

VALIDATION REPORT

**Enercon (India) Power Development
Private Limited**

**Wind Energy Project in Dewas,
Madhya Pradesh (India)**

SGS Climate Change Programme

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Summary:			
<p>Enercon (India) Power Development Private Limited. has commissioned SGS to perform the validation of the project: Wind Energy Project in Dewas, Madhya Pradesh (India).</p> <p>Methodology Used: AMS I.D.</p> <p>Version and Date: 17, 17/06/2011</p> <p>The scope of the validation 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 CDM Validation and Verification Manual (Version 01.2), Kyoto Protocol requirements, CDM Executive Board/UNFCCC rules.</p> <p>The report is based on the assessment of the project design document undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to document reviews, follow up actions (e.g. site visit, telephone or e-mail interviews) and also the review of the applicable simplified methodology and underlying formulae and calculations.</p> <p>The report and the annexed validation describes a total of 11 findings which include:</p> <ul style="list-style-type: none"> • 10 Corrective Action Requests (CARs); • 01 Clarification Requests (CLs); • 00 Forward Action Requests (FARs); and <p>All findings have been closed satisfactorily. The project will be recommended to the CDM Executive Board with a request for registration.</p>			
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Abbreviations

BM	Build Margin
BSE	Bombay Stock Exchange
CAPM	Capital Asset Pricing Model
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CEA	Central Electricity Authority
CER	Certified Emission Reductions
CIPL	CEPCO Industries Private Limited
CL	Clarification Request
CM	Combined Margin
CO ₂	Carbon Dioxide
CO ₂ e	Carbon dioxide equivalent
COP/MOP	The Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol
DNA	Designated National Authority
DOE	Designated Operational Entity
DPR	Detailed Project Report
DR	Document Review
EIA	Environment Impact Assessment
EIPDPL	Enercon (India) Power Development Private Limited
FAR	Forward Action Request
GBI	Generation Based Incentive
GHG	Green House Gas(es)
HCA	Host country Approval
I	Interview
IRR	Internal Rate of Return
ISHC	International Stakeholder Consultation
JMR	Joint Meter Readings
kWh	Kilo Watt hour
LOA	Letter of Approval
MAT	Minimum Alternate Tax
MOC	Modalities of Communications
MoEF	Ministry of Environment and Forests
MP	Monitoring Plan
MPERC	Madhya Pradesh Electricity Regulatory Commission
MPPTCL	Madhya Pradesh Power Trading Company Limited
MPUVN	Madhya Pradesh Urja Vitaran Nigam
MW	Mega Watt
MWh	Mega Watt hour
NEWNE	The Integrated Northern, Eastern, Western, and North-Eastern regional grids
NGO	Non-governmental Organisation
O & M	Operation and Maintenance

ODA	Official Development Assistance
OM	Operating Margin
PDD	Project Design Document
PLF	Plant Load Factor
PP	Project Participant
PPA	Power Purchase Agreement
REC	Renewable Energy Certificates
RRR	Required Rate of Return
SSC	Small Scale Project Activity
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual
WEC	Wind Energy Converters
XIRR	Extended Internal Rate of Return

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1. Validation Opinion

SGS United Kingdom Ltd has been contracted by Enercon (India) Power Development Private Limited. to perform a validation of the project: Wind Energy Project in Dewas, Madhya Pradesh (India) in India.

The Validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism (CDM), Validation and Verification Manual (Version 1.2) and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The purpose of this project activity is to generate electricity using renewable sources (wind) by installation of 18 Wind Energy Converters (WECs) of 800 kW capacity each, which adds up to make 14.4 MW capacity wind power project located in Ratedi Hills site, district Dewas in the state of Madhya Pradesh and supplying the generated electricity to the integrated Northern, Eastern, Western and North-Eastern Regional (NEWNE) grid, selling the generated electricity to Madhya Pradesh State Electricity Grid.

By the implementation of this 14.4 MW (800 kW x 18) WECs, the project activity will result in reductions of greenhouse gas (GHG) emissions that are real, measurable and give long-term benefits to the mitigation of climate change.

In our opinion, the project meets all relevant UNFCCC, CDM criteria and all relevant host country criteria. The project correctly applies methodology AMS I.D. version 17. It is demonstrated that the project 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.

The total emission reductions from the project are estimated to be 233,380 t of CO₂e over a 10 year crediting period, averaging 23,338 tCO₂e annually. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given the underlying assumptions do not change.

The project will hence be recommended by SGS for registration with the UNFCCC.

Signed on Behalf of the Validation Body by Authorized Signatory

Signature:



Name: Siddharth Yadav

Date: 05/10/2012

2. Introduction

2.1 Objective

Enercon (India) Power Development Private Limited has commissioned SGS to perform the validation of the project: **Wind Energy Project in Dewas, Madhya Pradesh (India)** with regard to the relevant requirements for Clean Development Mechanism (CDM) project activities. The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP) and the project's compliance with the relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reduction (CER). UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities and related decisions by the COP/MOP and the CDM Executive Board.

2.2 Scope

The scope of the validation 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. SGS has employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

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.

2.3 GHG Project Description

The project activity owned by CEPCO Industries Pvt. Ltd. involves the installation and operation of 18 wind energy convertors (WECs) located in Ratedi Hills site, district Dewas in the state of Madhya Pradesh, India. The total installed capacity of the project activity is 14.4 MW that comprises 18 wind energy convertors (WEC) each of 800 kW capacity. WECs of the other wind farm developers along with project WECs are present at the same site which are connected to the common 132 KV metering system of Ratedi Hill substation. The turbines are under contract with the supplier Enercon (India) Ltd. for their turn-key operation and maintenance. The power generated by the project is exported to the NEWNE grid and thus the project activity leads to reduced greenhouse gas emissions by displacing the electricity from fossil fuel dependent grid.

The project activity is already commissioned and the total estimated GHG reduction from the project activity of the project is expected to be 233,380 t of CO₂e for the fixed ten year crediting period starting from 02/12/2012 or from the date of registration whichever is earlier.

The project follows applicability criteria for the chosen methodology (AMS I.D^{8/} –indicative simplified baseline and monitoring methodology “Grid connected renewable electricity generation “ version 17, dated 17/06/2011) as it provides grid-connected renewable power generation based on wind sources.

2.4 The Names and Roles of the Validation Team Members

Assessment Team	
Name	Role
Nitin Babber	Lead Assessor
Ravikant Soni	Assessor, Local Assessor & Sectoral Scope Expert (TA 1.2)
Anshul Sharma	Expert (Finance)

Technical Review Team	
Name	Role
Ramkrishna Patil	Technical Reviewer and Sectoral Scope Expert (TA 1.2)

3. Methodology

3.1 Review of CDM-PDD and Additional Documentation

The validation is performed primarily as a document review of the publicly available project document version 1.0 dated 26/05/2011 and the subsequent version 2.0 dated 05/10/2011, version 3.0 dated 10/11/2011, version 04 dated 12/01/2012 and version 5 dated 21/01/2012 and version 06 dated 30/04/2012 and Version 07 dated 28/08/2012, Version 08 dated 04/09/2012 and version 09 dated 12/09/2012. The final version of PDD is 10 dated 03/10/2012. The assessment is performed by trained assessors using a validation protocol attached as Annex 2 Table 2.

The site visit was performed on 11/08/2011 to 12/08/2011 by members of the assessment team. The results are summarised as annex 1 in the validation report. The assessment team has checked the statements mentioned in the PDD through a review of documents and interviews with stakeholders. All the additional background documents related to the project design and baseline were assessed during the validation site visit.

3.2 Use of the Validation Protocol

The validation protocol used for the assessment is designed in accordance with the Validation and Verification Manual^{7/}, Version 1.2 dated 30/07/2010. It serves the following purposes:

- it organises, details and clarifies the requirements the project is expected to meet; and
- it documents both how a particular requirement has been validated and the result of the validation (reporting).

The validation protocol consists of several tables. The different columns in these tables are described below.

Checklist Question	Ref ID	Means of Verification (MoV)	Comment	Conclusion/ CARs/CLs
The various requirements are linked to checklist questions the project should meet.	Lists any references and sources used in the validation process. Full details are provided in the table at the bottom of the checklist.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (Y), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification Request (CL) is used when the validation team has identified a need for further clarification.

The completed validation protocol for this project is attached as Annex 2 to this report

3.3 Findings

As an outcome of the validation process, the team can raise different types of findings

A Clarification Request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met

Where a non-conformance arises the Assessor shall raise a **Corrective Action Request (CAR)**. A CAR is issued, where:

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

The validation process may be halted until this information has been made available to the assessors' satisfaction. Failure to address a CL may result in a CAR. Information or clarifications provided as a result of an CL may also lead to a CAR.

A Forward Action Request (FAR) is raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity. FARs shall not relate to the CDM requirements for registration.

Corrective Action Requests and Clarification Requests are raised in the draft validation protocol and detailed in a separate form (Annex A.3). In this form, the Project Developer is given the opportunity to "close" outstanding CARs and respond to CLs and FARs.

3.4 Internal Quality Control

Following the completion of the assessment process and a recommendation by the Assessment team, all documentation will be forwarded to a Technical Reviewer. The task of the Technical Reviewer is to check that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team. Findings can be raised at this stage and client must address them within agreed timeline.

4. Validation Findings

4.1 Approval

The host Party for this project is India. India has ratified the Kyoto protocol on 26/08/2002. The project participant has received the Host country approval for the present project activity on 15th December 2011 from the Indian DNA (reference number 4/21/2011-CCC)^{/5/}. This was submitted to the assessment team for verification. The assessment team checked consistency between the original copy of the LoA and the copy provided by the PP and the project activity name and Project Participant's name indicated in the HCA and in section A.1 of the PDD^{/1.10/} was found to be the same. The authenticity of the HCA^{/5/} has been verified from the website of the host country DNA at the following link. http://www.cdmindia.gov.in/project_details_view.php?id=764&oid=1&page=1&reporttype=1 (Project ID is 628/06/2011)

The letter of approval confirms that:

- (a) The Government of India has ratified the Kyoto Protocol in August 2002 and hence is a Party to the Kyoto Protocol
- (b) The HCA is an approval of voluntary participation in the proposed CDM project activity
- (c) The project contributes to Sustainable Development in India
- (d) The HCA refers to the precise proposed CDM project activity – 'Wind Energy Project in Dewas, Madhya Pradesh (India)' – mentioned in the PDD being submitted for registration

The LoA is unconditional with respect to (a) to (d) mentioned above.

Discussion on CARs/CLs

CAR#01 was raised to submit the host country approval letter. In response, the PP submitted the host country approval letter^{/5/} with reference number- 4/21/2011-CCC dated 15th December 2011. The Letter of Approval is found to be in accordance with paragraphs 45-48 of the Validation and Verification Manual (VVM) version 1.2^{/7/} hence CAR 01 was closed.

Opinion

The assessment team confirms that the HCA submitted by the PP is in compliance with the requirements of paragraphs 44-50 of the VVM version 01.2^{/7/} (EB 55 Annex 1).

4.2 Participation Requirements

The host Party for this project is India. India has ratified the Kyoto protocol on 26/08/2002. This was checked from the UNFCCC website <http://maindb.unfccc.int/public/country.pl?country=IN>. The project participant listed in section A.3 of the PDD^{/1.10/} is CEPCO Industries Pvt. Ltd. and Enercon (India) Power Development Pvt. Ltd. The HCA^{/5/} from the Indian DNA approves the participation of the above entities; therefore the project participant is approved by the Party to Kyoto Protocol. Also, the project participant listed in section A.3 of the PDD is consistent with the contact details provided in Annex 1 of the PDD. The assessment team also confirms that no entities other than those approved as project participants are included section A.3 and annex 1 of the PDD.

The PP has submitted the duly filled Modalities of Communication (F_MOC_CDM) form dated 29/08/2011 and the same was validated and found correct. It is verified that the filled MOC form is complete in accordance with the guidelines issued in EB 45 Annex 59.

In accordance with paragraph 40 (b) of the CDM Modalities and Procedures, the PDD of the proposed CDM project activity was made publicly available for the stakeholder consultation process on the UNFCCC website. The PDD version 01 dated 26/05/2011 was webhosted^{/1.1/} from 01/07/2011 to 30/07/2011 and comments were invited on the validation requirements. The comment period is over and two sets of comments received to the project activity which is discussed under section 5 of this report. From the above

discussion, it has been concluded that the proposed CDM project activity meets the relevant CDM requirements.

Discussion on CARs/CLs

CAR #02 was raised asking the PP to submit the modalities of communication (MoC)^{/6/} in accordance with annex 60 of EB 45. In response, the PP provided the completed MoC form in accordance with the guidance Annex 59 of EB 45, and thus, the CAR#02 was closed.

Opinion

As per paragraphs 51 to 54 of the VVM version 01.2 (EB 55 Annex 1), the assessment team is of the opinion that, the proposed CDM project activity meets all the relevant participation requirements.

4.3 Project Design Document including Project Description

The purpose of the project activity is to harness the renewable resources of wind power in Ratedi Hills site of Dewas District, in the state of Madhya Pradesh, India and thereby enable displacement of non-renewable natural resources. Activities involved are construction, operation and maintenance of wind energy based electric generators supplying electricity to the Madhya Pradesh state electricity grid. The technology used in the project activity is the installation of 14.4 MW wind power project consisting of 18 WECs of type E-53 with a capacity of 800 kW each. It has been found during the site visit that WECs of the other wind farm developers are also present at the same site. Project activity WECs and other WECs are connected to the common metering system at Ratedi Hills substation of Dewas District in the state of Madhya Pradesh. The wind energy project will reduce the GHG emissions generated by the current energy mix India's Power Grid (NEWNE grid), dominated by power generated from other conventional sources such as coal. The technology applied is deemed current good practice and is not expected to be replaced within the crediting period.

The technology used in the project is available in India and no transfer of technology is envisaged. The proposed project is expected to export a net amount of 24,601.86 MWh to Madhya Pradesh Power Trading Company Ltd (MPPTCL) per year, which is a part of the NEWNE grid. Plant load factor of 19.7% is considered for the estimation of gross generation by the project activity. However after considering 1% transmission losses the effective PLF arrives as 19.5% and same is used for estimation of net electricity generation. This has been confirmed during the site visit by the assessment team by interviewing the supplier of the WECs and by reviewing the third party PLF report^{/12/} prepared by Ravi Entech Limited, Chennai as per the requirement of para 3 (b) of EB48, Annex 11. It has been verified that Ravi Entech Limited is an engineering company involved in providing wind power solutions and wind farm development. The purchase orders^{/16/} and specifications of wind turbine generator are submitted by the Project Participant. The technical specifications and all the additional documents have been checked during the site visit and were found to be acceptable.

The WEC ID numbers, capacity and commissioning dates mentioned below in the table have been verified through the commissioning certificate and cross-verified against the MPERC clearance. The PPA has been checked to confirm grid connectivity and ownership. The land lease deed and MPERC clearance has been checked to confirm the ownership and verified that the CEPCO Industries Pvt. Ltd. has received clearance to implement the project activity at the selected site. The technical details of the project activity were verified from the purchase order, commissioning certificate and physical inspection during the site visit. The PP has provided the geographical coordinates of the WECs which allows for clear identification of the project activity. These coordinates were verified using Google earth. The proposed CDM project activity does not involve any alteration of existing installations and processes. The WECs installed as a part of the project activity are new as confirmed from the purchase order and cross verified during the site visit.

