have been explained in Section B.7.2 of the revised PDD. Hence the clarification request is closed.



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
CL 7 Project participant to clarify whether the person / entity indicated as the responsible entity is still valid, as indicated in Section B.8	Refer 3.v.ii of Table 1 above	Name of entity and contact information of entity are revised in section B.8 of PDD.	The description is revised to state that the entity responsible for determining the baseline is also the project participant. Hence the clarification request is closed.
CL 8 Project participant to provide the copies of the P.O placed for the project activity.	Refer 3.w.i of Table 1 above	Copies of P.O placed for the project is submitted to DOE.(Ref: support actual project_036 & 042)	All the copies of the purchase orders placed by the project participant for the project activity is provided to the validation team. Hence the clarification request is closed.
CL 9 It is not clear how this start date has been determined as stated in C.1 of the PDD.	Refer 3.w.ii of Table 1 above	The start date of project activity is 17.12.2005 which is the date of contract for sub-bundle 1 (6.25 MW) of this project activity between PP and supplier. Response 2 : The start date of the project activity is 17/12/2005 which is the date of first contract placed by the PP to WEG supplier, M/s Suzlon Energy Limited to supply the WEG for phase IV (6.25) MW of	It is still not clarified as to how the start date has been determined in the revised PDD. Further the date format is not in line with the PDD completeness guidelines. DOE 2nd response : The validation team reviewed all the purchase orders (P.O) placed by the project participant on the WEG supplier for the installation, erection and commissioning of the



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		this project activity.	proposed project activity and observed that the earliest date on which the real action has commenced was on the date of placing the first P.O by the project participant for the project activity implementation. Accordingly, 17/12/2005 has been accepted as the start date of the proposed project activity. The description is now provided in Section C.1 of the revised PDD. Hence the CL is closed.
CAR 12 It is not stated whether the project activity will use a renewable or fixed crediting period in Section C.2 of the PDD.	Refer 3.y of Table 1 above	The project activity will use a fixed crediting period and the same is incorporated in section C.2 of the PDD.	The description that the project activity would use a fixed crediting period is stated in Section C.2 of the revised PDD. Hence the CAR is closed.
CL 10 The reference to the notification as per the Ministry of Environment and Forests is not indicated in the PDD, under Section D.1	Refer 3.ff of Table 1 above	The reference to the notification as per the Ministry of Environment and Forests is indicated in Section D.1 of PDD.	The reference to the notification as a web link of the site has been provided as a footnote in Section D.1 of the revised PDD. Hence the clarification request is



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
			closed.
CL 11 However the project activity is also located at another village. Project participant to clarify as to how the stakeholder at the other village viz Alagiapandiyapuram, was conducted	Refer 3.gg.i of Table 1 above	The project activity is energy generation from 13.75 MW grid connected wind energy project comprising Sub bundle 1: 6.25 MW wind farm in Alagiapandiyapuram village and Sub bundle 2: 7.5 MW wind farm at Deverkulam village. Both the villages are adjacent to each other. Moreover, it is evident from the attendance sheet of stakeholder meet (For Eg Sl. No 2) that persons from Alagiapandiyapuram village also attended the meeting.	The validation team during the site visit noted that the 2 villages of the project activity viz; Alagiapandiyapuram and Devarkulam are close to each other and only a road separates the two villages. Further the validation team reviewed the minutes of the meeting of the local stakeholder consultation conducted by the project participant and observed that people from both villages have attended the same. Also the validation team during the site visit, also personally interacted with representatives of both the villages and confirms that the local population from both the villages attended the stakeholder meeting conducted by the project participant. Hence the clarification request is closed.
CAR 13	Refer	Identification of the local stakeholders who	The identification of all the local



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
The identification of the local stakeholders are provided in Section E.1 instead of E.2 in the webhosted PDD	3.hh.i of Table 1 above	made comments are provided in Section E.2 of PDD	stakeholders which made comments during the meeting are now described in Section E.2 of the revised PDD. Hence the CAR is closed.
CL 12 The email id indicated in Annex 1 of the PDD is erroneous.	Refer 3.jj.ii of Table 1 above	The corrected email id is indicated in Annex 1 of the PDD	The correct email id is now described in Annex 1 of the revised PDD. Hence the clarification request is closed.
CL 13 There is an incorrect description of Annex 5 provided in the PDD. The same needs to be corrected as "Appendix"	Refer 3.mm of Table 1 above	Necessary correction is made in PDD.	The additional descriptions have been indicated as Appendices in the revised PDD. Hence the clarification request is closed.
CL 14 1. However the registration number of the CDM project activity that is registered is not provided in Section A.2 of the webhosted PDD. 2. Further it is not clear as to how many numbers of wind turbines are located in each of the 2 villages and the total capacity at each village.	Refer 4.a of Table 1 above	1. The registration number of the CDM project activity that is registered is provided in section A.2 of the PDD. 2. Numbers of wind turbines located in each of the 2 villages and the total capacity at each village is mentioned in section A.2 of the PDD.	1. The CDM registration for the 2 projects undertaken by the project participant is now provided in Section A.2 of the revised PDD. 2. The number of wind turbines in the 2 villages are now provided separately in 2 tables along with