Sr. No.	Unique identification Number	Commissioning date	Latitude(North)	Longitude(East)
1	95	01/07/2011	22° 48' 18.2"	76° 14' 59.5"
2	96	01/07/2011	22° 48' 20.7"	76° 15' 16.4"
3	97	01/07/2011	22° 48' 24.7"	76° 14' 59.6"

4	98	01/07/2011	22° 48' 31.6"	76° 14' 58.6"
5	99	23/07/2011	22° 48' 37.7"	76° 15' 1.2"
6	100	23/07/2011	22° 48' 44.2"	76° 15' 2.7"
7	101	23/07/2011	22° 48' 50.8"	76° 15' 1.3"
8	102	23/07/2011	22° 48' 57.1"	76° 15' 0.0"
9	103	23/07/2011	22° 49' 3.2"	76° 15' 1.1"
10	105	23/07/2011	22° 49' 16.7"	76° 15' 1.9"
11	106	23/07/2011	22° 49' 19.8"	76° 15' 20.5"
12	107	23/07/2011	22° 49' 26.3"	76° 15' 30.0"
13	104	18/08/2011	22° 49' 10.6"	76° 13' 34.0"
14	108	18/08/2011	22° 49' 31.6"	76° 15' 38.1"
15	109	18/08/2011	22° 49' 37.0"	76° 15' 48.5"
16	110	18/08/2011	22° 49' 44.3"	76° 15' 55.7"
17	111	18/08/2011	22° 49' 52.1"	76° 15' 58.2"
18	112	18/08/2011	22° 50' 0.1"	76° 15' 55.6"

Operational lifetime and the technical specifications mentioned for the project activity were checked with the Enercon (India) Ltd. offer and purchase orders^{/16/} issued by CEPCO Industries Pvt. Ltd. (CIPL) to Enercon (India) Ltd. for the purchase of the WECs and was acceptable. The operation lifetime was accepted as 20 years after reviewing the technical specifications mentioned in the purchase orders^{/16/} of the WECs for the project activity. The operation and maintenance is being carried out by Enercon (India) Ltd. and has proper procedures for providing training to its employees. The ISO-9001 certificates^{/46/} of Enercon (India) Ltd. were checked for the system management and monitoring procedure and are found to be acceptable.

No public funding from parties is received as listed in Annex 1 of PDD. It has been validated with the undertaking^{/29/} provided by the PP confirming that no ODA funding has been used for this project activity. All the parameters in the financing structure considered for project financial analysis is checked against the relevant documentary evidence and was found to be satisfactory.

The project falls under type (i): Renewable Energy Projects, as the project activity involves generation of electricity using wind energy which is a renewable source, and Category D, Grid connected Renewable Electricity Generation as the generated electricity by the project will be exported to the NEWNE grid. Hence, according to simplified modalities and procedures for small-scale CDM project activities the type and category of the project activity has been correctly identified in PDD^{/1.10/}.

The proposed CDM project activity is expected to reduce emissions by supplying zero emission electricity to the NEWNE grid, which is dominated by fossil fuel based power plants. Therefore, the net electricity generated by the project will displace the same amount of electricity that would have otherwise been generated by fossil fuel based power plants and a certain amount of GHG emissions will be consequently reduced as well. The proposed CDM project activity is estimated to achieve an annual emission reduction of 23,350 tCO₂e for 10 year crediting period. This is reflected in the table in section A.4.3 of the PDD. The table reflects the estimated amount of emission reductions over the entire crediting period.

The PP has given a written declaration to confirm that the project will remain within the limits of a small scale project activity every year, for the entire crediting period and there is no usage of public funding in the project activity.

The description of the project mentioned in the PDD was found to be accurate and complete. It is consistent and in compliance with the actual situation. All details have been consistently mentioned throughout the PDD.

Discussion on CARs/CLs

CAR#10 (1) is raised in which the PP was requested to clarify why the range of latitude and longitudes of the WECs is not consistent with the table mentioned in the section A.4.1.4. In response the PP provided the revised PDD in which the range of the latitude and longitudes of the WECs is consistent with the table mentioned in the section A.4.1.4 of the PDD. The same is found acceptable and hence the CAR#10(1) is closed out.

Opinion

All the sections A.2, A.4.2 & A.4.4 were found to be in accordance with the Guidelines for completing the simplified project design document (CDM-SSC-PDD) version 05.

4.4 Eligibility as a Small Scale Project

The proposed CDM project activity is a renewable energy project activity with an installed capacity of 14.4 MW which supplies the generated power to the grid. This has been verified by physical verification of the WECs during the site visit; crosschecked from the technical specification mentioned in the purchase orders¹⁶ and the power purchase agreement signed with the state electricity utility.

Thus, the proposed CDM project activity qualifies within the threshold of 15 MW and meets the eligibility criteria for small-scale CDM project activities mentioned in paragraph 6 (c) of decision 17/CP.7. Also, the project activity conforms to type (I) (Renewable Energy Projects) and category D (Electricity generation for a system) as per appendix B of the simplified modalities and procedures (Decision 4/CMP.1, annex II).

The PP has used AMS I.D version 17, which is an approved small-scale methodology and has been verified from the following site <http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html>. The applicability criteria of the methodology have been described in section 4.5 below.

The assessment team has verified from the UNFCCC website that there is no registered small-scale CDM project activity or an application to register another small-scale CDM project activity with CEPCO Industries Pvt. Ltd. (CIPL) and Enercon (India) Power Development Pvt. Ltd. (EIPDPL) as the project participants. Hence, according to the decision tree for determining the occurrence of debundling (EB 54 annex 13, page 4) the assessment team concluded that the proposed project activity is not a debundled component of a large-scale project activity.

Opinion

As per the requirements of paragraphs 134-136 of VVM version 01.2 (EB 55 Annex 1) and Debundling Tool (Annex 13 to EB 54), the assessment team is of the opinion that the proposed project activity is eligible as a small scale CDM project activity and that the project activity is not a debundled component of a large-scale project activity.

4.5 Applicability of selected methodology to the project activity

The proposed project activity is a 14.4 MW grid connected wind power project in Western India. The project uses the small scale methodology AMS I.D, version 17. The following steps have been undertaken for assessing the applicability conditions of the methodology:

Applicability of AMS I.D. Version 17 is illustrated as below:

Para 1 *"This category comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass:*

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

The proposed CDM project activity is a wind energy power plant i.e. it is renewable energy generation unit, which is supplying the generated electricity to NEWNE grid. The grid connectivity of the project was verified through the power purchase agreement²⁸. This has also been verified during the site visit and was found to be acceptable. Hence, the project activity complies with the applicability criteria 1 of the baseline and monitoring methodology AMS I. D. Version 17.

Para 2 The project activity complies with the applicability criteria 2 of the baseline and monitoring methodology AMS I. D. Version 17. The details of the same are mentioned as per table -2 of the methodology as mentioned below.

- (a) The Project supplies electricity to a national/regional grid so methodology AMS-I.D is applicable.
- (b) The project does not displace grid electricity consumption (e.g. grid import) and/or captive fossil fuel electricity generation at the user end (excess electricity may be supplied to a grid) so the same criteria which is meant for AMS-I.F is not applicable.
- (c) As the project does not supply electricity to an identified consumer facility via national/regional grid (through a contractual arrangement such as wheeling) so this particular paragraph is not applicable for the project activity which is meant for AMS-I.F is not applicable.
- (d) The project does not supply electricity to a mini grid system where in the baseline all generators use exclusively fuel oil and/or diesel fuel so methodology AMS-I.F is not applicable.
- (e) The project does not supply electricity to household users (included in the project boundary) located in off grid areas so methodology AMS-I.A is not applicable.

Para 3, *“This methodology is applicable to project activities that (a) install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant); (b) involve a capacity addition¹; (c) involve a retrofit² of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s)”*

The project involves the installation of a new wind power plant where there was no renewable energy power plant operating prior to the implementation of the project activity. The proposed CDM project activity is a Greenfield project activity which is evident from the purchase order^{16/} and the commissioning certificates^{19/}. This has also been verified during the site visit. Hence, this applicability criterion is also met.

Para 4 – *“Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology:*

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

The project activity involves the use of wind energy for the generation of power. As it is not a hydro power plant, this criterion is not applicable to the project activity under consideration.

Para – 5, *“If the new unit has both renewable and non-renewable components (e.g., a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.”*

The project activity envisages the use of renewable energy only i.e. wind energy. The total installed capacity of this wind power project is 14.4 MW^{16/}, which is less than the threshold capacity limit of 15 MW for small scale project activities. Hence, this applicability criteria is also met.

Para – 6, *“Combined heat and power (co-generation) systems are not eligible under this category.”*

The project activity involves utilization of power alone. The project activity is not a cogeneration system and has been verified during the site visit.

Para – 7, *“In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.”*

The proposed CDM project activity is a Greenfield project activity which is evident from the purchase order^{16/} and does not involve the addition of renewable energy generation units at an existing renewable power generation facility and it has also been verified during the site visit.

Para - 8, *“In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement unit shall not exceed the limit of 15 MW.”*

The Purchase order^{/16/} for the windmills indicates that the windmills are new and does not involve retrofit and/or modifications to the existing equipment. During the site visit it is verified that no other wind mills that belongs to the project activity/ project participant are being implemented/ constructed at the same site. Hence it can be concluded that proposed project is not a capacity addition.

Thus, all the applicability criteria of AMS I.D, version 17 have been duly addressed and justified. Hence, from the above discussion, it has been confirmed that the applicability of the selected methodology AMS I.D, version 17 to the proposed project activity was found to be reasonable and acceptable.

Discussion on CARs/CLs

CAR #04 was raised asking the PP to mention all the applicability criteria as per AMS I.D. version 17. In response, the PP has discussed all the applicability criteria of the project activity in the revised PDD version 2.0 as per version 17 of the applied methodology AMS I.D. the same was found in line with the requirements of the methodology and hence CAR #04 was closed.

Opinion

As per the requirements of paragraphs 68-77 of VVM version 01.2^{/7/} (EB 55 Annex 1) and based on the above discussion, the validation team confirms that the proposed CDM project activity meets all the applicability conditions and all other stipulations of the selected methodology AMS I.D Version 17.

4.6 Project Boundary

The selected methodology AMS I.D, version 17, paragraph 9 states that “The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to”.

The PP had described the project boundary in section B.3 of the PDD by diagrammatic representation to include the WECs, the sub-station, and NEWNE grid. During the site visit, and review of the commissioning certificates^{/19/, /20/, /21/} and the power purchase agreement^{/28/} showed that the proposed project activity evacuates power to MPPTCL. The project activity will reduce the equivalent quantity of CO₂, which would have been released into the atmosphere from the fossil fuel dominated NEWNE grid of India in absence of the project activity.

Since the project activity involves the generation of electricity using wind energy, hence project emission and leakage is considered as zero, in line with applicable methodology AMS I.D version 17. Also during the site visit it has been confirmed that there is no greenhouse gas emissions occurring within the proposed CDM project activity boundary as a result of the implementation of the proposed CDM project activity which are expected to contribute more than 1% of the overall expected average annual emissions reductions in line with paragraph 77 of VVM version 1.2.

Opinion

The assessment team is of the opinion that the project boundary has been correctly identified in the revised PDD version 10^{/1.10/} and is in line with paragraph 78 - 79 of VVM version 01.2 (EB 55 Annex 1).

4.7 Baseline Selection and Additionality

The project has applied baseline as mentioned in the small scale methodology AMS I.D, version 17. The project activity generates electricity from wind mills and supplies the same to the NEWNE grid thus replaces electricity which would have otherwise been generated by fossil fuels based power plants connected to grid.

The PP has correctly identified the baseline of the proposed CDM project activity as paragraph 10 & 11 of the selected methodology AMS I.D, version 17:

“The baseline emissions are the product of electrical energy baseline $EG_{BL,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor.”

$$BE_y = EG_{BL,y} * EF_{CO_2,grid,y}$$

Where:

BE_y = Baseline emissions in year y tCO₂.

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

$EF_{CO_2} = CO_2 \text{ emission factor in year } y, tCO_2/MWh$

The emission factor has been calculated as per paragraph 12(a) as:

“The Emission Factor can be calculated in a transparent and conservative manner as follows:

(a) A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the ‘Tool to calculate the emission factor for an electricity system.’”

The PP has referred to the version 2.2.1 of the “Tool to calculate emission factor for an electricity system”, which is appropriate.

The demonstration of additionality has been described in detail in sections 4.7.1 & 4.7.4 below.

Opinion

The assessment team confirms that the approved baseline methodology (AMS I.D version 17) has been correctly applied to identify the most reasonable baseline scenario and that the emission factor calculations and subsequently the baseline emission reduction calculations are in line with the ‘Tool to calculate the emission factor for an electricity system’ version 2.2.1. It is also confirmed that small scale methodology is applied in conjunction with the general guidelines to SSC CDM methodologies (EB61, annex 21) which provides guidelines on baseline identification for type I project activities.

4.7.1 Additionality

The proposed CDM project activity has demonstrated additionality by applying the Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities and by referring to paragraph 1(a) Investment barrier of EB 35 Annex 34 (Non-binding best practice examples to demonstrate additionality for SSC project activities). The PP has appropriately selected the benchmark analysis to demonstrate additionality as described in sub step 2b option III of the ‘Tool for demonstration and assessment of additionality’ version 06.0. The benchmark analysis approach is appropriate, since in absence of the project activity electricity would have been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid This is in line with paragraph 19 of ‘Guidelines on assessment of Investment analysis’ version 5 (EB 62 Annex 5). The benchmark analysis has been described in detail in section 4.7.4 below.

The approach used in the PDD^{/1.10/} was first assessed by verifying it against step 2 of the ‘Tool for demonstration and assessment of additionality’ version 6.0. The following documents and information were reviewed during this assessment. In this list documents mentioned which are after the date of decision making is used for crosschecking the input values.

1. DPR for CEPCO Industries Pvt. Ltd. dated 24/09/2010^{/10/}
2. Extract of Board resolution by CEPCO Industries Pvt. Ltd. dated 30/09/2010^{/11/}
3. Third Party PLF study report dated 27/12/2010^{/12/}
4. Request for proposal for supply of WECs dated 07/09/2010^{/14/}
5. Supplier offer for supply of WECs from M/s Enercon (India) Ltd. dated 14/09/2010^{/15/}
6. Purchase Orders for all WECs dated 28/10/2010^{/16/}
7. MOEF permission for diversion of forest land for windfarm project^{/17/}
8. Affidavit for transfer of land to CEPCO Industries Pvt. Ltd. by Enercon (India) Limited^{/18/}
9. Commissioning Certificates^{/19/20/21/}
10. NOC from MPERC^{/22/}
11. MPERC Order for establishment of wind project^{/23/}
12. MPUVN permission to establish wind farm^{/24/}
13. MPERC Wind Tariff Order dated May 2010^{/25/}
14. Loan application letter dated 22/02/2011^{/26/}
15. Loan Sanction letter dated 21/07/2011^{/27/}
16. Power Purchase Agreement with MPPTCL dated 05/08/2011^{/28/}

The data, rationales, assumptions and justifications mentioned in the PDD and the IRR excel sheet were crosschecked against the local knowledge of the validation team, about regulatory and applicable legal requirements in the Host country India. The documents were also verified by a sectoral and financial expert.

The information in the above mentioned documents were also verified against the actual situation on the site and found to be accurate. The staff at the sub-station and the representative of the WEC provider, Enercon (India) Ltd., was also interviewed to verify the accuracy in the documents.

Opinion

Based on the responses to the various approaches mentioned above and the requirements of paragraphs 94-96 of the VVM version 01.2 (EB 55 Annex 1), the assessment team confirms that the documents provided for the project activity are appropriate. Hence, the data, rationales, assumptions and justifications provided in the PDD^{/1.10/} and IRR excel sheet^{/2.6/} are reliable and credible.

4.7.2 Prior Consideration of the Clean Development Mechanism

The start date of the project activity is 28/10/2010 as per the purchase order^{/16/} placed for the WECs by CEPCO Industries Pvt. Ltd., which is in line with the para 67 of EB 41 Meeting Report. The evidence for the same submitted by the PP is the purchase order^{/16/} issued to Enercon (India) Ltd. by CEPCO Industries Pvt. Ltd. for the supply of 18 WECs of 800 kW each. The purchase order was checked for the date and it was found to be consistent with the mentioned date in the PDD. Also, the start date was found to be in line with the definition of start date mentioned in the Glossary of CDM terms version 6 and paragraph 67 of EB 41 Meeting Report.

The start date of the proposed CDM project activity is 28/10/2010 which is after 02/08/2008 and hence it is not an existing project activity as per EB 62 annex 13 "Guidance on the demonstration and assessment of prior consideration of CDM" version 4. For project activities with a starting date on or after 02/08/2008, the project participant must inform a Host Party DNA and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status. Such notification must be made within six months of the project activity start date and shall contain the precise geographical location and a brief description of the proposed project activity.