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
			the capacities in each of these villages, in Section A.2 of the revised PDD. Based on the above observations, the clarification request is closed.
CL 15 However it was observed that the Project Participant has other installations in wind / other renewable power in other regions of the country. In light of the same, Project Participant to clarify as to why the proposed project activity should not be considered as a capacity addition to the existing wind power projects.	Refer 4.b.a.i of table 1 above	The project activity is energy generation from 13.75 MW grid connected wind energy project (comprising Sub bundle 1: 6.25 MW and Sub bundle 2: 7.5 MW) and it is the capacity addition to existing 13.75 MW in the same area, out of that 6.75 MW was registered with UNFCCC (ref no: 1053) as CDM project activity. The present project activity “13.75 MW Grid connected Wind Electricity generation Project by Tamil Nadu Newsprints and Papers Limited” is a capacity addition to an existing renewable energy power plant which uses Option 2: on page 11/20 of methodology ACM0002/version 12.1.0 to calculate the parameter EG_{PJy} <u>Response 2 :</u>	Project participant to justify as to how the baseline emissions are calculated in light of the response provided that the proposed project activity is a capacity addition project.



VALIDATION REPORT

Draft report clarifications and action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		The project activity is 13.75 MW wind electricity project comprising of Phase IV (6.25MW) and Phase V (7.5 MW) and it is a capacity addition to existing phase I (7.0 MW), Phase II (3.0 MW) and Phase III (3.75 MW) in the same area. However, in line with base line emission description under para C, page 10/20 of the applied methodology, in the case of wind power plants, it is assumed that the addition of new capacity does not significantly affect the electricity generated by the existing plants. In such a case the methodology requires the electricity feed to the grid could be directly metered (viz. proposed project activity). Since the electricity supplied to the grid by the individual wind turbines of the proposed project activity can be directly metered and the same can be used to determine EG_{PJy}. Further the PP is using option 2, equation 10 to determine the EG_{PJy}.	DOE 2nd response : The Section A.2 of the revised PDD now clearly indicates the prior renewable energy project installations done by the project participant. The validation team noted that the project participant has prior installations in wind project under Phase I, II & III. The proposed project activity is under Phase IV & V. Since the earlier Phase II (3MW) and Phase III (3.75MW) are registered under CDM as a single project activity (Registration No. 1053). Since the earlier wind projects are located in the same site as that of the proposed project activity, the same is considered as a capacity addition to the earlier existing wind projects. However in line with the applied methodology viz; ACM 0002, version 12.1.0, since the addition of capacity to wind power projects do not have



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
			any significant effect on the electricity, the project participant has used Option 2 (referred on page 10 of the methodology) to determine the net electricity supplied to the grid. Based on the above justification, the CL is closed.
CL 16 The justification for the Project Activity as indicated in Section B.2 of the PDD doesn't indicate the case of capacity addition. All the evidences submitted to the validation team like DPR, note to the Board etc indicate the Project Activity to be an expansion of wind farm.	Refer 4.d.i of Table 1 above	Necessary corrections are made in section B.2 of the PDD.	The justification for all the applicability conditions of the applied methodology is now provided considering the project activity as a capacity addition, in Section B.2 of the revised PDD. Hence the clarification request is closed.



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
CL 17 Justification of the applicability conditions of the tools referred are not provided	Refer 4.h of Table 1 above	Justification of the applicability conditions of the tools referred is provided in section B.2 of the PDD. Response 2: As per version 2.1.0 of “Tool to calculate the emission factor for an electricity system”, which can be used to calculate the baseline emissions for the project activities that substitute grid electricity. The proposed project activity supply electricity to the regional grid therefore the applicability condition met. The same has been justified as applicable condition in Section B.2 of the revised PDD.	The justification for the applicability condition of the Tool to calculate the emission factor is not provided. DOE 2nd response : The applicability condition of the tool to calculate the emission factor has now been justified in Section B.2 of the revised PDD. Hence the clarification request is closed.
CAR 14 Relevant policies and circumstances have not been correctly identified in the PDD.	Refer 4.l of Table 1 above	Necessary information are provided in the section B.4 of the revised PDD	The Section B.4 of the revised PDD indicates that there are no relevant national policies which mandate the installation of the project activity in the host country viz; India. Hence the CAR is closed.
CL 18 Please provide the copy of the CER sheet	Refer 5.e.b.iv of Table 1	Copy of CER sheet is provided to DOE.(Ref: XL sheet_001)	The copy of the CER sheet is provided to the validation team. Hence the clarification request is