The assessment team has checked the following documents submitted by the PP to prove that there was prior consideration of CDM for the project activity:

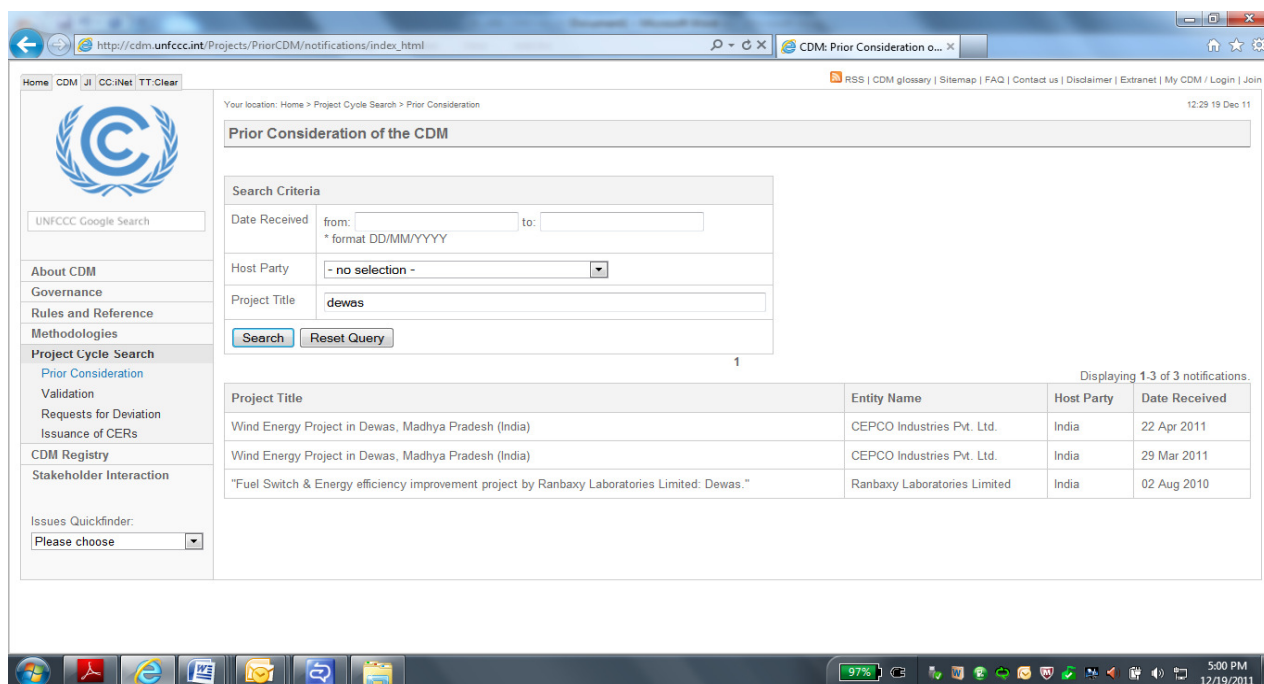
1. Prior intimation Form^{/40/} dated 29/03/2011 submitted to the UNFCCC and Indian DNA (MoEF)
2. Mail for Prior intimation to UNFCCC dated 29/03/2011 and UNFCCC Confirmation mail receipt^{/41/} dated 02/05/2011, A other mail from the PP was also sent to UNFCCC on 22/04/2011 as the PP could not received any response from the UNFCCC by this time .
3. PPs intimation to Indian DNA (MoEF) was through online application on 29/03/2011. This was confirmed through follow up mail from PP dated 08/12/2011 and MoEF reply dated 08/12/2011. Snapshot of online application by CEPCO for the project activity dated 29/03/2011 was also sent by the Indian DNA (MoEF) along with the confirmation^{/47/}

The same has also been verified from the UNFCCC website's prior consideration section. The assessment team has confirmed that the UNFCCC and Indian DNA were intimated within 6 months of the start date of the project activity (28/10/2010)

Discussion of CARs/ CLs

CL #06 was raised asking the PP to justify their claim that they had considered CDM before going ahead with the project activity.

In response, the PP submitted the UNFCCC prior intimation form dated 29/03/2011 along with the mail receipt from the UNFCCC regarding prior notification dated 02/05/2011. The PP also stated that the UNFCCC receipt was not received until 02/05/2011, the mean time the PP again submitted the UNFCCC prior notification form for which the UNFCCC receipt was received on 27/05/2011. This is the reason there are two dates reflected on the prior consideration webpage of the UNFCCC website (snapshot shown below).



Home CDM JI CC-Net TT-Clear

Your location: Home > Project Cycle Search > Prior Consideration

Prior Consideration of the CDM

Search Criteria

Date Received from: to: * format DD/MM/YYYY

Host Party - no selection -

Project Title dewas

Search Reset Query

1

Displaying 1-3 of 3 notifications.

Project Title	Entity Name	Host Party	Date Received
Wind Energy Project in Dewas, Madhya Pradesh (India)	CEPCO Industries Pvt. Ltd.	India	22 Apr 2011
Wind Energy Project in Dewas, Madhya Pradesh (India)	CEPCO Industries Pvt. Ltd.	India	29 Mar 2011
"Fuel Switch & Energy efficiency improvement project by Ranbaxy Laboratories Limited: Dewas."	Ranbaxy Laboratories Limited	India	02 Aug 2010

Issues Quickfinder: Please choose

Confirmation of online application from Host country DNA (MoEF) dated 29/03/2011 was also submitted. The assessment team is of the opinion that the UNFCCC and Indian DNA (MoEF) were informed within 6 months of the start date of the project activity (28/10/2010) and hence CL #06 was closed.

Opinion

Hence, based on the evidence submitted by the PP the assessment team has concluded that the benefits of CDM were a decisive factor in the decision to process with the project which is in conformance with paragraph 2-4 of EB 62 Annex 13.

4.7.3 Identification of alternatives (if applicable)

Not applicable for this project activity.

4.7.4 Investment analysis (if applicable)

The PP has referred to the investment barrier mentioned in EB 35 Annex 34 to demonstrate additionality and carry out the investment analysis. This has been described in section B.5 of the PDD. The investment analysis has been validated against the requirements of the "Guidelines on assessment of Investment Analysis" version 5 (EB 62 Annex 5).

The following parameters were used for the calculation of the Equity IRR for this project activity:

1. Project cost
2. Plant load factor (PLF)
3. Equity debt ratio
4. O&M cost & escalation
5. Tariff rate
6. Income tax & MAT
7. Depreciation
8. Project residual cost
9. Loan Amount and its tenure
10. Interest rate
11. Working Capital
12. Service Tax

13. Insurance Charges

The input parameters used have been validated for project activity in this section. The assessment team has validated the key input parameters from the supplier offer^{/15/} provided by Enercon (India) Ltd. which was the basis for the DPR preparation and confirms that the offer and DPR was available with the PP when the investment decision was taken, in line with paragraph 6 of EB 62 Annex 5. Also the parameters have been cross checked with the MPERC Tariff Order dated May 2010 because it was the latest authentic and publically official document available at the time of decision making and hence appropriately applicable to the project activity.

To verify the accuracy of financial calculations carried out for investment analysis presented in IRR excel sheet has been assessed under the applicable /relevant criteria of latest version of the "Guidelines on the Assessment of Investment analysis" published in 62nd meeting of EB under annex 5 which is as per the requirement of the paragraph 110 of the VVM version 1.2).

Also to determine the likelihood of the occurrence of a scenario other than the scenario presented for proposed project activity, a cross-check on the suitability of the assumptions used in the development of the investment analysis has been done. The results of assessment are elaborated under sensitivity analysis section in this report. The variables, that constitute more than 20% of either total project costs or total project revenues has been subjected to variation of +/- 10% and the results of this variation are presented in the PDD^{/1.10/} and can be reproduced in the associated IRR spreadsheet^{/2.6/}. The assessment team confirms that this variation (+/-10%) is reasonable and appropriate in the context of the proposed project activity circumstances. Furthermore this can be confirmed through the purchase orders placed by the project participant reflecting the actual values of key input parameters like project cost, O&M etc.

Project Cost:

The project cost of 835.92 Million INR i.e. 58.05 Million INR/ MW has been considered from the WEC supplier offer^{/13/} issued by Enercon (India) Ltd. The project cost includes the cost of the WEC; erection, installation and commissioning charges; and processing charges of the state electricity board. These values are found to be appropriate and accepted.

The project cost per MW of the project activity has been cross checked against projects in the same region i.e. the state of Madhya Pradesh. The following registered projects were referred:

UNFCCC Ref No's- 4879, 4411, 3805, 3350 and 3996

In Madhya Pradesh per MW cost of WECs was found to vary from 49.7 to 58.7 million INR. This variation in project cost are due to reasons such as different suppliers; varying capacity of the projects; specific location of the project activity; negotiation capability of the client; etc. It has been observed that for the proposed CDM project activity the Cost/ MW is comparable with the other registered projects. Hence, the project cost considered for the proposed project activity is acceptable and appropriate. The value of project cost was also checked by the sectoral scope expert and was confirmed to be appropriate.

Plant Load Factor (PLF):

An effective PLF of 19.5% is considered for the WECs in the project activity based on the supplier offer after the deduction of 1% transmission losses mentioned in the same. Since the supplier offer was available to PP at the time of investment decision hence this is in line with paragraph 6 of "Guidelines on the assessment of investment analysis" version 05 (EB 62 Annex 5)

However, to be in conformance with the "Guidelines for the reporting and validation of Plant Load factors" version 01, Annex 11 of EB 48, the PP also got a third party assessment of the PLF done in that region. According to the PLF study done by Ravi Entech Limited, Chennai, the PLF was evaluated as 19.5% at the hub of WEC with transmission losses of 4%. Since the PLF considered while taking the investment decision by the Board of Directors was found appropriate the same has been used in investment analysis.

The PLF value was also cross checked against the MPERC order of May 2010, which mentioned a value of 20%. As the same value is covered while doing the sensitivity analysis (+/- 10%) on the plant load factor Increasing the PLF by 10% increase the IRR to 12.71% and does not cross the benchmark(i.e.18.21%).Further it was verified that increasing the plant load factor up to 24.63 % touches the benchmark which is highly unlikely scenario.

Hence the assessment team is of the opinion that the PP has considered the appropriate PLF for the project activity in line with the requirement of para 3 (b) of Annex 11 of EB 48.

Debt Equity ratio:

As per the guidance on the assessment of investment analysis (EB62, Annex-5) paragraph-13, In the cases where projects could be developed by an entity other than the project participant the **benchmark** should be based on parameters that are standard in the market. The PP has considered a debt equity ratio of 70:30 which was decided at the time of decision making as per the Board resolution and the detailed project report (DPR). The DOE has also cross checked it from the MPERC tariff order^{/25/} paragraph 9.7 and validated that this ratio is standard in the wind energy sector hence the equity debt ratio is found acceptable and satisfactory.

O&M cost & escalation:

The O&M cost of the WECs have been considered from the offer letter^{/15/} issued by the WEC supplier. The O&M cost is stated to be free for the first year and 0.65 Million INR per WEC for the 2nd year which is 1.40% of the capital cost with an annual escalation of 6%.

The O&M cost of projects registered in Madhya Pradesh have been crosschecked. It was found that most of the projects e.g. UNFCCC ref. Nos. 4411, 3805, 3350 & 3996 had O&M cost similar to the cost used in this project activity.

Hence, O&M cost of 0.65 Million INR per WEC with an escalation of 6% for the project is acceptable along with the fact that sensitivity and calculation of threshold limit has been done for O&M cost and its escalation. The results have been summarized in further section of this report.

Tariff Rate:

The tariff rate is based on the MPERC Wind Tariff Order dated May 2010. The tariff of Rs. 4.35 per kWh is constant and fixed for the complete lifetime of the WECs.

The tariff rate has also been cross checked with the Power Purchase Agreement signed between the PPs and Madhya Pradesh Power Trading Company Limited (MPPTCL). The PPA also states that the tariff is Rs. 4.35 per kWh will be applicable for new WEGs commissioned on or after 14/05/2010. The same is acceptable to the assessment team.

Income tax & MAT:

The income tax of 33.22%^{/35/} and MAT rate of 19.93%^{/34/} has been considered for the project activity. The rates have been taken from the Income Tax India website as the tax rates applicable for the annual year 2010-11. The assessment team has verified the data provided by the PP and was found to be correct.

Depreciation:

The IT depreciation of 80% in first year has been considered for the project activity. This is as per the Income Tax Act -1961, Government of India section-32 Rule-5.

It has been validated from the book depreciation considered for the project activity has been calculated based on the straight line method and has been taken as 4.50% as per the MPERC Order. The book depreciation value has been deducted for calculating the gross profit and has been added back to the net profit for the purpose of calculating the Equity IRR. This has been verified from the IRR calculation spreadsheet. This is in line with paragraph 5 of EB 62 Annex 5. The depreciation as per the income tax rate has been deducted from the gross income in the tax calculations, which is appropriate

Project residual cost:

The residual value has been calculated as 10% of the project cost (excluding the cost of the land). This value has been validated from the MPERC tariff order^{/25/} and is found consistent. Sectoral and financial expert has also confirmed that to take value of 10% as residual cost after the project life of 20 years is justified.

Based on the above mentioned assumptions the post tax Equity IRR for the project activity has been calculated to be 9.37%.

The assessment team has also cross checked actual project cost and O&M cost from purchase orders^{/16/} for the project activity. The result of this assessment has been discussed in sensitivity analysis section in this report.

Loan amount and Tenure:

As explained above the PP decided to take 70 % loan of the total project cost and tenure was decided as 10 years. This basis of assumption has been taken from MPERC tariff order^{/25/}. The same has also been validated from Loan Sanction letter^{/27/} from Union Bank of India, New Delhi.

Interest rate:

The interest rate has been considered as 10.25% the same has been validated from the site of the Reserve Bank of India website^{/48/} and found consistent with the rate of interest in the month of September 2010.

Working Capital:

It has been validated from the supplier's offer letter^{/15/} where O& M charges for the period of 90 days and receivables for the period of 45 days have been considered as working capital. This value is found consistent with the financial calculation.

Service Tax:

In the financial calculation the PP has considered the service tax as 10.30% on the Operation and maintenance services supplied by Enercon (India) Ltd. The same has been validated from the link mentioned in the financial calculation sheet. The same has also been crosschecked from the publically available information at <http://www.simpletaxindia.net/2009/02/service-tax-rate-effective-date-of.html>.

Insurance Charges:

Insurance charges have been validated from the offer from insurance provider. The value mentioned is 0.12% of the capital cost which is found correct. This value has been checked by the financial expert and was found to be appropriate

Equity IRR

The values considered for all the above discussed parameters were available at the time of investment decision and hence are valid and applicable to the project activity. All of the above-mentioned assumptions have been verified in the PDD^{/1.10/} and IRR excel spreadsheets^{/2.6/} and have been found to be consistently mentioned and applied in all calculations. Hence, it satisfies all the requirement of paragraph 6 of EB 62 Annex 05.

Based on the above parameters, the equity IRR for the project activity has been calculated to be 9.37%. The calculation of equity IRR has been checked by the assessment team and is found to be in line with the requirements of Guidelines on assessment of investment analysis, EB62 Annex 5. As presented in the investment analysis sheet^{/2.6/}, for the calculation of equity IRR only the portion of investment financed by equity has been considered which is in line with para 10 of EB62 Annex 5. The same was validated by the assessment team and was found to be appropriate.

Suitability of Benchmark

The project activity considers 30% equity and 70% debt component. Post tax equity IRR has been calculated for the project activity and hence the benchmark has been determined as per para 12 of EB 62, Annex 5 i.e. Required/expected returns on equity are appropriate benchmarks for an equity IRR. The equity IRR is considered as the financial indicator and the required rate of return is considered as the benchmark for the project activity. The Capital Asset Pricing Model (CAPM) is an industrial accepted norm. It has been chosen to estimate the required rate of return (RRR) for this project activity. The Required Rate of Return as per the CAPM model has been determined as below:

$$R_e = R_f + \text{Beta} * (\text{Market Return} - \text{Risk Free Return})$$

Where,

R_e	Required rate on equity
R_f	Risk free Return
Beta	Beta

The return on equity (R_e) as per the CAPM is the return from a risk free investment (R_f) plus beta (β) times the difference between the expected market return (R_m) and the return from the risk free investment (R_f).

The PP has calculated the benchmark w.r.t. the investment decision financial year. Since the financial year begins in the month of April, hence, the benchmark applicable for a particular financial year has been calculated till the month of March. The investment decision dates for the WECs have been verified as 30/09/2010 from the extracts of the board resolution^{/11/}.

The values of R_f , β & R_m used for the calculation of the benchmarks have been validated as follows:

1. **R_f – Risk free return:** The risk free rate of return is taken from the interest rates on the Central Government Securities. The value considered is 8.27%. Considered risk free rate of return is the four months average (April 2010 to July 2010) of returns available on long term government securities having maturity term of 20 years which is similar to the considered assessment period and life time of the project activity. Hence the assessment team is of the opinion that the considered risk free rate of return is suitable to calculate the benchmark comparable to the financial indicator calculated considering an assessment period of 20 years. Assessment team also confirms that the same was latest publically available information available to PP at the time of decision making. The date has been sourced from the following link http://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/26CT_SEP090910.pdf published in Sep 2010.
2. **β – Beta:** Project participant has considered publically listed power companies under BSE-200 Index having at least three years of trading history available before decision making, for estimation of beta value.

Beta values have been sourced from Bloomberg financial database on the basis of last 3 years from the date of decision making (30/09/2010).of the project activity. The same has been further checked from the book published by Prof Aswath Damodaran on “Estimating Risk Parameters”/49/. As per this book, services use period ranging from 2-5 years of beta. The considered time period of 3 years is within the quoted range, Hence the assessment team is of the opinion that the considered time period for calculation of beta is appropriate. The same has been checked by financial expert and confirmed its appropriateness.

The snapshots of the database have been provided to the assessment team as evidences and the same are duly verified by the assessment team. PP has taken the investment decision on 30/09/2010. The cut off date for considering the value of Beta is also the same, hence the same is found acceptable as the PP has used latest publically available information available to the PP at the time of decision making.

The beta^{/3.2/} values for these power companies are as follows:

Company Name	Beta
Tata Power Co Ltd	0.999
CESC in equity	1.096
Neyveli Lignite Corporation	1.358
Reliance Infrastructure Ltd	1.553
GMR Infrastructure Limited	1.245
GVK Power & Infrastructure Ltd	1.296
NTPC LTD	0.724
TORRENT POWER LIMITED	1.293
Reliance Power Limited	1.227
LANCO INFRATECH LTD.	1.741
Average	1.253

Based on the beta presented above, the average beta value has been calculated as 1.253 which has been taken as industry standard value to estimate the cost of equity for the project activity.

3. **R_m – Market Return:** In order to avoid the risks associated with the project, market return has been calculated by using the BSE 200 index data, which is a well-diversified market portfolio. PP has used CAGR (Compounded Annual Growth Rate) to calculate yearly available market return. PP also compared it to other indices like SENSEX, BSE-100 and BSE-500. The results were as follows:

		Index date	Close	No of years of Index	Market Return
Sensex	Index Start Date	1-Apr-79	100.00	31.52	18.32%
	Decision making date	30-Sep-10	20,069.12		
BSE-100	Index Start Date	1-Apr-83	100.00	27.52	18.48%
	Decision making date	30-Sep-10	10,627.35		
BSE-200	Index Start Date	1-Apr-89	100.00	21.51	16.21%
	Decision making date	30-Sep-10	2,530.47		
BSE-500	Index Start Date	1-Feb-99	1,000.00	11.67	19.49%
	Decision making date	30-Sep-10	7,984.45		

The value of market return has been considered as 16.21% based on BSE 200 index data. It was also observed by the assessment team that the market return calculated on the basis of BSE-200 were most conservative when compared to other indices.

To eliminate the impacts of short term volatility a considerably long period (21 years) prior to the decision for the project activity has been considered, i.e. from 1st April 1989 (inception of BSE 200) to data available at the time of investment decision (30th September 2010) for the project activity.

Justification for suitability of time period: With the selection of BSE 200 index the PP has covered a period of 21.51 years for market indices, which is equivalent to the lifetime of the wind power projects in India (20 years) and the assessment period for calculation of returns for the project activity (20 years). Hence, the selected time period is the most appropriate in calculation of benchmark comparable to the financial indicator calculated considering an assessment period of 20 years .

The data in the benchmark spreadsheet^{3.2/} submitted by the PP has been validated against the references provided and found to be correct. The references provided are publicly available data sources. Thus, it satisfies the requirements of paragraph 13 of EB 62 Annex 5. Hence, the benchmark for the project activity has been verified to be 18.21%.

The return on equity has been calculated, not by applying the general stock market returns, but by taking into account the risk premium which has been calculated as the difference between R_i & R_m and the β value, which are standard parameters in the market, the data sources have been validated appropriately by the financial expert and found to be correct. Hence, it reflects the underlying risk profile of the project activity and is in line with the requirements of option (b) of 15 of EB 62 Annex 5.

The PP has submitted all versions of the excel spreadsheets used for the investment analysis. The sheets have been checked by the financial expert. All the assumptions, links and formulae used in the sheet are readable and all cells are viewable and unprotected. The analysis has been presented in a transparent manner in the excel spreadsheet and is reproducible. Thus, it satisfies the requirements of paragraph 8 of EB 62 Annex 5.

The lifetime of the project activity is 20 years. The financial analysis has been carried out in the excel spreadsheet considering the entire period of 20 years in spite of the project having a fixed crediting period of only 10 years. Thus, the assessment period has been appropriately considered as per paragraph 3 of EB 62 Annex 5.

Sensitivity Analysis

The PP has appropriately selected the following variables to conduct the sensitivity analysis:

1. Capital Cost
2. Plant Load Factor

3. O&M Cost

4. O&M Cost Escalation

The results of the sensitivity analysis have been presented in the PDD^{1.10/}. The results have also been presented in the IRR calculation spreadsheet^{2.6/} in a reproducible manner. Thus, it satisfies the requirements of paragraph 20 of EB 62 Annex 5.

The sensitivity analysis for the variables covers a range from +10% to -10% which is appropriate in context of the project requirements. For doing sensitivity analysis, the value of project cost, PLF & O&M have been considered from the quotations from the technology supplier. It is observed that for the project activity even at 10% decrease in project cost, O&M cost and 10% increase in PLF, individually, the project remains additional. Thus, it satisfies the requirements of paragraph 21 of EB 62 Annex 5.

The outcome of the sensitivity analysis for each of the variable along with the selected benchmark is summarized below for the project activity:

Capital Cost

Since the project cost has considered from proposals provided by WECs supplier, hence anticipating the variation that may take place sensitivity analysis has been conducted to an extent of $\pm 10\%$ in line with the "Guidelines on the assessment of investment analysis" version 05 (EB 62 Annex 5). The outcome of sensitivity analysis for project cost summarized below:

+10%	Base IRR	-10%	Benchmark
6.15%	9.37%	13.71%	18.21%

As per the above table, it is confirmed that even after 10% reduction in project cost the project IRR does not crosses the benchmark.

It can be noted that equity IRR touches the benchmark (i.e. 18.21%) if project cost for the project activity reduces by 18.35%. However, the actual reduction in project cost is only 8%. Reduction of the project cost by more than that verified from purchase order is not expected since the project cost has been fixed in the firm purchase orders on their placement and the project has already been executed and commissioned.

Plant Load Factor

In the below table, it is observed that the equity IRR is below the selected benchmark even after a 10% increase in PLF.

+10%	Base IRR	-10%	Benchmark
12.71%	9.37%	6.05%	18.21%

The project IRR touches the benchmark (i.e. 18.21%) if the PLF for the project activity increases by 26.3% (i.e. an effective PLF of 24.63%). The PLF considered for the project activity is 19.5%. The PLF value was also cross checked against the MPERC order of May 2010, which mentioned a value of 20%. Thus, an increase in the PLF value up to 26.3% is an unlikely scenario. Hence, the IRR crossing the benchmark for the Plant Load factor is highly unlikely.

O&M Cost

Anticipating the expected variation in O&M cost the PP has also conducted sensitivity analysis for O&M cost to an extent of $\pm 10\%$ in line with the Guidelines on the assessment of investment analysis (EB62, annex 5). It is noticeable from the analysis that equity IRR does not cross the benchmark if O&M cost decreases by 10%.

+10%	Base IRR	-10%	Benchmark
9.89%	9.37%	8.84%	18.21%

It is also noted that with a 190% decrease in O&M cost, the IRR touches the benchmark. Hence, the IRR crossing the benchmark for the O&M cost is highly unlikely.

O&M Cost Escalation

Anticipating the expected variation in escalation of O&M cost the PP has also conducted sensitivity analysis for O&M cost escalation. It is noticeable from the analysis that equity IRR does not cross the benchmark with an O&M escalation of 4% even.

6.6%	Base IRR (6%)	5.4%	Benchmark
9.12%	9.37%	9.60%	18.21%

It is also noted that even with a 0% escalation in O&M cost, the IRR does not cross the benchmark. Hence, the IRR crossing the benchmark for the O&M cost escalation is highly unlikely.

In the above table, the observed equity IRR of the project is well below the selected benchmark. Hence, it can be established that the project activity is financially not viable without the benefits of CDM.

Discussion of CARs/CLs

CAR #07 was raised to address the issues related to the investment analysis. The PP was requested to submit the financial analysis excel sheet with evidence for each value used in the analysis. The issues raised and their discussions are as follows:

1. PP was asked to give an explanation regarding Generation Based Incentives (GBI) and its involvement in the project activity along with a copy of declaration and application submitted to MNRE for claiming GBI as proof.

In response, PP reconsidered its decision of claiming GBIs and revised the financial calculations considering accelerated depreciation (AD) instead (only one of the two approaches can be considered in financials). PP also referred to the DPR wherein both GBI and accelerated depreciation approaches were compared. Hence PP chose AD approach as it was more financially attractive.

The assessment team checked the revised financial sheet version 2 and referred to the GBI guidelines and found the revised financials to be appropriate and acceptable. Hence the CAR#7(1) is closed.

2. PP was asked to provide the evidence for O&M cost and escalation considered.

In response, PP stated that the source of O&M cost and escalation was the offer from the technology supplier. The same was submitted to the assessment team. The assessment team verified the information from the offer and found it to be consistent with the values considered in the financial calculation. Hence the CAR#7(2) was closed.

3. PP was requested to list the assumptions and explain interest calculations as presented in the financial excel sheet in a transparent manner.

In response, the PP provided all the references to the interest calculation assumptions used in the financial calculation sheet and revised the same to present the calculations in a transparent manner. The assessment team cross checked the references with publically available sources and found them to be appropriate.

Further the PP was asked to justify the reason for considering interest for complete 1 year ending March 2012. In response, PP corrected the interest calculation by considering repayment only after commissioning of the machines i.e. June 30, 2011. There was no repayment of loan during the first quarter of the year ending March 2012. The same was checked by the assessment team in the spreadsheet and found it to be revised. Hence the CAR#7(3) was closed.

4. PP was asked to confirm if PP has benefits from scheme like REC and justify their non-inclusion as revenue in financials if the same has been considered.

In response, the PP stated that the project activity was not eligible to avail RECs citing the eligibility criterion for REC mechanism which bars projects from availing RECs if they have taken the preferential tariff route. The PP also submitted the PPA signed with the state electricity utility as evidence for the same. Assessment team crosschecked PP's claim from publically available data and the PPA and found the justification appropriate.

The PP was further asked to justify the robustness of the binding nature of PPA. In response, the PP submitted a self-declaration for non-usage of benefits under REC mechanism for the lifetime of the project activity this was acceptable to the assessment team and hence the CAR#7(4) was closed.

5. The PP was asked to include the results of sensitivity and threshold limit in the PDD along with the explanation of likelihood of that scenario to happen.

In response, the PP has included the same in revised PDD version 5 along with the relevant explanation. The assessment team cross-checked the results of sensitivity and threshold limit in the financial sheet and found them acceptable. The same was also explained and included in the PDD. Hence the CAR#7(5) was closed.

6. PP is requested to justify the choice of companies for calculation of beta and justify why the number of companies has been limited to 6 when there are many companies listed in power domain. PP was also requested to provide screen shots for beta values considered.

In response, PP stated that all companies listed on BSE200 index which are engaged in power generation business and whose three year data is publically available have been chosen to represent the market scenario. PP also stated that BF Utilities & GIPCL have been excluded from the previous list as they are not part of BSE200 index and the new beta calculations were conservative and submitted to the assessment team for review. Bloomberg beta snapshots were also provided. The assessment team checked the beta calculations from the spreadsheet and found them to be appropriate and conservative.

Hence the justification was acceptable and the CAR#7(6) was closed.

7. PP was asked to justify the availability of implementation schedule used to calculate XIRR at the time of decision making.

In response PP stated that the source of the data was the offer letter from the technology supplier which was provided before the decision was taken to invest in the project activity. The assessment team checked the offer letter and found it to be appropriate. Hence the CAR#7(7) was closed.

The PP has submitted all the necessary documents and satisfactory responses for the issues raised above. All the documents have been verified and found to be valid and appropriate. As explained above IRR calculation sheet has been revised accordingly to adopt the changes requested and this was crosschecked against the assumptions and found to be consistent. Thus **CAR #07** was closed. Detailed discussions have been provided in Annex 3 under **CAR #07**.

Further to the above comments, it was observed during the UNFCCC completeness check that:

1. The submitted IRR spreadsheet is not reproducible and any modification leads to an error message. Hence, as per EB 48 Annex 60 paragraph 10 (a), CAR #07(8) was raised asking the PP to list all relevant assumptions, data, input values and references used in the investment analysis and the results of the investment analysis.

In response, the PP revised the investment analysis sheet to version 6 and provided all data, input values and reference in transparent and reproducible manner. The same was cross checked by the assessment team and was found to be appropriate. Hence CAR #07(8) was closed.

2. In the calculation of equity IRR, the loan portion of the investment was included in the investment analysis sheet. Hence CAR #07(9) was raised asking the PP to justify their calculation of equity IRR as per para 10 of EB62 Annex 5.

In response, the PP presented the calculation of equity IRR more clearly in the revised investment analysis sheet version 6. It was checked by the assessment team and was found to be in line with the requirements of para 10 of Guidelines on the assessment of investment analysis which states that in the calculation of equity IRR only the portion of investment costs which is financed by equity should be considered as the net cash outflow and the portion of the investment costs which is financed by debt should not be considered a cash outflow. The same was acceptable and hence CAR #07(9) was closed.

CAR#11(2) was raised as the residual value as per MPERC tariff order is 10% of its initial value over its 25 years life span, however in the financial calculation the PP has taken residual value as 10% of its initial

value after 20 years. In response the PP clarified that operational life time of wind turbine is 20 years and hence the residual value is considered after the 20 years of the operation. The same has been verified from the technology supplier undertaking and also found acceptable by the sectoral expert and hence the CAR#11(2) is closed out.

CAR#11(3) was raised as in the financial calculation the PP has considered the income tax depreciation rate on wind generators as 100% whereas per income tax act 1961, this value is 80%. In response the PP corrected the value to make it consistent with Income Tax Act Section-32 Rule-5 New appendix-1 and submitted the revised financial calculation and the PDD. The same is found acceptable and hence the CAR#11(3) is closed out.

Opinion

Based on the above mentioned discussion the validation team is of the opinion that the investment analysis satisfies all the relevant requirements of EB 62 Annex 5:

- The period of assessment considered for the project activity is 20 years, thus satisfying the requirements of paragraph 3 of EB 62 Annex 5.
- The fair value of the project activity assets at the end of the assessment period has been included as a cash inflow in the final year inline with paragraph 4 of EB 62 Annex 5
- The depreciation value has been deducted for calculating the gross profit and has been added back to the net profit for the purpose of calculating the Equity IRR. Thus, it satisfies the requirement of paragraph 5 of EB 62 Annex 5.
- All input values used in the analysis have been checked against the documentary evidences mentioned in section 4.7.1 above. The values have been found to be valid and applicable at the time of the investment decision taken by the PP. In addition, the values mentioned in the excel spreadsheet^{/2.6/} & the PDD^{/1.10/} have been consistently applied in all calculations. Thus, it satisfies the requirements of paragraph 6 of EB 62 Annex 5.
- There is no ceases after the commencement during the implementation, therefore paragraph 7 of EB 62 Annex 5 is not applicable.
- PP has submitted all versions of the excel spreadsheets; & all assumptions, links and formulae used in the sheet are readable; calculations are transparent & reproducible; all cells are viewable and unprotected. Thus, it satisfies the requirements of paragraph 8 of EB 62 Annex 5.
- For project activity equity IRR is used as financial indicator. Thus, paragraph 9 of EB 62 Annex 5 is not applicable.
- In the calculation of equity IRR the investment cost which is finance by equity has been considered as the net cash outflow and this has been verified in the IRR excel sheet. Thus, it satisfies the requirements of paragraph 10 of EB 62 Annex 5.
- For the project activity equity IRR has been calculated hence project IRR has not required to be calculated .Thus paragraph 11 of EB 62 Annex 5 is not applicable.
- PP has selected the Return on Equity as the benchmark, which is appropriate, as the financial indicator selected is Equity IRR. Thus, it satisfies the requirements of paragraph 12 of EB 62 Annex 5.
- The data used in the financial calculations sheet submitted by the PP were validated against parameters which are standard in the market and found to be appropriate. Thus, it satisfies the requirements of paragraph 13 of EB 62 Annex 5.
- The internal company benchmark is not used. Thus paragraph 14 of EB 62 Annex 5 is not applicable.
- The benchmark has been determined based on the parameters which are standard in the market and hence the cost of equity has been determined by calculating the cost of equity using best

financial practices, based on data sources which can be clearly validated by the DOE, which is in line with requirement of option (b) of paragraph 15 of EB 62 Annex 5.