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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
	above		closed.
CAR 15 High capital cost and technical barriers are discussed under barrier analysis. However the barriers discussed are not specific to the Project Participant alone but are also faced by other investors. Hence it is not proven as to how the barriers are applicable to the proposed project activity.	Refer 6.c.iii of Table 1 above	The discussion in barrier analysis is deleted in the revised PDD. The additionality is discussed through investment analysis.	The Project Participant has deleted the discussion on barrier analysis in the revised PDD and instead is demonstrating additionality only through investment analysis (IRR analysis). Hence the CAR is closed.
CAR 16 Common practice analysis is described in the PDD. However the following is not clear viz; 1. The reason for considering the geographical scope for conducting common practice analysis is limited to the State of Tamil Nadu. 2. The criteria defined by the Project Participant for similar scale projects, in line with the requirements described in sub-step 4 (a) of the additionality tool is not clear. 3. The list of wind power projects that are similar to the proposed CDM project activity is not provided. 4. Further, in case, similar wind power projects are observed, then it is not clear what are the essential differences between these project ts and the proposed project activity.	Refer 6.c.iv of Table 1 above	The proposed CDM project activity under consideration is a wind farm project activity with installed capacity of 13.75 MW in the state of Tamil Nadu, India. Therefore, similar project activity is defined as any project activity with size between 13-25 MW wind farm project, set up in the state of Tamil Nadu after 2001 to March 2007 (i.e. prior to the last commissioning date of sub-bundle 2 of the project activity). The list of wind power projects that are similar to the proposed CDM project	The common practice analysis described in the PDD is still not clear. E.g Criteria for defining small scale projects is not clearly defined etc.



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Draft report clarifications and action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		activity is provided to DOE. Similar activities are not widely observed or commonly carried and almost all projects have been undertaken as CDM projects. The only non CDM wind farm project in this region of project proponent is viz. Rajapalayam Mills Ltd. This project activity is implemented for the wheeling purpose and it cannot be compared with present project.(Ref: support common practice_051 & 052) <u>Response 2:</u> The proposed CDM project activity is a wind farm project activity with installed capacity of 13.75 MW in the state of Tamil Nadu, India. The region considered for common practice analysis is limited to the state of Tamil Nadu. This is because the regulatory regime and tariff policies are quite different in different state of India as defined by the respective state regulatory commission. For example, the regulatory commission of some of the states provide	<u>DOE 2nd Response :</u> The validation team noted that the revised PDD now transparently describes the criteria for defining similar scale projects as projects that are commissioned after September 2001 upto 31/03/2007, which is the date of commissioning of the last WTG of the project activity bundle. The wind turbines prior to September 2001 are not considered due to a different



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		tax benefit and other benefits whereas the same benefit may not be applicable to wind farm developers in other states. Hence common practice analysis is restricted to the state of Tamil Nadu. The wind power project installed prior to Sep 2001 was governed by Ministry of New and Renewable Energy (MNES) policy which offered an annual escalation of 5 % every year over the base year. However MNES policy which is applicable to all states of India was superseded by the regional state regulatory order. Project commissioned after Sep 2001 in Tamil Nadu are governed by Tamil Nadu Electricity Regulatory Commission (TNERC) order 2001. The TNERC order 2001 offered a fixed tariff without escalations. Hence project prior to sep 2001 is not considered for common practice analysis The comparison of similar projects are limited to wind power projects that are commissioned upto 31.03.2007. This is	regulatory environment w.r.t. tariff escalation and tax benefits which were subsequently withdrawn once the State Regulatory agency viz; TNERC was formed in September 2001. Further justification to limiting the analysis to the State of TamilNadu has now been detailed in the PDD. Each state in India is governed by separate regulatory tariff orders defined by the respective states. Each state provides various schemes and incentives for wind energy generators which may or may not be applicable to other states. Hence the validation team accepted the justification to limit the common practice analysis to the State of TamilNadu. The detailed list of all similar projects are now provided in the PDD. A total of 21 projects are observed to be similar of which 20 projects are under CDM.



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		because the last machine of this project activity was commissioned on 29.03.2007. The list of wind power projects that are similar to the proposed CDM project activity is provided in Section B.5 of revised PDD	Appropriate justification has been provided to exclude one project from the analysis, due to lack of adequate data in public domain. Based on the above observations, the CAR is closed.
CL 19 The outcome of none of the steps of the additionality tool are specified in the webhosted PDD.	Refer 6.j of Table 1 above	The outcome of all the steps as required by the additionality tool are incorporated in Section B.5 of revised PDD.	The outcome of all the steps as per the additionality tool is now described in Section B.5 of the revised PDD. Hence the clarification request is closed.
CAR 17 As per the information provided by the Project Participant, the following procedure is followed for getting clearances from the Board viz; A note is prepared and submitted by the technical team of the factory unit to the Board and the Board decides to go ahead / not ahead with the Project Activity. Project Participant to provide the copy of the note / proposal submitted to the Board for phase 4 & 5 and also provide evidences of all the	Refer a.b of Table 1 above	Note and minutes of Board decision is provided to DOE.(Ref: support chronology_001 & 002) Response 2: For any new project investment the Project Management Division of PP prepares the financial working of the project and compiles the same in the form of board note which is then submitted to Board of	The response provided by the Project Participant is cryptic and is not transparently describing the process of investment decisions taken by the Board. DOE 2nd Response : The Project Participant has submitted the copy of the board notes and also copy of the minutes of the board meeting for both the



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communication between the Board and the project technical team. Also provide the copy of the Board minutes w.r.t these notes submitted. The overall process of Board decision is not clear for the Project Activity		Directors for taking the investment decision. In case of proposed project activity separate board note were submitted to Board of Directors for taking the investment decision for both Phase 4 as well as Phase 5. The copy of board notes and minutes of Board of Directors is submitted to validation team. (Ref: support chronology_001 & 002)	phases of the project activity viz; Phase 4 (sub-bundle 1) & Phase V (sub-bundle 2). The validation team also interviewed the Deputy Managing Director (DMD) of the organization to understand the overall process of decision making in the organization. The discussion indicated that the procedure indicated in the Project Participant response is followed in toto by the Project Participant. Hence, based on the review of documents and also the personal interview of the validation team with a member of the top management, the process of the investment decision is clarified. Hence the CAR is closed.
CL 20 Project Participant to provide supporting evidence regarding the awareness of CDM prior to the project activity start date. Also state the same clearly in the PDD	Refer a.h.ii of table 1 above	The project proponent is aware of the benefits from CDM prior to project activity start date due to the fact that they were in the process of registering the project(UNFCCC Ref.No:124) under CDM.	The validation team reviewed the earlier project activity of the Project Participant, with UNFCCC registration number 0124, and



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		The same is clearly stated in Section A.2 of revised PDD.	observed that the Project Participant had already taken actions for CDM registration for the earlier project. Hence the validation team concluded that the Project Participant was aware of CDM benefits, prior to the proposed project activity start date. Based on the above observation, the clarification request is closed.
CL 21 The copy of the CDM Board resolution dated 22.08.2005 for both the phases (i.e phase 4 & 5), as indicated in the webhosted PDD was not observed during the site visit. Please provide a copy of the same. Hence assessment of CDM consideration is not complete	Refer a.h.ii.a of table 1 above	The investment decision for the proposed activity was taken separately for phase 4 (sub-bundle 1) and phase 5 (sub-bundle 2). The investment decision for phase 4 (sub-bundle 1) was taken on 22/08/2005 and the investment decision for Phase 5 (Sub-bundle II) was taken on 22/11/2006. The copies of board notes and minutes of Board of Directors are submitted to validation team. (Ref: support chronology_001 & 002)	The Board resolution for the project activity took place in 2 phases viz Phase 4 & Phase 5. Phase 4 was the decision taken for Sub-bundle I on 22/08/2005 and the investment decision for Phase 5 (Sub-bundle II) was taken on 22/11/2006. The copies of the board notes and the board resolution are provided to the validation team. Based on the above, the clarification request is closed.



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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
CAR 18 The CDM chronology of events is incompletely described. E.g 1. Please forward all the original mails received from Synergy Global, as indicated in the CDM chronology of events. 2. The date of note issued for newspaper advertisement for rendering CDM services is incorrectly stated in the PDD. 3. Provide the copies of all the evidences as indicated in the chronology in the PDD. 4. The work order for ITCOT consultancy services does not have the signatures of the consultant. 5. The date of newspaper advt for local stakeholder meeting is not indicated in the PDD. Project Participant to provide a complete chronology of events along with all supporting evidences. The time period for assessing real and continuing actions were taken for securing CDM status as per EB 49 guideline is not adequately described.	Refer a.h.iii of Table 1 above	1.All the original mails received from Synergy Global, as indicated in the CDM chronology of events. Is forwarded to validation team. 2.The date of note issued to newspaper advertisement for rendering CDM services is corrected in section B.5 of PDD. 3.The support documents chronology of events of the project activities are furnished to DOE. (Ref : support chronology 001 to 027) 5.The date of newspaper advertisement for local stakeholder meeting is indicated in section B.5 of PDD. The CDM chronology i.e., from the date of investment decision to the date of site visit by validator are described in section B.5 of PDD. Response 2: The copy of work order of ITCOT consultancy with the signature ITCOT is provided to DOE.(Ref: Support_21/03/2011_057)	The detailed chronology of events is now described in Section B.5 of the PDD. All supporting evidences are also provided to the validation team. However the work order of ITCOT consultancy does not bear the signature of the company. Also the chronology of events does not mention anything on the clarification sought by the Project Participant to the CDM EB. DOE 2nd response : The copy of the work order of the CDM consultant viz; ITCOT has been provided to the validation team. The team observed that the



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Hence the process of the chronology of events could not be assessed in complete.		The date of clarification requested by PP to CDM and the clarification received from CDM EB to PP are incorporated in Section B.5 of PDD	work order is signed by both the entities. Further the detailed chronology of events described in Section B.5 of the revised PDD indicate the dates of seeking clarification from the CDM EB regarding the applicability conditions of ACM 0002, Version 10 and the date of receiving response from CDM EB on the same. Hence the CAR is closed.
CL 22 1. The copy of the proposal given by Suzlon, as indicated in the note for Board Meeting No 167 to be provided. Also provide the copy of the proposal sent by E&Y. 2. The contract agreement between Project Proponent and Suzlon dated 17.12.2005, for Phase 4 of the project activity (i.e at Alagiapandipuram) indicates of a tender dated 13.05.05. Project Proponent to provide the copies of the tender documents indicated under "Reference" on page 1 of the contract.	Refer a.a of Table 1 above	1. The copy of the proposal given by Suzlon, as indicated in the note for Board Meeting No 167 is prior to the investment decision of this project activity. Also copy of proposal sent by E&Y is provided to the validation team. 2. The copy of the tender documents is provided to the validation team. (Ref: support others _049) 3. Also the copies of the same for Devarkulam contract agreement with M/s Suzlon.is provided to DOE.(Ref:	1. The copies of the proposals by Suzlon and E&Y are provided to the validation team. 2. The copy of the tender document dated 13/05/2005 is made available to the validation team. 3. Copies of the agreement with M/s Suzlon Limited is provided to the validation team. Based on the above, the clarification request is closed.