- The internal company benchmark is not used. Thus paragraph 16 of EB 62 Annex 5 is not applicable.
- The internal company benchmark is not used. Thus paragraph 17 of EB 62 Annex 5 is not applicable.
- The project activity is financed through a mix of debt and equity (70:30) which has been validated by the MPERC wind tariff order^{/25/} and found that this value is typical debt/equity finance structure observed in the wind energy sector of the country. Hence the default values of the debt equity ratio are not required to be used.
- The benchmark analysis approach is appropriate, since the alternative to the project activity is the supply of electricity from the grid. Hence the requirement of EB-62 Annex-5 para19 is being met...
- All the assumptions that constitute more than 20% of either total project costs or total project revenues have been subjected to reasonable variations of + or – 10%. PP has presented the results of this sensitivity analysis in the PDD^{/1.10/} and the excel spreadsheet^{/2.6/}. The analysis is reproducible in the spreadsheet. Thus, it satisfies the requirements of paragraph 20 of EB 62 Annex 5.
- The sensitivity analysis appropriately covers a range from +10% to -10%, which is appropriate and hence satisfies the requirements of paragraph 21 of EB 62 Annex 5.

4.7.5 Barrier analysis (if applicable)

Not applicable to the project activity

4.7.6 Common practice analysis

Not applicable to the project activity

4.8 Application of Baseline Methodology and Calculation of Emission Factors

The proposed CDM project activity uses the simplified baseline methodology AMS I.D, version 17 as the project activity involves generation of electrical power by using wind energy and exporting the same to the NEWNE grid. For determination of baseline emission factor, the proposed CDM project uses “Tool to calculate the emission factor for an electricity system”, version 2.2.1. As per the identified baseline scenario, Para 12 of applied methodology AMS I.D., version 17 is applicable for the project activity, so the project proponent has chosen the option (a) i.e. combined margin (CM), consisting of the combination of 3-year generation-weighted average operating margin (OM) and build margin (BM) for the purpose of calculation of combined margin emission factor.

Actual CO₂ emission factor are used for the purpose. Value has been used from the **CEA data base version 06**, which is published by the Ministry of Power, Government of India. The CEA is the sole authority for publication of such data in India. The version of the database referred to is the one that was available at the time of webhosting the PDD for the ISHC.

Project proponent has clearly demonstrated the calculation of baseline emission factor in the PDD^{/1.10/}. The steps involves in the baseline emission factor calculation are:

Step 1) Identifying the relevant electric systems

As per CEA data base/version 06, The Indian electricity system is divided into two grids, the Integrated Northern, Eastern, Western, and North-Eastern regional grids (NEWNE) and the Southern Grid. Since, the project will supplied entire energy generated from the bundled project activity to the NEWNE grid, the relevant electric power system for the purpose of calculating the combined margin is selected as NEWNE grid, which is found appropriate.

Step – 2) Choose whether to include off-grid power plants in the project electricity system (optional)

PP has not opted for this step. Project participant has chosen only grid power plants to be included in the calculation to calculate the operating margin and build margin emission factor.

Step 3) Select a method to determine the operating margin (OM)

This step involves the selection of an Operating Margin method in which a three year generation weighted average based on the most recent data would be calculated ex ante and would be fixed for the entire crediting period. For the purpose of Ex-ante estimation of CERs, the Emission factor of the NEWNE grid was applied as it was the applicable grid for the project at the time of submission of the PDD for validation.

The project proponent has chosen the Simple Operating Margin (OM) method for the estimation of the baseline. The use of the Simple OM method is justified as the five years average share of the low cost/ run resources is 17.8% which is based on five most recent years (2005-2006 to 2009-2010). This constitute less than 50% of the total grid generation based on the power generation mix for the India electricity grid, which is validated from the CEA data base/version 06^{13/}.

With regards to data vintage, the project proponent has chosen the ex ante option for the calculation of the OM with a 3-year generation-weighted average, based on the most recent data available at the time of submission of the PDD to the DOE for validation, without requirement to monitor and recalculate the emissions factor during the crediting period.

Step 4) Calculate the Operating Margin emission factor according to the selected method

In this step PP has done the calculation of the OM according to the Simple OM method which is calculated as the generation-weighted average CO₂ emissions per unit net electricity generation (tCO₂/MWh) of all generating power plants serving the system, not including low-cost / must-run power plants / units. The data has been taken from Central Electricity Authority: CO₂ Baseline Database, Version 06, which is the latest available official data at the time of submission of PDD for validation (webhosting the PDD for the ISHC).

The Simple OM has been calculated using the formula as mentioned in the “*Tool to calculate the emission factor for an electricity system*”, version 2.2.1 which has been verified from the tool and found to be inline.

The Operating Margin (OM) is determined using the ex-ante option for data using 3-year generation-weighted average, based on the most recent data available at the time of submission (year 2007-08, 2008-09 and 2009-10) and will remain fixed throughout the crediting period.

The CO₂ emission factor for simple OM and build margin BM have been directly taken for CEA data base version 06 (calculation of OM and BM are based on EB 50, Annex 14; Tool to calculate the emission factor for an electricity system, version 02). Although the latest version of “Tool to calculate the emission factor for an electricity system” is version 02.2.1, the calculation approach of OM and BM is same as of version 02. Hence, the approach is acceptable.

Year	2007-08	2008-09	2009-10
CO ₂ emission factor for simple OM (tCO ₂ /MWh) (incl. Imports)	0.99990	1.00655	0.97774
Net Electricity Generation in OM (MWh)	401641585.97	421802632.89	458043084.56
Generation weighted Operating Margin (OM) (tCO₂/MWh)	0.9941		

Step 5) Calculate the build margin emission factor

In terms of vintage of data, a project participant has opted to choose Option 1 for the project activity. For the first crediting period, calculate the build margin emission factor ex ante based on the most recent information available on units already built for sample group *m* at the time of CDM-PDD submission to the DOE for validation.

Build Margin is calculated using option (1) of the tool which allows calculating the build margin emission factor ex-ante based on the most recent information available on units already built at the time of CDM-PDD submission to the DOE for validation. It was verified by the assessment team that the plant data used from calculating build margin was the most recent that was publically available at the commencement of validation.

The CO₂ emission factor in build margin (BM) has been directly taken for CEA data base version 06 which excludes the CDM registered projects in the analysis (calculation of OM and BM are based on EB 50, Annex 14). Although the latest version of "Tool to calculate the emission factor for an electricity system" is version 02.2.1, the calculation approach of OM and BM is same as of version 02. Hence, the approach is acceptable.

The build margin emission factor which has been calculated by the generation-weighted average emission factor (tCO₂/MWh) of all power units during the most recent year for which power generation data is available and follows the calculation as the per the applied tool.

Based on the CEA data base version 06, the value of BM (for the year 2009-10; most recent) works out **0.81231** tCO₂/ MWh. Therefore,

$$BM = 0.81231 \text{ tCO}_2/\text{MWh}$$

Step 6) Calculate the combined margin emissions factor

Calculation of the combined Margin as per the tools which was found to be correct.

The combined margin will be calculated as follows:

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times w_{OM} + EF_{grid,BM,y} \times w_{BM}$$

Where,

EF_{grid,BM,y} = Build margin CO₂ emission factor in year y (tCO₂/MWh)
EF_{grid,OM,y} = Operating margin CO₂ emission factor in year y (tCO₂/MWh)
w_{OM} = Weighting of operating margin emissions factor (%)
w_{BM} = Weighting of build margin emissions factor (%)

The default values to be used for Wind Power generation Project activities

$$w_{OM} = 0.75 \qquad w_{BM} = 0.25$$

Hence, the Baseline Emission Factor is calculated as below:

$$\begin{aligned} EF &= w_{OM} * OM + w_{BM} * BM \\ &= 0.75 * 0.99410 + 0.25 * 0.81231 \\ &= 0.94865 \text{ t CO}_2/\text{MWh} \end{aligned}$$

The project activity uses the simplified baseline and monitoring methodology AMS I.D Version 17. The applicability conditions of the methodology have been discussed in section 4.5 above. The PP has correctly identified the baseline as per paragraph 10 of AMS I.D Version 17. This has been described in section 4.7 above.

Baseline emissions (BE_y) – The combined margin emission factor, baseline emissions and emission reductions calculations have been mentioned in the emission reduction excel sheet^{4/} and the PDD^{1.10/}. The baseline emissions equivalent to tCO₂ due to the project have been calculated as the product of the net electricity supplied to the grid and the grid emission factor as per the combined margin approach described in latest available 'Tool to calculate the emission factor for an electricity system' (version 02.2.1). The power produced will be exported to the NEWNE grid. Hence, the grid emission factor and the corresponding

baseline emissions have been calculated for the NEWNE grid. The grid emission factor has been arrived at as per paragraph 12(a) of AMS I.D Version 17 as mentioned above .

The baseline emissions for the project activity have been calculated as the product of the net electricity supplied to the grid and the grid emission factor as per paragraph 11 of AMS I.D Version 17. The PP has rounded down the value of total baseline emissions in order to be conservative. The baseline emissions for the project activity have been calculated to be 233,380 tCO₂e.

Project emissions (**PE_y**) – The project activity involves the generation of electricity using wind energy. Hence, there are no project emissions associated with this project activity as per paragraph 20 & paragraph 21 of AMS I.D Version 17.

Leakage (**LE_y**) – Leakage has not been considered for the project activity. According to paragraph 22 of AMS I.D Version 17, if the energy generating equipment is transferred from another activity or if the existing equipment is transferred to another activity, leakage is to be considered. The proposed project activity uses new energy generating equipment which has been verified from the purchase order^{/16/}. Thus, not considering leakage for the project activity is appropriate.

Emission Reductions (**ER_y**) – The emission reductions for the project activity have been calculated as per paragraph 23 of AMS I.D Version 17 as follows: **ER_y = BE_y – PE_y – LE_y**

Based on the values of baseline emissions, project emissions and leakage the annual emission reductions have been calculated as 23,380 tCO₂e.

CAR #03 was raised by the assessment team asking the PP to correct the PDD as per the PDD template available on the UNFCCC website. PDD section 'Summary of ex-ante estimation of emission reductions' was wrongly numbered with respect to the numbering in the PDD template. In response, the PP correctly numbered the section as B.6.4. This was found in line with the requirements, however PP was further requested to clarify about the calculation approach of the OM as the same is not found in compliance with the tool 'Tool to calculate the emission factor for an electricity system' as per EB-63 Annex-19. In response PP corrected the emission factor calculation in which operating margin is based on the 3-year generation-weighted average, based on the most recent data available at the time of submission of the CDM-PDD to the DOE for validation. The same is found inline with the EB-63 Annex-19 and hence the CAR#03 is closed out.

Opinion

Based on the above discussion and the requirements of paragraphs 89-93 of the VVM version 01.2^{/5/} (EB 55 Annex 1), the assessment team confirms that:

1. All assumptions and data used by the PP are listed in the PDD^{/1.10/}, including their references and sources
2. All documentation used by the PP as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD^{/1.10/}
3. All values used in the PDD^{/1.10/} are reasonable in the context of the proposed CDM project activity
4. The baseline methodology AMS I.D Version 17 has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions
5. All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD^{/1.10/}.

4.9 Application of Monitoring Methodology and Monitoring Plan

The present CDM project activity uses monitoring methodology AMS I.D version 17 entitled "Grid connected renewable electricity generation". The monitoring methodology applies consistently the choice of the option selected for monitoring both of project and baseline emissions. The monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period. The information given for the monitoring variables by the presented table is sufficient to ensure the verification of a proper implementation of the monitoring plan. The PP has mentioned the apportioning procedure followed by the DISCOM for the calculation of net electricity supplied to grid in monitoring section B.7.2 of PDD.

The data required to be monitored ex-post is net electricity generation from the project activity. The electricity exported to and imported from the NEWNE grid will be monitored by the main meter at the Ratedi Hills site substation by the representative of the State Utility in presence of O & M contractor. The electricity metering is common and includes the wind turbines of the other developers also and provides the aggregate electricity supplied by all wind farms including the project activity. Hence net electricity supplied to the grid is based on apportioning procedure based on the guidelines of the State Electricity Board. The meters are under the control of the Board. The data will be kept for two year following the end of the fixed crediting period.

In line with this, the monitoring procedure to calculate the net electricity supplied to the grid has been described in section B.7.1 of the PDD^{1.10/} where:

1. **EG_y** refers to Net electricity supplied to the grid by the project

Since, the substation energy meter is connected with the WECs of multiple project proponents; an apportioning procedure is applied by the DISCOM to determine the electricity generated by the WECs of an individual project proponent. The apportioning procedure is basically the equal distribution of the transmission losses among all the WECs connected with the same energy meter installed at the substation. Further the electricity break-up or apportioning of electricity is done as per the procedures described by the DISCOM and steps prescribed in PPA. Apportioning is under the jurisdiction of DISCOM and the PP is not involved (directly or indirectly) in it. This apportioning procedure is predominant and well accepted in the state. However for cross checking this value, controller (LCS) export values of all the project WECs will be monitored and the same will be used as crosscheck for the value of the net electricity supplied by the project activity WECs. As the value of parameter 'Net electricity supplied to the grid by the project' will always be less than controller (LCS) export value considering the electricity import for WECs and transmission losses.

2. **ΣE_{project, Controller, Export}** refers to the summation of electricity exported by the Project WECs

This parameter is for the summation of the electricity exported by the individual project activity wind turbines which is measured by their respective LCS. The data monitoring will be continuous by the online monitoring system. The value of this parameter will be used along with the non project WECs controller's export for calculating the import and export multiplication factor for the apportioning procedure. As per which apportioned value of electricity import and export by each WEC ($E_{WEC, Export}$ and $E_{WEC, Import}$) is calculated. The same will also be used as crosscheck for the value of the net electricity supplied by the project activity WECs. As the value of parameter 'Net electricity supplied to the grid by the project' always be less than this value considering the electricity import for WECs and transmission losses. It has also been validated from the manufacturer's manual that LCS meter is self calibrated meter and its subsequent calibration by the PP is not required.

In annex-4 of the PDD^{1.8/} it is also mentioned that energy readings of the electricity generated at the LCS meter is cross verified by the energy calculated by inverting system installed in the WECs. It has been validated from the Supplier's Technical manual^{50/} that in case there is any mismatch in the energy values recorded by the LCS meter and the energy values calculated by the inverting system; the machine will stop working and will also generate the error report.

3. **E_{JMR, Export}** refers to electricity exported by all the WECs

This parameter is the summation of the electricity export values for all the WECs (including project and non project). This value will be measured with the Trivector type energy meter with accuracy class of 0.2% situated at Ratedi Hill substation. This meter will be under the control of the state utility. Here the Joint meter readings will be taken by the O & M contractor and state utility officials. Although this parameter is not being directly used in the ER calculation purpose but on the basis of the same breakup sheet will be prepared by the O & M contractor for the different customers (WECs owners). This Document will be duly endorsed by the state utility. The detail procedure of the apportioning has been explained in the section B.7.2 of the PDD which is found as per the requirement of the PPA.

4. **E_{JMR, Import}** refers to electricity imported by all the WECs

This parameter is the summation of the electricity import values for all the WECs (including project and non project). This value will be measured by the energy meter with accuracy class of 0.2% situated at Ratedi Hill substation. This meter will be under the control of the state utility. Here the

Joint meter readings will be taken by the O& M contractor and state utility officials. Although this parameter is not being directly used in the ER calculation purpose but on the basis of the same breakup sheet will be prepared by the O& M contractor for the different customers (WECs owners). This document will be duly endorsed by the state utility. The detail procedure of the apportioning has been explained in the section B.7.2 of the PDD which is found as per the requirement of the PPA.

Other parameters mentioned in the section B.7.2 i.e. $\sum E_{\text{Controller, Export}}$ which is electricity exported by all the WECs (by project activity and the turbines from other wind farm developers) connected to the main meter at the substation, measured at the controller of each WEC. Controller assigned to each WEC of project activity only is under purview of PP and same is already mentioned as the monitoring parameter. But the controller assigned WECs of the other wind farm developers is beyond the control of the PP and hence the same is not included as the monitoring parameter in the section B.7.1 of the PDD which is found appropriate and hence accepted.

The assessment team is of the opinion that the monitoring plan is in compliance with the requirements of the methodology AMS I.D. Version 17. It is also confirmed that monitoring arrangement described in the monitoring plan are feasible within the project design

Discussion on CARs/CLs

CAR #05 was raised asking the PP to clarify the calculation of net electricity supplied to the grid by the project activity and clarify the application of the formula $EG_y = \sum_{\text{Project}} E_{\text{WEC, Export}} - \sum_{\text{Project}} E_{\text{WEC, Import}}$. The PP was also asked to furnish a copy of the JMR report to the assessment team.

In response, the PP stated that $\sum_{\text{Project}} E_{\text{WEC, Import}}$ and $\sum_{\text{Project}} E_{\text{WEC, Export}}$ gives the electricity imported and exported by the WTGs included in the project activity only and thus electricity from project WTGs and non-project WTGs can be segregated using the formulae. The assessment team is of the opinion that the formulae used are correct and the same were also updated in the revised PDD. Breakup sheet signed by DISCOM was also checked to verify the apportioning approach and was found acceptable. However CAR#5(1) was further asked as the PP is using number of parameters to calculate the quantity of net electricity supplied to the grid instead of directly metering it but the PP has not mentioned the same as monitoring parameter in the section B.7.1 of the PDD. In the response of it the PP has clarified that at project site WECs belonging to other promoters(not part of project) are also connected to same feeder in which project activity WECs connected and metering of electricity supplied is being done through common meters(main and check meters) installed at sub-station. These energy meters are owned and under control of state electricity authority. As per the conditions of the PPA^{28/}, project participants can not intervene into this metering process. Hence it is not possible to measure the net electricity supplied to grid by project activity (EGy) directly. This parameter (EGy) is taken from monthly energy breakup sheet jointly certified and signed by state electricity authorities (MP Power Trading Co. Ltd) and O& M contractor.

The energy breakup sheet is based on the apportioning procedure which is done on the basis of the export and import multiplication factors These factors require the use of the electricity generation by all WECs including non-project WECs. Since It is beyond PP's control to do the monitoring of the WECs which are not owned by them and hence the same not be mentioned in the section B.7.1 of the PDD. However the PP has included a new monitoring parameter $\sum E_{\text{project, controller, Export}}$ in the section B.7.1 which is the summation of the electricity exported as measured at the controller of individually WEC. This value will be used to crosscheck the value of net electricity supplied to the grid as this value cannot be higher than that the summation of the electricity exported as measured at the controller of individual WEC. This is found a valid crosscheck and hence the response from the PP is found acceptable and the CAR#5(1) is closed out.

CAR#5(2) was also raised in which PP was requested to include the clear information regarding the ownership of the metering system e.g. whether this is under the PP or state grid control and explain the same with a schematic diagram to illustrate the relationship and boundary between the proposed CDM project and "the turbines from other wind farm developers at the project site". In the response PP clearly included information about the ownership of the different meters and confirmed that Main and check energy meter located at the substation are under the control of the state utility (State Grid) ,however the LCS (controller) assigned to each WECs are owned by the PP.DOE has also validated the same from PPA..PP has also included a diagram clearly indicating the relationship and boundary between the proposed CDM

project and "the turbines from other wind farm developers at the project site". Hence the response from PP is found acceptable. However the CAR#5(2)(a) was further raised in which PP was requested to clarify why the value of the build Margin is not clearly explained in the Step-5 of the section B.6.1 of the PDD similar to the OM value. In the response PP revised the PDD by clearly mentioning the value of the BM as 0.81231 tCO₂eq/MWh which is found consistent with the "CO₂ Baseline Database for the Indian Power Sector", Version 6.0, March, 2011; published by Central Electricity Authority (CEA), Government of India. Hence the response from the PP is found acceptable and the CAR#5(2)(a) is closed out.

CAR#5(2)(b) was raised in which PP was requested to clarify why the PP has not included the parameter $E_{JMR, import}$ and $E_{JMR, Export}$ which is related to electricity export and import of all WECs (including project and non project WECs) in the section B.7.1 of the PDD. In the response PP has included the same in the section B.7.1 of the PDD. The same has been validated and found that monitoring arrangement described in the monitoring plan are feasible within the project design and in compliance with the methodology requirement. Hence the response from the PP is found correct and the CAR#5(2)(b) is closed out.

CAR#5(2)(c) was raised in which the PP is requested to clearly explain about the parameters $\sum_{Project} E_{WEC, Export}$ and $\sum_{Project} E_{WEC, Import}$. In the response PP clearly explained the same in the revised PDD stating that these are the summation of apportioned value of electricity exported and imported by WECs of project activity respectively. The response from the PP is found acceptable. However PP was further requested to provide the clear information about the WECs of the other wind farm developers which are available at the same site. In the response PP clearly mentioned the information in the section A.2 of the revised PDD about the machines of the other project developers which are also connected to the same feeder. The same is found consistent to the information provided in the section B.7.2 of the PDD. Hence the response from the PP is found acceptable and the CAR#5(2)(c) is closed out..

CAR#10(3) was raised as in the section B.7.1 of the PDD the source of data for the parameter EGy was mentioned as the breakup sheet signed by DISCOM authorities. However in the section B.7.2 it was mentioned as JMR. PP is requested to clarify this inconsistency. In response PP corrected the PDD and consistently mentioned the source as 'breakup sheet signed by DISCOM'. The same is found acceptable and hence the CAR#10(3) is closed out.

CAR#11(1) was raised as the latest version of the "Tool to calculate the emission factor for an electricity system" is not followed in the PDD. In response the PP submitted the revised version of the PDD by making it consistent with the latest version of tool (Version 2.2.1, EB-63 Annex-19). The same is found acceptable and hence the CAR#11(1) is closed out.

Further, monitoring information provided in Section B.7.2 and Annex 4 to the PDD completely describes the monitoring plan to be followed for proper operation and maintenance of the project activity. The parameter used for the calculation of emission reductions are Net electricity supplied to the grid by project activity. This parameter is a calculated parameter by apportioning procedure and taken from breakup sheet. The PP is monitoring all required parameter used for the apportioning procedure as mentioned in section B.7.1 of the revised PDD. The operating margin and built margin emission factors are fixed ex ante parameters and are taken from the latest available version 6 of CEA baseline database at the time of submission of the PDD to the assessment team. The monitoring plan described the positioning of the equipments. The meters are calibrated by state electricity board on annual basis. O&M team will ensure joint monthly reading with state authorities which has been verified during the site visit by the assessor. From the above discussion, it has been concluded that the PP has sufficient ability to implement the monitoring plan.

Opinion

Based on the above discussion and the requirements of paragraphs 122-124 of the VVM version 01.2 (EB 55 Annex 1), the validation team confirms that:

1. The monitoring plan included in the PDD^{/1.10/} is based on the approved methodology AMS I.D version 17 which has been applied to the proposed CDM project activity
2. The monitoring plan is in compliance with the applied methodology AMS I.D version 17
3. The monitoring arrangements described in the monitoring plan are feasible within the project design
4. The PP has the ability to implement the monitoring plan as per the PDD^{/1.10/}

5. The calibration of the energy meters installed at the substation will be done on annual basis by the State Electricity Transmission/ State Electricity Board., this is in line with the requirement of para 17 (c) of Annex 21 of EB 61. It has also been validated from the manufacturer's Technical manual^{/50/} that LCS meter is self calibrated meter and its subsequent calibration by the PP is not required.
6. The electricity will be monitored with help of the class 0.2s energy meters. The electricity will be continuously monitored and the data will be recorded on monthly basis. This is in accordance with requirement of para 24 of the applied methodology AMS I. D. Version 17.

4.10 Environmental Impacts

The proposed project activity contributes to generation of green power and is expected to benefit the economic development of the region. Thus, the project activity is expected to have only beneficial impacts and no adverse impacts are foreseen. The project activity is in compliance with all current applicable legislations and license for its activity.

The project proponent has mentioned in the PDD^{/1.10/} that the present project activity does not require EIA to be carried out because as per the schedule 1 of Ministry of Environment and Forest notification dated Dec 01,2009 <http://moef.nic.in/downloads/rules-and-regulations/3067.pdf>^{/44/} 30 activities are required to undertake environmental impact assessment studies. The proposed project activity does not fall under this category and hence EIA is not required to be done.

Opinion

The validation team is of the opinion that the project complies with environmental regulations in India.

4.11 Local Stakeholder Comments

The project proponent identified the relevant stakeholder like local villages, Gram Van Samiti, Forest Department, Enercon (India) Ltd and operators working at the project site as local stakeholders for the project activity. The local stakeholders were invited through advertisement published in local newspaper in local language on 10/01/2011. The meeting was conducted on 25/01/2011. The PP has provided the Minutes of meeting, attendance sheet of stakeholders^{/30/} consultation to the assessment team. It has been checked for any comments from the minutes of meeting and found that there were no negative comments received from the local stakeholders and is accepted.

The stakeholders meeting was conducted on 25/01/2011 and PDD was web hosted on 01/07/2011. Thus it is confirmed as per the VVM version 1.2 requirement that the local stakeholder's comments are invited for the project activity prior to the publication of PDD.

Opinion

According to the requirements of the paragraphs 128-130 of the VVM version 01.2 (EB 55 Annex 1), the validation team is of the opinion that the local stakeholder consultation process has been satisfactorily carried out.

5. Comments by Parties, Stakeholders and NGOs

In accordance with sub-paragraphs 40 (b) and (c) of the CDM modalities and procedures, the project design document of a proposed CDM project activity shall be made publicly available and the DOE shall invite comments on the validation requirements from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available. This chapter describes this process for this project.

5.1 Description of How and When the PDD was Made Publicly Available

The Project Design Document for this project was made available on the website <http://cdm.unfccc.int/Projects/Validation/DB/RI5A4FW8KYXSDIRGN7PGSPWMKEIC7A/view.html> and was open for comments from 01/07/2011 until 30/07/2011. Comments were invited through the UNFCCC CDM homepage

5.2 Compilation of all Comments Received¹

Comment Number	Date Received	Submitter	Comment
1	25/07/2011	Sud Sudcdm1@gmail.com	<ol style="list-style-type: none"> DOE to write to the party who prepared the DPR/FR which is submitted to the banks and other agencies and the same is verified against the one submitted to the DOE by PP/Consultant. DOE must not entertain this project any more if found the DPR/FR is tampered with at any point in time. PP cannot give different DPR's and FR's. They must submit only the one given to Banks and other agencies while obtaining loans and decision making time. DOE to ensure that the PDD values are consistent and ensure that the CDM project is a genuine project DoE to check the Detailed Project Report and Feasibility Report which is submitted to the other agencies and Banks by Project owner and ensure that the values match with the DPR/FR submitted to DoE also. Careful study must be done so that the DPR/FR is not in different versions made and submitted with different purposes to different agencies, which is totally unacceptable, illegal and unethical. Project owner should show some undertaking letter from bank manager to DoE stating that both DPR's are same. These kinds of letters should not be accepted and entertained by DoE at face value, but must be checked independently. While collecting the DPR/FR from banks and other agencies, all DPR/FR pages should be counter signed by Banks and other agencies so that the real DPR/FR given to other parties by the PP/Consultant is same as the one submitted to DOE. DPR/FR values must be probed fully. DOE must take a written undertaking from the PP/Consultant about the list of parties to whom this DPR/FR is submitted and for what purposes. Then DOE should cross check with all the parties and confirm that the same DPR/FR is submitted to all the parties correctly without any changes. DOE must not accept any reports and undertakings from PP/Consultant. DOE must make independent evaluation and use totally different parties without informing the PP or Consultant to cross check the facts. Has the PP considered the CDM revenues while envisaging

¹ COMMENT FROM DOE: some text has been removed (Hidden) for the purpose of comment publication as it was not project specific and of slanderous nature towards the PP and the DOE. It has however been communicated in full to the CDM Secretariat for transparency.

Comment Number	Date Received	Submitter	Comment
			<p>the project? Without CDM the project was not viable, is it right? This project is having a debt component? Then how bankers or lenders gave the loan? Have the bankers or lenders considered the CDM revenues while agreeing to give loan to this projects? If not this project should be rejected right away by DOE by terminating the contract forthwith. If yes, where is the proof? What is the date of the evidence document from bank? Is this document printed now a days or earlier? DOE to independently check the same. If the document is available from Bank it must be checked from all angles so that it is genuine [REDACTED]. This is normally done, DOE to be aware of this please. Please check the communication the PP had during that time with banks, emails and postal receipts and the weights and dates mentioned on the receipts. Do not believe in courier bills and receipts [REDACTED]. Insist on government owned postal service receipts only. If the project is fully equity project then on what basis the PP has invested full equity in to the project while considering the CDM revenue? DOE to check the same in detail and bring out the facts. Is there any past record of this PP to invest or not to invest at returns what he is talking about in this project? Proper evidences must be reviewed and digged out by the DOE and take decision on the project based on established facts. Do not ask documents from PP, DOE to collect the same from different sources to do independent evaluation.</p> <p>9. How is the base line defined in this project? Is Base line hypothetically defined with no proper evidences and proper justification? In such case, DOE cannot take the base line as suggested by the PDD. Please check that there are real emission reductions beyond the real and factual base line. It may so happen that this project qualifies for no CER's. DOE cannot assume values and things as giving by this PP. Whatever values are considered throughout the project in all documents including the real DPR (not the one prepared for CDM, the one given to the banks and others), they must be validated, verified and double checked. Do not ask PP for DPR. Ask the parties who have been given DPR by the PP. Get directly from the bank and others by each page of the DPR and Feasibility report signed. Such document can be considered as a real DPR or FR. [REDACTED]</p> <p>10. From DOE side which auditor has done marketing and business development for acquiring this business of validating this [REDACTED] -ordinating at PP or CER buyer? The same person who has done the marketing and business development to acquire the business do validation or participate in any manner what so ever in the validation process? One cannot do like that. It is against the accreditation rules and norms followed since ages. DOE should send auditors from different offices or countries to do this validation audit. DOE must take care of impartiality and accreditation rules. Due to the targets set by the DOE managements auditors are doing marketing and meeting</p>

Comment Number	Date Received	Submitter	Comment
			<p>clients and giving promises that the project will be taken care. Is it acceptable and fair? This must be stopped. No auditor should do marketing. Only non-auditing staff should do marketing. DOE to ensure the same please.</p> <p>11. If applicable only: Is these machines, equipment was a part of any bundle of CDM activity envisaged and developed earlier. DOE to check the same through independent sources also. Once some bundles are non-additional and getting negative validation from a DOE, PP is rolling out the same project as an individual project which is not a CDM project at all. DOE to verify the same from independent sources and also take undertaking in the form of an affidavit from the PP's that any misrepresentation or false statement with respect this would attract strict legal action from UNFCCC and DOE. Furthermore the registered project must be de-registered in case of any future findings contradicting the submissions made by the project owner.</p> <p>12. DOE to be more careful so that this is a genuine CDM project. What is the exact project cost? The project cost is covering what? Each value considered must be validated with proof. The machinery is second hand purchased or fresh and new from an OEM? In either case DOE to check all the quotations, proposals, purchase orders, invoices, way bills, transport bills, proof of payments like bank statements. DOE to check with banks by way of written confirmation the amount transacted, to whom the money is paid, when the money is paid, is the party paid is the correct party as shown in the purchase orders.</p> <p>[REDACTED]</p> <p>this must be probed thoroughly and real values to taken for additionality calculation. Then I'm sure the additionality is not there at all in such a situation</p> <p>13. Is the project equipment purchased second hand equipment or sourced from cheap foreign sources? If yes, the issue must be probed by DOE. Total project costs mentioned by PP will not be the same as originals. Hence no additionality. These facts must be probed in full by DOE by checking all documents and money transactions along with bank statements and certified accounts by a legally acceptable financial analyst..</p> <p>COMMENT FROM DOE: some text has been removed for the purpose of comment publication as it was not project specific and of a slanderous nature towards the PP and/or the DOE. It has however been communicated in full to the CDM Secretariat for transparency.</p>
2	25/07/2011	Karthikeyan , carthik2010@gmail.com	<p>14. There is no information in the PDD how the project is fulfilling the conditions of Annex 13, EB 62.</p> <p>15. Both the projects seem to be Enercon's sister concerns. DOE should check the Balance Sheets of both Enercon India the supplier and the two PPs and see how the payment has been accounted. If the cost is shown as sundry debtors or unsecured loans in PPs</p>