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3. Similarly provide the copies of the same for Devarkulam contract agreement with M/s Suzlon.		support others _050)	
CAR 19 In the investment analysis discussed in the PDD, the following needs further justification viz; 1. Provide the copy of the IRR excel sheet. 2. Provide the copy of the bank loan application letter (of all the banks). Also provide the copy of the loan sanction letter and also the loan agreement copies. 3. The unit of energy used is different at different places. E.g kWh, MWh etc. 4. The source of the assumptions is stated to be from the DPR. However it is not clear which entity has prepared the DPR and for what purpose? 5. The project cost is not indicated for either the Alagiapandipuram or Devarkulam project in the PDD 6. How is the repair and maintenance cost different from the O&M costs, as indicated in the DPR?? Further what is the basis for the Repair and maintenance values is not clear. 7. The O&M cost is indicated to be INR 11 lac per WEG/annum whereas the PDD indicates		1. The copy of the IRR excel sheet is provided to DOE. (Ref: XL sheet_003 & 004) 2. Copy of the bank loan application letters (of all the banks) and the copy of the loan sanction letters/agreements are provided to DOE.(Ref: support IRR_035 and support others_048) 3. The unit of energy used across the revised PDD is MWh uniformly. 4. The DPR was prepared much later than the investment decision of PP. The sources of assumption for project cost and O & M are based on offer from supplier which was available with PP at the time of investment decision. The assumption for tariff for phase 4 is considered from signed Power Purchase Agreement (PPA) between PP & State	1. The copy of the IRR excel sheet is made available to the validation team. 2. The copies of the bank application letter and the bank sanction letters are provided to the validation team. 3. The unit of energy used across the revised PDD is changed to MWh uniformly. 4. The validation team noted that the DPR was prepared by the CDM consultant for the purpose of calculating the IRR for CDM purpose only. The Project Participant did not depend on the values indicated in the DPR at the time of investment decision; rather the investment decision was made on the values as indicated in the offer



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the cost to be INR 5.50 million from 3rd year onwards. Similar discrepancies are also observed for insurance costs. 8. The sensitivity analysis has considered only the parameters of the project cost and generation. Sensitivity analysis is not conducted for the unit rate of power (tariff) as the unit rates of power for both the phases 4 & 5 have changed.		power utility for a previous project. The assumption for tariff for phase 5 is considered from TNERC order No:3 dated 15.05.2006. These assumption are incorporated in Section B.5 of revised PDD The offer letter from supplier for both phase 4 & phase 5, PPA and TNERC order NO:3 dated 15.05.2006 is provided to DOE.(Ref: support IRR_030, 034, 029 & 033) 5. The project cost for both the phases viz; Phase IV & Phase V is incorporated in Section B.5 of PDD revised PDD. The same is considered in the revised IRR excel sheet. (Ref: XL sheet_003 & 004) 6. The cost of repair and maintenance cost is deleted in the revised PDD and in the calculation of IRR. 7. The O&M cost and the insurance costs are now corrected in the revised PDD and in the calculation of IRR.	letter of the supplier. The source of assumption for project cost, O&M cost is taken from the offer letter of the suppliers, for PLF the bank letter is considered and for the parameter of tariff, the previous tariff of an existing wind power project is considered. Hence ok. 5. The project cost for both the phases viz; Phase IV & Phase V is now indicated in the revised PDD as well as in the IRR excel sheet. 6. The repair and maintenance cost is deleted from the revised IRR working. 7. The O&M cost and the insurance costs are now corrected in the revised IRR working excel sheet. 8. Sensitivity analysis is conducted on the parameters of tariff, O&M cost and PLF.



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		8.Sensitivity analysis is carried out with respect to PLF, tariff and O & M and it is compared with bench mark analysis and it is incorporated in Section B.5 of PDD revised PDD and in the calculation of IRR.	Based on the above observations, the CAR is closed.
CAR 20 The salvage value of the project activity components is not considered in the IRR working.	Refer c.h of Table 1 above	The salvage value of the project activity components is considered in the revised IRR working submitted to DOE. (Ref: XL sheet_003 & 004)	The salvage value of the project activity equipments are considered in the revised IRR excel sheet in line with the accounting principles of India. Hence the CAR is closed.
CAR 21 1. There is no clarity as to from where the values indicated in the DPR taken from? 2. The term loan agreement with State bank of Patiala and Syndicate Bank indicates of a bank application letter dated 25.08.2005 and also refers to 2 letters dated 26.09.2005 and 03.10.2005. Provide copies of the same.		1. The data source for the assumption of project cost and O & M cost is taken from the offer letter of the supplier. 2. The letter dated 26/09/2005 and 03/10/2005 are term loan sanction letter of Syndicate bank and State Bank of Patiala. The copy of term loan sanction letter is submitted to validation team. (Ref: support IRR_035)	1. The validation team noted that the DPR was prepared by the CDM consultant for the purpose of calculating the IRR for CDM purpose only. The Project Participant did not depend on the values indicated in the DPR at the time of investment decision, rather the investment decision was made on the values as indicated in the offer