Comment Number	Date Received	Submitter	Comment
			<p>books (and a mirror entry in Enercon's Balance Sheet), it only means that the payment has not been made. The company can also convert the payment into deferred payment without any bank guarantee or drawing bills. It is another form of unsecured loan. Such arrangement only means that the company is converting its stocks into projects to claim CDM benefits. Can the projects claim CDM benefits without taking investment risk? These projects should be rejected if there is no bank proof of payment is furnished.</p> <p>16. However, since the PDD mentions bank loan of 70%, the DOE should ask for the sanction letter and loan application letter and see whether the loan has actually been sanctioned.</p> <p>17. How the PDD shows this as a single project? There are two PPs. It should be a bundled project. Number of WECs owned by CEPSCO Industries and Enercon (India) Power Development is not disclosed anywhere. The PDD is not transparent. How can such a PDD allowed to be web hosted by DOE?</p> <p>18. When MPERC has recommended PLF of 22.5%, on what basis the projects have taken 19.5% PLF. In a recently registered project using Enercon WECs (project No.3350), PLF is given as 22.5%! Does it mean that the efficiency of Enercon WECs have come down or it is being done to make the projects additional? DOE should not accept any PLF less than 22.5%. Third party PLF estimation are the most non-credible document and it is possible to get third party estimation for even 10% PLF.</p> <p>19. None of the manufacturer's charge more than 5% escalation. In the case of project 3350, Enercon itself has charged only 5% escalation. Does it mean that Enercon will charge lower escalation rate to outsider and higher escalation rate to its own companies! How strange!</p> <p>20. How can Enercon give an offer its own companies? DOE should ignore these offers and get the appraisal note from the banks and check the cost and all input parameters and should adopt the same input parameters.</p> <p>21. For book depreciation the PDD gives reference of Income Tax Act for restricting the depreciation to 90% of value. Does the consultant know the difference between book depreciation and IT depreciation? Moreover, which section of IT Act restricts the depreciation to 90%?</p> <p>22. Strangely, the consultant gives IT depreciation as 15%. Does the consultant know what IT Act is? It is 100% for this project – 80% accelerated depreciation plus 20% initial depreciation. If the project is not claiming accelerated depreciation, then also it is eligible for 35% depreciation and in that case it can claim Generation Based Incentive given by the Govt. at 50 paise per Kwh. The tariff will go up to Rs.4.85/kWh. Consultant wants to avoid accounting this. Further what about REC income? Why it is not accounted?</p> <p>23. Why does the company want working capital? What is the capital blocked to generate power? Even O&M cost is to its own parent company. This is absolutely unsustainable and DOE should not allow this.</p> <p>24. When MPERC has recommended a return of only 16% on equity on what basis the PP is expecting 18.61%? Consultant has not given the estimation of return on equity. This is not transparent and DOE should not have allowed the PP to webhost this project. Moreover, this return is very high compared to default return prescribed by EB.</p>

Comment Number	Date Received	Submitter	Comment
			<p>DOE should not allow this return</p> <p>25. How is equity IRR considered correct for this project? It is financed 70% by loan. On what basis consultant claims that equity IRR is appropriate for this project activity. This financial indicator is not in line with Additionality Tool. DOE should insist on project IRR and should not accept equity IRR></p> <p>26. The project's start date is 28/10/2010. Therefore, it should have started operation before March 2011. Hence, the investment (if at all made by the PPs) will be in the same year as the start of operation. DOE should deduct the investment from the cash generation of the first year in computing IRR. Consultant will not do it because it will increase the IRR and make the project viable without CDM.</p> <p>27. For the given input parameters, the IRR should be more than 11% if tax saving is taken into account and PLF is taken at not less than 22.5%. The IRR of 7.36% indicates that PP has not taken into account the tax saving or has taken PLF at low level. PLF should not be less than 22.5%.</p> <p>28. This project is not additional</p>

5.3 Explanation of How Comments Have Been Taken into Account

In response to the issues raised by stakeholders during the ISHC period, the PP provided the following responses:

Comment 1 :

These comments question the DPR and its validity and authenticity. In response, the PP stated that the DPR was prepared on 24/09/2010 based on the Enercon (India) Ltd's offer which was before the decision date for investing in the project activity through CDM i.e. 30/09/2010. The values and assumptions mentioned in the PDD are consistent with the DPR and the same assumptions have been used to do the financial analysis for the project activity. All the documental evidence have been referenced or submitted to the DOE. The assessment team has cross checked the values and assumptions mentioned in the DPR with publically available references and with other CDM registered projects and found them to be appropriate. Hence the comment was closed.

Comment 2:

As explained above assessment has verified that provided DPR is authentic and has not been tempered. Hence the comment was closed.

Comment3:

All the input values mentioned have been crosschecked by DOE with publically available references and with other registered CDM projects and found acceptable. Hence the comment was closed.

Comment 4:

Values mentioned in the DPR have been crosschecked by DOE and found consistent with the DPR submitted to the bank. Hence the comment was closed.

Comment-5:

DOE has verified that there is no such case for preparation of different version of DPR/FR for different agencies. Hence the comment was closed.

Comment 6:

As explained above authenticity of the DPR has been verified by the verification team and found correct. Hence the comment was closed.

Comment 7:

Authenticity of the DPR has been verified by the DOE and found it correct. Hence the comment was closed.

Comment 8:

A copy of DPR, Loan application letter has been submitted by the PP. Investment analysis has been done based on the assumptions taken while making the investment decision. The same was based on the DPR and the values are consistent in the investment analysis spreadsheet and the PDD. DOE has done the validation independently and has cross checked all the assumptions mentioned in the DPR. Hence the comment was closed.

Comment 9:

The PP was asked to justify the baseline defined in the PDD. In response, the PP mentioned that the applied methodology, AMS I.D version 17, defines the baseline for the project activity and the same has been applied in the PDD. Further the PP stated that the baseline has been defined as ex-ante for the project activity and has been calculated using combined margin approach. The same is acceptable to the assessment team and hence comment closed. Hence the comment was closed.

Comment 10:

In response to the comment, DOE replied that the marketing and auditing teams are separate in the company and thus there is no overlapping of responsibilities and no conflict of interest situation may arise. Hence the comment was closed.

Comment 11:

The point is not applicable as the PP has mentioned in the PDD that the project activity is not a debundled component of another small scale or rejected project activity. The same was found to be appropriate during the site visit and hence closed.

Comment 12:

In response to the genuineness of the CDM project activity, the PP provided the purchase order and offer letter as proofs to the DOE. The DOE has checked all the documents provided by the PP in this regard and were found to be appropriate. The same was also verified during the site visit. Hence the comment was closed.

Comment 13:

In response to the comment, the PP stated that the project is a Greenfield project and the equipment used in it is purchased anew. For the same PP submitted the purchase order and offer request for proposal and offer letter from the technology supplier and clearances from regulatory bodies. All the documents were verified by the DOE and found to be appropriate. Hence the comment was closed.

Comment 14:

The comment was raised to ask PP to provide evidence of prior consideration of CDM for the project activity. The same point has been satisfactorily addressed in CL#06. Hence the comment was closed.

Comment 15:

The issue was raised as Cepco Industries Pvt. Ltd. (Cepco) and Enercon (India) Power Development Pvt. Ltd. (EIPDPL) were considered to be sister concerns. In response, PP stated that both the companies are two separate legal entities and Cepco has made EIPDPL as another PP and authorised it to carry out the CDM activities for this project on its behalf. Any comment related to this is irrelevant. Assessment team confirms the same based on the authorisation letter and other documents provided. Hence the comment was closed.

Comment 16:

In response to the comment the PP confirms that loan for the project was actually availed by the PP from the Union Bank of India. The loan application and sanction letters have been submitted to the DOE in this regard. The documents have been assessed by the DOE and found to be correct. Hence the comment was closed.

Comment 17:

The project is not a bundled project. The same had been verified by the assessment team. Hence the comment was closed.

Comment 18:

The comment was raised to ask for the validity of the PLF considered for the project activity. In response the PP stated that the PLF was conservatively chosen between the offer letter from the technology supplier and third party PLF study, thus satisfying the "Guidelines for the reporting and validation of Plant load factors" (EB 48, Annex 11).

Comment 19:

O&M escalation rate has been appropriately taken by the PP and same has been cross checked with the O& M escalation considered in other registered CDM Projects in the same state where the project activity is located. Hence the comment was closed.

Comment 20:

Cepco Industries Pvt. Ltd. (Cepco) and Enercon (India) Limited are separate companies. Hence comment is not valid.

Comment 21:

The comment was raised regarding the use of book depreciation and IT depreciation in financial analysis. In response PP stated that book depreciation referenced from MPERC Order dated May 2010 has been used in the financial analysis and the same has been reproduced in the PDD. DOE checked the reference, the financial model as well as the PDD and found them to be consistent. Hence the comment was closed.

Comment 22:

In response to the comment on the use of accelerated depreciation, the PP revised the financial analysis to include accelerated depreciation instead of GBIs in the investment analysis. The revised PDD and financial sheet were submitted to the DOE. DOE assesses all the relevant data and documents and found them to be appropriate. Hence the comment was closed.

Comment 23:

Cepco Industries Pvt. Ltd. (Cepco) and Enercon (India) Limited are separate companies. Hence working capital will be required by CEPCO to sustain the business. Hence the comment is not valid.

Comment 24:

The comment was raised regarding very high benchmark for return on equity set by the PP. In response PP stated that the cost on equity (18.21%) has been set as the benchmark by using the best available practice as per option (b) of the investment guidance paragraph 15. The DOE assessed the benchmark calculation submitted by the PP and found them to be appropriate and the comment was closed.

Comment 25:

In response to the comment on the credibility of the use of benchmark, the PP replied that the PP is more concerned with the returns on the equity invested in the project activity. Hence, return on equity is the correct benchmark against equity IRR calculated for the project activity. The response is acceptable to the DOE and hence closed.

Comment 26:

The comment was raised regarding the projections used in investment analysis based on the timeline of the project activity. In response PP has provided all the documents supporting the timeline and corresponding calculations in the financial sheet. The financial calculations and corresponding documents have been checked by the assessment team and were found to be appropriate. Hence comment was closed.

Comment 27:

The comment was raised for the PP to justify the correctness of the IRR calculations based on the parameters used like PLF and tax saving. In response PP stated that the IRR has been calculated as per the investment guidance version 5. The investment analysis sheet has also been submitted to the DOE for verification. DOE verified the investment analysis sheet along with the reference provided and found it to be correct. Hence the comment was closed.

Comment 28:

The DOE is of the opinion that the project is additional based on the complete validation activity carried out for the project activity. This is in response to the comment by the stakeholder that the project is not additional. Hence comment was closed.

6. List of Persons Interviewed

Date	Name	Position	Short Description of Subject Discussed
11/08/2011	Bhupendra Verma	Consultant (EIDPL)	Project Design, Baseline, Emission Reduction Calculation, Monitoring Procedure, Financial additionality, IRR calculations
11/08/2011	Sanjay P Verma	Manager- (Enercon India Ltd)	Operation maintenance, calibration, data recording and invoicing.
11/08/2011	Kanhiya Lal Vijay	Asst Engineer (Enercon India Ltd)	Monitoring procedure, monitoring parameters

7. Document References

Category 1 Documents (documents provided by the Client that relate directly to the GHG components of the project, (i.e. the CDM Project Design Document, confirmation by the host Party on contribution to sustainable development and written approval of voluntary participation from the designated national authority):

/1/	PDD
/1.1/	PDD 'Wind Energy Project in Dewas, Madhya Pradesh (India)', version 1.0, dated 26/05/2011 (Published for international stakeholder consultation) (http://cdm.unfccc.int/Projects/Validation/DB/RI5A4FW8KYXSDIRGN7PGSPWMKEIC7A/view.html)
/1.2/	PDD 'Wind Energy Project in Dewas, Madhya Pradesh (India)', version 2.0, dated 05/10/2011
/1.3/	PDD 'Wind Energy Project in Dewas, Madhya Pradesh (India)', version 3.0, dated 10/11/2011
/1.4/	PDD 'Wind Energy Project in Dewas, Madhya Pradesh (India)', version 4.0, dated 12/01/2012
/1.5/	PDD 'Wind Energy Project in Dewas, Madhya Pradesh (India)', version 5.0, dated 21/01/2012
/1.6/	PDD 'Wind Energy Project in Dewas, Madhya Pradesh (India)', version 6.0, dated 30/04/2012
/1.7/	PDD 'Wind Energy Project in Dewas, Madhya Pradesh (India)', version 7.0, dated 28/08/2012
/1.8/	PDD 'Wind Energy Project in Dewas, Madhya Pradesh (India)', version 8.0, dated 04/09/2012
/1.9/	PDD 'Wind Energy Project in Dewas, Madhya Pradesh (India)', version 9.0, dated 12/09/2012
/1.10/	PDD 'Wind Energy Project in Dewas, Madhya Pradesh (India)', version 10.0, dated 03/10/2012
/2/	IRR calculation spreadsheet for the project activity
/2.1/	Investment Analysis_Version 1
/2.2/	Investment Analysis_Version 2
/2.3/	Investment Analysis_Version 3
/2.4/	Investment Analysis_Version 4
/2.5/	Investment Analysis_Version 5
/2.6/	Investment Analysis_Version 6
/3/	Benchmark Calculation sheet for the project activity
/3.1/	Benchmark version 1
/3.2/	Benchmark version 2
/4/	CER calculation sheet
/5/	DNA of India: Letter of Approval dated 15/12/2011 and ref no. 4/21/2011-CCC
/6/	Modalities of Communication dated 29/08/2011

Discuss the key changes in the final PDD against the version published for the international stakeholder consultation

PDD Version	Date of Revision	Main changes reason for Revision
1.0	26/05/2011	Initial Version (Webhosted PDD)
2.0	05/10/2011	Section B.2 <ul style="list-style-type: none"> All applicability criteria of applied methodology included in the PDD Section B.6 <ul style="list-style-type: none"> Investment analysis revised w.r.t. the assumptions, approach followed (GBIs vs. AD) and calculations Sensitivity analysis revised and threshold limits for sensitive parameters provided Benchmark used for investment analysis revised
3.0	10/11/2011	Section B.6 <ul style="list-style-type: none"> Investment analysis revised w.r.t. the assumptions, approach

PDD Version	Date of Revision	Main changes reason for Revision
		<p>followed (GBIs vs. AD) and calculations</p> <ul style="list-style-type: none"> • Sensitivity analysis revised and threshold limits for sensitive parameters provided • Benchmark used for investment analysis revised <p>Section B.7.1</p> <ul style="list-style-type: none"> • Parameters used in calculation of Net electricity supplied to the grid revised in the PDD <p>Start date of crediting period is revised</p>
4.0	12/01/2012	Update to correctly present the range of latitude and longitude for the location of WECs.
5.0	21/01/2012	<p>Section B.6.1 revised according to the Tool to calculate the emission factor for an electricity system Version 2.2..1</p> <p>Income Tax Depreciation Rate (Written Down Value basis) corrected</p>
6.0	30/04/2012	<p>Revised Sensitivity analysis in Section B.5</p> <p>Revised the start date of crediting period</p>
7.0	28/08/2012	<p>Section B.7.1 has been updated to include a new monitoring parameter $\sum E_{\text{project, Controller, Export}}$ which is for the summation of the electricity export by WECs</p> <p>Section B.7.2 has been updated to clearly indicate the ownership of the energy meters</p> <p>A diagram has also included to illustrate the relationship and boundary between the proposed CDM project and "the turbines from other wind farm developers at the project site.</p> <p>Start date of crediting period is revised</p>
8.0	04/09/2012	Section B.6.1 has been updated for simple OM based on generation weighted average and accordingly ER estimation corrected.
9.0	12/09/2012	Section B.7.1 has been updated for inclusion of the monitoring parameters e.g. $E_{\text{JMR, export}}$ and $E_{\text{JMR, Import}}$
10.0	03/10/2012	Section A.2 has been updated to clearly describe about the WECs of the other wind farm developers at the same site.