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			letter of the supplier. 2. The term loan agreement copies of all the banks in the project activity have been provided by the Project Participant. Based on the above observations, the CAR is closed.
CL 23 Project participant to provide the benchmarks that have been used in renewable energy projects for the previous 3 years, with supporting evidences	Refer c.hh.ii of Table 1 above	Calculations of bench mark that have been used in wind power projects for the previous 3 years, with supporting evidences are provided to DOE. (Ref: XL sheet_002) <u>Response 2:</u> The earlier project in renewable energy sector by PP was 6.75 MW wind project (phase 2 & 3) and Methane Extraction project. Both of which are registered with CDM. The bench mark used for the registered wind project (UNFCCC No: 1053) was 16% (based on Central Electricity Regulatory Commission, petition no 67/2003, order hearing dated 12.11.2003, in matter of determination of	The supporting document provided does not indicate the benchmark used for the previous projects. Project Participant to clearly indicate the benchmarks used for the prior projects. DOE 2nd response : The validation team noted that the benchmark used by the Project Participant in the previous 3 years was for the earlier wind project and the methane extraction project, both of which are registered with CDM. The validation team observed that while the benchmark used for the wind power project was 16% based on the CERC



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		terms and conditions of tariff.) whereas additionality for Methane Extraction project (UNFCCC Ref No: 124) was discussed on technological back ground.	guidelines, the additionality for the methane extraction project was done based on technological barrier. Hence the CL is closed.
CL 24 The project participant has considered sensitivity analysis on the parameters of project cost and generation only, in the webhosted PDD. However the following points to be clarified by the project participant viz; 1. Justification for why the project cost is subjected to a variation of only 10% is not clear. 2. Similarly the justification for subjecting the generation to only 10% variation is not clear. 3. The justification provided by the project participant for not subjecting the tariff to a sensitivity analysis is not acceptable, as the validation team has observed that the tariff in Tamil Nadu increases over a period of time. 4. Project participant to justify as to why the parameter of O&M cost is not subjected to a sensitivity analysis.	Refer c.II of Table 1 above	1. The actual project cost of this project activity is INR 688.08 (Ref: support actual project_036, 037, 042 & 043). The variation in the actual project cost based on the contract and purchase order has compared to the project cost indicted in the offer letter by the WEG supplier is 1.6 % (Ref: XL sheet_006). However the PP has conservatively applied sensitivity of +/- 5 % on the project cost in the revised calculation of IRR (Ref: XL sheet_003 & 004) 2. PLF has been subjected to a sensitivity analysis of 10% only since the base case PLF considered is 25.5 based on the actual generation data. Further the TNERC Order 2006 indicates the average PLF for the Shencotta pass as 24.96 and	1. The actual project cost was verified from the P.O / Work Order placed by the Project Participant on the Wind Turbine Generator supplier for both the sub-bundles of the project activity. The actual project costs were compared with the cost indicated in the initial offer by Suzlon for both the phases separately and observed that the percentage difference between the two values for sub-bundle 1 is 0.79% and for sub-bundle 2 is 1.53% Hence the validation team accepted the sensitivity of only 5 % subjected for the parameter of project cost, since the project cost is based on the



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		for the entire state of Tamil Nadu as 25.29. The data of Shencotta pass is considered as the project WEG's are located in this pass. A sensitivity of 10% over 25.5 would yield a PLF of 28.05 which is higher than the value of 24.96 & 25.29. Hence sensitivity range can be considered appropriate. 3. The tariff for phase 4 of this project activity as per the PPA signed with TNEB is Rs 2.70 per kwh, further the tariff as of present is INR 2.75/kwh. The actual tariff for phase 5 of this project activity is same as considered at the time of investment decision. However the parameter of tariff has been subjected to +/- 10 % over the base case in the revised calculation of IRR. (Ref: XL sheet_003 & 004) 4. The sensitivity for the parameter O & M cost is conducted at +/- 10%. The actual O & M cost as per O & M agreements between PP and M/s Suzlon for Phase 4 & phase 5 was compared with O & M cost indicated in the intial offer by the supplier M/s. Suzlon and it is observed that %	final purchase order cost which the Project Participant has actually incurred and is not expected to change with time. 2. The validation team agrees with the +10 % variation subjected on PLF since the PLF stated by the TNERC Order 2006, which was the applicable and available at the time of investment decision, indicates the average PLF in the Shencottah pass (wherein the project activity wind turbines operate) to be 24.96 for large machines viz; upto 1650 kW. The 10% variation subjected by the Project Participant over the base case PLF of 25.5 % results in a sensitivity analysis for PLF at 28.05% which is higher than the PLF value of 24.96 as indicated in the TNERC Order. The validation team further noted that the average PLF for the entire State of TamilNadu was 25.29 as indicated in the



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		difference is 1.58 % for phase 4 where as for phase 5 there is no difference. However the PP has conservatively applied sensitivity of +/- 10 % on the O & M cost in the revised calculation of IRR. (Ref: XL sheet_003 & 004) The revised sensitivity analysis is incorporated in section B.5 of PDD.	TNERC Order of 2006, however the sensitivity analysis is conducted to cover the PLF value of 28.05. Hence the validation team confirms that the +10% sensitivity on PLF value is adequate. 3. The validation team reviewed the PPA's for both the phases and observed the tariff to be INR 2.70/kWh for both the phases. Further review of the latest invoices raised by the Project Participant on TNEB indicates the tariff to be INR 2.75 & 2.90 /kWh respectively for phase I & II. Hence the validation team accepted the tariff being subjected to a sensitivity of +/- 10 % in the revised IRR working. 4. The O&M cost is subjected to a sensitivity of +/- 10 % which is conservative as the difference in the actual O&M cost and the O&M cost indicated in the initial



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			offer is only around 1.5 %. Based on the above clarifications and discussions, the CL is closed.
CL 25 The plant load factor has been based on the financing bank letter provided to the project participant. Project participant to provide the copies of the same.	Refer c.qq.i of Table 1 above	The letter from the 4 banks from where the PP is financing the project activity is provided to DOE in support of PLF assumed in calculation of IRR(Ref: Support IRR 028 & 032)	The copy of the letter from the 4 banks (2 banks each for sub-bundle 1 & sub-bundle 1) in support of PLF is provided by the Project Participant to the validation team. Hence the clarification request is closed.
CAR 22 The PDD under Section B.7.1 and B.7.2 doesn't address the following points namely; 1. Procedure for data uncertainties is not addressed. 2. Procedure for data apportioning are not addressed. 3. It is indicated that the meters are installed at the sub-stations and that power exported would be measured using these meters. Kindly clarify and confirm whether the measuring / recording of power export takes place at the sub-station. 4. Frequency for calibration of meters is not	Refer 7.d of Table 1 above	Procedure for data uncertainties is addressed in section B.7.2 of PDD Procedure for data apportioning are addressed in section B.7.2 of PDD The power exported will be measured using the meters installed at switchyard. Necessary corrections are made in section B.7.2 of PDD The meters will be calibrated once in three years. The same is mentioned in section B.7.2 of PDD. The parameter of EG_{import} would not be used in the overall emission reduction calculations and the same is removed from	The monitoring plan is still inadequate as the procedures to deal with data uncertainties is not completely described, the metering system at site is not transparently described in Section B.7.1 etc, etc.



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indicated. 5. It is not clear as to where the parameter of EG_{import} would be used in the overall emission reduction calculations. 6. Why is the permissible variation in main and check meters only 0.3 % whereas the accuracy class of the meters is 0.5 %. 7. There is a log book maintained at site which record the readings taken on the monthly basis from the main meters and signed by the TNEB and Project Participant representative. However the monitoring plan do not indicate the same. 8. There are check meters and standby meters installed at site, apart from the main meter. However the utility of the check and standby meters, in the overall monitoring of CER's, are not described in the PDD. 9. The organizational structure of the Project Participant as indicated in the PDD does not match with the actual structure at the site. E.g. PDD indicates of a project manager at site whereas there is none at site.¹		PDD Readings are taken from main meter only and the same is given in section B.7.2 of PDD The recording of log book by TNEB and PP representative is included in section B.7.2 of PDD. At present there are only two meters installed at project site. One is main and the other is check meter. Readings are taken from main meter only. The same is described in section B.7.2 of PDD. Site Incharge is available at the location of the project site to look into the operation of the wind mills. The project manager is replaced with Site Manager/Incharge in section B.7.2 of PDD. Response 2: The procedures to deal with data uncertainties are completely described in Section B.7.2 of revised PDD. The metering system at site is transparently described in Section B.7.1 of revised PDD	DOE 2nd response : The monitoring plan description in Section B.7.1 and B.7.2 of the revised PDD now describes transparently the metering system at site, the monitoring and recording system, organizational structure at site, procedures to deal



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			with data uncertainties, procedures for data apportioning etc. Hence the CAR is closed.
CAR 23 The detailed flow of information of the data, used for emission reduction calculations, is not described in the PDD	Refer 7.m.i of Table 1 above	The detailed flow of information of the data, used for emission reduction calculations, is now described in the PDD. <u>Response 2:</u> The detailed flow of data / information from M/s Suzlon to the Project Participant is described transparently in Section B.7.2 of the revised PDD. Also the procedure for review of the data is stated in Section B.7.2 of the revised PDD.	The detailed flow of data / information from Suzlon to the Project Participant is not described transparently in Section B.7.2 of the revised PDD. E.g How is the DGR transmitted from Suzlon to the Project Participant and how the review of the DGR is conducted etc, etc is not stated. DOE 2nd response : The detailed flow of information of the data from the O&M contractor of the project activity (Suzlon Infrastructure Services Ltd) to the Project Participant is now described clearly in the revised version of the PDD under Section B.7.2. Hence the CAR is closed.

**APPENDIX – B: Validation of Global Stakeholder Comments**

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
1.	Sonika on behalf of EcoSol		The new tariff is applicable for the present project should be more and Rs 2.70/unit for all of the turbines, since the earlier tariff was Rs 2.90/unit. Therefore, PPA for each of the commissioned turbine should be checked.	Power Purchase Agreements between PP and state power utility are submitted to validation team. (Ref: support Chronology_005 & 007). The tariff is Rs. 2.70/unit of kwh for all of the turbines as per the agreement. However, the tariff of Rs. 2.90/unit of kwh is considered for phase 5 and the same is incorporated in Section B.5 of revised PDD and in the revised IRR calculation. (Ref: XL sheet_003 & 004). The actual tariff for phase 4 of this project activity is Rs 2.75 per kwh with effect from 30/03/2006 as against the tariff considered of Rs 2.70 per kwh at the time of investment decision. The actual tariff for phase 5 of this project activity is same as considered at the time of investment decision (Ref: support actual project_041).	The validation team reviewed the PPA for both the phases of the project activity viz; Phase I & II and observed that the tariff for Phase I & Phase II is indicated to be INR 2.70/kwH. However the Project Participant has received INR 2.75/kwH for Phase I and INR 2.90/kwH for Phase II from TNEB. Based on this information, the Project Participant has assumed a tariff of INR 2.70/kwH for Phase I, which was available at the time of investment decision and further subjected it a sensitivity analysis of +10%. Similarly for Phase II, the tariff of INR 2.90.kwH was further subjected to a sensitivity analysis of +10%



VALIDATION REPORT

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
					and in both the cases observed the IRR to be within the benchmark. Hence the justification is accepted by the validation team.



VALIDATION REPORT

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
2.	Sonika on behalf of EcoSol		What is the capital structure of the project? What IRR was being presented to bank while requesting for the loan? Is it 7.37 and 6.03%? No bank would have landed them any money, therefore those documents should also be checked for realistic financial figures.	The capital cost of the project is incorporated in the revised PDD based on the offer given by the supplier (Ref: support IRR_030 & 034). Copies of the bank loan application letters (of all the banks) and the copy of the loan sanction letters/agreements are submitted to validation team (Ref: support IRR_035 and support others_048).	The capital cost structure of the project activity is provided to the validation team and also included in the IRR sheet. The copy of the bank loan application document does not specifically describe a IRR. However the final IRR working submitted is based on the latest guidelines of the CDM EB. Hence the same is accepted by the validation team.
3.	Sonika on behalf of EcoSol		When the loan for the project has been sanctioned at a rate much lower than the prevailing PLR than, PLR cannot be considered as the benchmark. Also, how they have been able to get the loan at a rate much below of the PLR?	The relevant benchmark chosen is also line with "Guideline on the assessment of investment analysis", EB 51, Annex 58, version 3.1, guidance No. 12, which states "In cases where a benchmark approach is used the applied benchmark shall be appropriate to the type of IRR calculated. Local commercial lending rates or weighted average costs of capital (WACC) are appropriate benchmarks for a project IRR. Required/expected returns on equity	The validation team noted that in line with EB 61 guidelines on investment analysis, the Project Participant has chosen the local commercial lending rates in the host country as the benchmark for the project IRR. The PLR published by the Reserve Bank of India is from a reliable government source and available in



VALIDATION REPORT

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
.				are appropriate benchmarks for equity IRR. Benchmarks supplied by relevant national authorities are also appropriate if the DOE can validate that they are applicable to the project activity and the type of IRR calculation presented". The prime lending rate (PLR) published by Reserve Bank of India on its statistical database which was available during the time of decision making has been selected as the appropriate benchmark for the individual project activity. The PLR is an official and publicly available financial data that provides the best approximation of the cost of debt at the time when the investment decision was made and it is the rate offered by Indian Banks to all the high credit worthy borrowers. The selected benchmark is in line with the requirement as per the "Tool for demonstration and assessment of additionality" as the PLR is publicly available and used for making investment decisions. The selected	public domain. Further this information was available to the Board at the time of investment decision. Financing institutions in India look at the credit-worthiness of the debtors, past performance of the company and debt repayment capabilities of the organization while lending. In case all the above criteria are met by the organization, the lending institutions can reduce the interest rates from such high net investors. Hence the Project Participant has been able to get a loan at a rate lower than the prevailing PLR. Hence the same is accepted by the validation team and closed.



VALIDATION REPORT

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
.				benchmark is also in accordance with the EB guidance on the assessment of investment analysis, EB 51, Annex 58, version 3.1, guidance No. 12; which states that "local commercial lending rates" is an "appropriate benchmark for a project IRR". During lending money to any projects, banks look clients repayment performance history , credit rating of the company etc... TNPL has high credit rating and performance history which makes banks lend and low interest rate.	



VALIDATION REPORT

Sr. No	Details of the commenter	Date of the comment	Comment	Response by the project participants	Explanation on how account is taken by the DOE
4.	Sonika on behalf of EcoSol		What about consideration of tax benefit in the project financials?	The tax benefit is considered as cash inflows in the project financials (Ref: XL sheet_003 & 004).	The revised IRR sheet takes into consideration all tax benefits that accrue from this project activity. The same is also accepted and approved by the financial expert engaged by the DOE. Hence the same is closed.
5.	Sonika on behalf of EcoSol		For such an early started project in 2006, all the documents related with CDM consideration, continuity of CDM action should be analyzed critically.	All supporting evidences for board decision (CDM consideration) and chronology of events are submitted to DOE. (Ref: support chronology_001 to 027).	The Project Participant has provided all the supporting documents for the CDM consideration and chronology of events. The same has been described in detail in Section 3.7.1 above, of this report. Hence the comments are considered to be closed.