Category 2 Documents (background documents used to check project assumptions and confirm the validity of information given in the Category 1 documents and in validation interviews):

/7/	Clean Development Mechanism Validation and Verification Manual Version 1.2
/8/	Approved methodology AMS I.D. version 17 http://cdm.unfccc.int/methodologies/DB/RSCTZ8SKT4F7N1CFDXCSA7BDQ7FU1X
/9/	Tool to calculate the emission factor for an electricity system Version 2.2..1
/10/	DPR for CEPCO Industries Pvt. Ltd. dated 24/09/2010
/11/	Extract of Board resolution dated 30/09/2010
/12/	Third Party PLF study report dated 27/12/2010
/13/	CEA database version 6 http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm
/14/	Request for proposal for supply of WECs dated 07/09/2010

/15/	Supplier offer for supply of WECs from M/s Enercon (India) Ltd. dated 14/09/2010
/16/	Purchase Orders for all WECs dated 28/10/2010
/17/	MOEF permission for diversion of forest land for windfarm project
/18/	Affidavit for transfer of land to CEPCO Industries Pvt. Ltd. by Enercon (India) Limited
/19/	Commissioning Certificate for 4 WECs dated 01/07/2011
/20/	Commissioning Certificate 6 WECs dated 18/08/2011
/21/	Commissioning Certificate 8 WECs dated 23/07/2011
/22/	NOC from MPERC
/23/	MPERC Order for establishment of wind project
/24/	MPUVN permission to establish wind farm
/25/	MPERC Wind Tariff Order dated May 2010
/26/	Loan application letter dated 22/02/2011
/27/	Loan Sanction letter dated 21/07/2011
/28/	Power Purchase Agreement with MPPTCL dated 05/08/2011
/29/	Undertaking letter for NO ODA involved in the project activity dated 01/06/2011
/30/	MoM, attendance sheet & comments of Local Stake Holder meeting dated 25/01/2011
/31/	News Paper advertisement for invitation to stakeholder meeting dated 10/01/2011
/32/	Undertaking for non-usage of REC benefits dated 29/08/2011
/33/	Authorisation to EIPDPL to be PP of CIPL dated 16/11/2010
/34/	MAT rate http://www.incometaxindia.gov.in/
/35/	Income Tax Rate for 2010-11 http://www.incometaxindia.gov.in/
/36/	Government Bond Rates http://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/26CT_SEP090910.pdf
/37/	Copy of the JMR of CIPL
/38/	CDM validation contract
/39/	Copy of the contract signed with CDM consultant dated 15/11/2010
/40/	Prior intimation form dated 29/03/2011
/41/	Mail on Prior intimation dated 29/03/2011 and UNFCCC confirmation mail dated 02/05/2011
/42/	Exchange rate Euro=INR http://www.xe.com/ict/?basecur=EUR&historical=true&month=10&day=1&year=2010&sort_by=name&image.x=44&image.y=15
/43/	BSE 200 data http://www.bseindia.com/histdata/hindices.asp
/44/	Environment Impact Assessment Notification S.O. 3067 dated 01/12/2009. http://moef.nic.in/downloads/rules-and-regulations/3067.pdf
/45/	Undertaking for non-substitution of technology dated 01/06/2011
/46/	ISO Certifications of EIL http://www.enerconindia.net/pdf/Certificates.pdf
/47/	Follow up mail from PP dated 08/12/2011 and MoEF reply dated 08/12/2011 for acknowledgement of prior intimation to Indian DNA
/48/	Website of Reserve Bank of India to Validate the rate of interest. http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/4T_240910F.pdf
/49/	The book published by Prof Aswath Damodaran on "Estimating Risk Parameters" _http://www.ba.metu.edu.tr/~adil/ba4829/Damodaran-beta.pdf
/50/	Technical Manual for LCS from alpha Zahler

A.1 Annex 1: Local Assessment

This checklist is designed to provide confirmation of in-country data and information provided in the Project Design Document for **Wind Energy Project in Dewas, Madhya Pradesh (India)**.

It serves as a “**reality check**” on the project that is completed by a local assessor from SGS India

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
1. Enercon Offer and Purchase order for each wind mill including the cost breakup including Concrete Tower, transformers, land cost, civil work etc.	Enercon Offer and Purchase order for project activity has been checked	Purchase order ^{/16/} Supplier Offer from EIPDPL ^{/15/}	Appropriate and accepted
2. Commissioning certificate for each wind mill	Commissioning certificates have been submitted by PP	Commissioning Certificate for 4 WECs dated 01/07/2011 ^{/19/} Commissioning Certificate 6 WECs dated 18/08/2011 ^{/20/} Commissioning Certificate 8 WECs dated 23/07/2011 ^{/21/}	Appropriate and accepted
3. Evidence for no use of ODA	Undertaking for no use of ODA submitted	No ODA certificate ^{/29/}	Appropriate and accepted
4. The copy of acknowledgement from UNFCCC and email to Indian DNA (regarding prior intimation within six months of start date)	Mail to UNFCCC and acknowledge receipt submitted	Mail on Prior intimation dated 29/03/2011 and UNFCCC confirmation dated 02/05/2010 ^{/41/} Confirmation of online application from Indian DNA (MoEF) for prior intimation ^{/47/}	Appropriate and accepted
5. Power Purchase Agreement between wind mill owner and electricity board for each wind mill	Power Purchase Agreement between CEPCO and MPPTCL submitted	Power Purchase Agreement with MPPTCL dated 05/08/2011 ^{/28/}	Appropriate and accepted
6. Evidence is required to be submitted that the technology used would not be changed during the crediting period.	Undertaking for non-substitution of technology & eligibility of project as small scale project activity submitted	Undertaking for non-substitution of technology dated 01/06/2011 ^{/45/}	Appropriate and accepted

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
7. Evidence for start date of the project activity.	Date on which purchase order was placed has been considered as project start date	Purchase order ^{/16/}	Appropriate and accepted
8. Proof for media used to invite the local stakeholders and date of stakeholders meeting	Newspaper advertisement used for inviting stakeholders for meeting Stakeholder meeting was held on 25/01/2011	News Paper advertisement for invitation to stakeholder meeting dated 10/01/2011 ^{/31/} MoM, attendance sheet & comments of Local Stake Holder meeting dated 25/01/2011 ^{/30/}	Appropriate and accepted
9. MoM of local stakeholder consultation is required. Discussion with the local stakeholders is required during the site visit	Minutes of meeting, attendance sheet & comments from local stakeholders submitted During site visit people were interviewed. List of people interviewed provided in Section 6 above.	MoM, attendance sheet & comments of Local Stake Holder meeting dated 25/01/2011 ^{/30/}	Appropriate and accepted
10. QA/QC procedures for data monitoring or ISO certificates for the company (if applicable) and personnel training programme, Operation & maintenance procedure and contract	QA/QC procedures for data monitoring were checked during the site visit	Checked during site visit	Appropriate and accepted
11. Modalities of Communication for the project activity.	MoC provided by project participant	MoC ^{/6/}	Appropriate and accepted
12. Debundling criteria need to be checked during site visit	The debundling criteria have been checked during the site visit	Checked during site visit	Appropriate and accepted
13. Location of all monitoring meters for each wind mill should be checked during site visit.	The locations of the monitoring meters have been checked during the site visit.	Checked during site visit	Appropriate and accepted
14. Evidence for PLF considered in investment analysis inline with EB 48 annex 11	Third party PLF study report submitted	Third Party PLF study report dated 27/12/2010 ^{/12/}	Appropriate and accepted
15. Copy of board Resolution	Copy of extract of board resolution submitted	Extract of Board resolution dated 30/09/2010 ^{/11/}	Appropriate and accepted
16. Copy of Loan application and Loan	Loan Application and Loan sanction letter	Loan Application letter dated	Appropriate and accepted

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
Sanction Letter	submitted	22/02/2011 ^{/26/} Loan Sanction letter from Union Bank of India dated 21/07/2011 ^{/27/}	

A.2 Annex 2: Validation Checklist

Table 1: Participation Requirements for Clean Development Mechanism (CDM) Project Activities (Ref PDD, Letters of Approval and UNFCCC website)

Requirement	Means of Validation Reference	Comments	Conclusion/C ARs/ CLs
<p>1. All Parties involved have approved the project activity</p> <p>1.1. Has the DNA of each Party involved in the proposed CDM project activity in section A.3 of the PDD provided a written letter of approval which confirms</p> <p>1.1.1.The country is a Party to the Kyoto Protocol</p> <p>1.1.2.Participation is Voluntary</p> <p>1.1.3.The Host Party confirming that the proposed CDM project activity contributes to sustainable development of the country Non-Annex 1 Party shall submit a letter of approval</p> <p>1.1.4.It refers to the precise proposed CDM project activity title in the PDD being submitted for registration</p>	<p>Annex 3, Clean Development Mechanism, Validation and Verification Manual, Version 01.2 (from this point forwarded referenced as VVM) – 45/49a-d /54a-b/127</p> <p>Paragraph 37 CDM Modalities and procedures</p>	<p>India has ratified the Kyoto protocol on 26th August 2002 and is allowed to participate. http://maindb.unfccc.int/public/country.pl?country=IN</p> <p>PP requested to submit the HCA for the project activity. CAR #1 raised</p> <p>PP submitted the HCA in which all the details found appropriate .For verification of authenticity of LOA confirmation mail was sent to Indian DNA and found it authentic.</p>	<p>CAR #1 closed Y</p>
<p>1.2. If the project participant(s) listed in the PDD published at international stakeholder² consultation are not included in the PDD submitted with request for registration, a letter should be obtained from the withdrawn project participant(s) confirming its voluntary</p>	<p>EB 30 Para. 41. EB50 Annex 48 para. 8</p>	<p>Not Applicable</p>	<p>Y</p>

² Stakeholders mean the public, including individuals, groups or communities affected, or likely to be affected, by the proposed CDM project activity or actions leading to the implementation of such an activity

Requirement	Means of Validation Reference	Comments	Conclusion/C ARs/ CLs
withdrawal from the proposed project activity.			
1.3. The letter/s of approval are unconditional with respect to 1.1.1 to 1.1.4 above	VVM Para. 49/ 53,54	The same has been checked with the LoA and found it unconditional with respect to 1.1.1. to 1.1.4 mentioned above.	CAR #1 closed Y
2. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for a minimum of 30 days, and the project design document and comments have been made publicly available	VVM Para. 128 Marrakech Accords, CDM Modalities, §40	The project was webhosted on UNFCCC site from 01/07/2011 to 30/07/2011 at http://cdm.unfccc.int/Projects/Validation/DB/RI5A4FW8KYXSDIRGN7PGSPWMKEIC7A/view.html Number of comments received: 2 Sets CAR #8 & CAR #9 raised The closure of the same have discussed in Annex-3 of this report.	CAR#8 CAR#9 Closed
3. The project design document is in accordance with the applicable CDM requirements for completing PDDs.	VVM Para. 57 Marrakech Accords, CDM Modalities, Appendix B, EB Decisions	In PDD Section 'Summary of ex-ante estimation of emission reductions', serial number of section is not found consistent with the PDD template. Please correct the same. CAR #3 was raised	CAR #3 Closed
4. The project participants shall submit a completed modalities of communication (MoC) Form	F_CDM_MOC form available on UNFCCC website	PP requested to submit a completed MoC form for the project activity in the format prescribed in EB 45 annex 60. CAR #2 raised Submitted MOC form is found in line with the requirement of the EB45 Annex-59 as per the prescribed format.	CAR #2 Closed

Table 2 PDD

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
A. General Description of Project Activity				
A.1. Project Title				
A.1.1. Does the used project title clearly enable the reader to identify the unique CDM activity?	VVM Para.56 Guidelines for completing a CDM-PDD (PDD) section A.1	DR	The title of the project activity mentioned is “Wind Energy Project in Dewas, Madhya Pradesh (India)”. The uniqueness of the title was verified by checking the same on the UNFCCC website. The title has been further checked against the LoA from the Host country and found it correct.	CAR #1 closed Y
A.1.2. Is there an indication of a revision number and the date of the revision?	VVM Para.56 PDD section A.1	DR	The version number and date of the first version has been mentioned in section A.1 of the PDD as Version: 01 and Date: 26/05/2011	Y
A.2. Description of the Project Activity				
A.2.1. Does the description of the proposed CDM project activity as contained in the PDD sufficiently cover all relevant elements accurately?	VVM Para.59 PDD section A.2 see also A.4, A.4.3 and B.3	DR	The project activity entails installation of WECs for power generation and supplying the same to the NEWNE grid. Information regarding the purpose, type of technology used and contribution of the project activity to sustainable development described in the PDD.	Y
A.2.2. Is all information provided consistent and in compliance with the actual situation or planning?	VVM Para.64 PDD section A.2 see also A.4, A.4.2 and B.3	DR SV	The proposed CDM project activity, which has already been commissioned, involves the installation of 18 WECs of total capacity 14.4 MW. It will generate electricity and export it to the NEWNE grid. The information provided by the PP in the PDD was found to be consistent and in compliance with the actual situation on the ground. This was verified during the site visit.	Y
A.2.3. Is all information	VVM Para.64	DR	Information regarding the purpose of the project activity, type of technology used and	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
provided consistent with details provided in further chapters of the PDD?	PDD section A.2		contribution of the project activity to sustainable development has been described in section A.2 of the PDD. The details were verified against those mentioned in further sections of the PDD and were found to be accurate and consistent.	
A.3. Project Participants				
A.3.1. Is the table required for the indication of project participants correctly applied?	VVM Para. 51 PDD section A.3	DR	Section A.3 has been completed in accordance with the guidelines for completing the CDM-SSC-PDD. The LoA and the PDD has been checked for consistency in the name of the PP and found it correct.	CAR #1 closed Y
A.3.2. Is all information provided in consistency with details provided by further chapters of the PDD (in particular annex 1)?	VVM Para. 51 PDD section A.3	DR	Consistency of PP details has been verified against the LoA to be submitted by the PP and found it correct.	CAR #1 closed Y

A.4. Technical Description of the Project Activity

A.4.1.	Does the information provided on the location of the project activity allow for a clear identification of the site(s)? Are the latitude and longitude of the site indicated (decimal points)	VVM Para.64 PDD section A.4	DR	In section A.4.1.4 of the PDD range of latitude and longitudes was not correctly mentioned as the same was not consistent to the table mentioned for WEC locations .Hence PP was requested to mention it clearly. In response PP updated the PDD clearly indicating the range which is consistent with the table.	CAR#10(1)) Closed
A.4.2.	Does the proposed CDM project activity involve the alteration of existing installations or process?	VVM Para.64 PDD section A.4	DR SV	The proposed CDM project activity is a green field project. PP has submitted the purchase orders of the equipments used. The project does not involve the alteration of existing installations or processes. This was also verified during the site visit.	Y
A.4.3.	Do the project participants possess ownership or licenses which will allow the implementation of the project at that site / those sites?	VVM Para.64 PDD section A.4	DR	PP has submitted the following: 1. MoEF clearance for diversion of forest land for windfarm project 2. MPERC Order for establishment of WEGs 3. MPUVN permission to install the WEGs 4. Lease deed for transfer of land to the PP for establishment of the project. All the above allows the implementation of the project activity at the project site.	Y
A.4.4.	Is the category(ies) of the project activity correctly identified?	VVM Para.64 PDD section A.4	DR	The PDD mentions that the proposed CDM project activity falls under type – I, and project category is ‘D ‘- Grid connected renewable electricity generation. This has been correctly identified.	Y
A.4.5.	Is all information provided in compliance with actual situation or planning as available by the project participants?	VVM Para.64 PDD section A.4 EB 52 Para. 13	DR SV	The proposed CDM project activity, which has already been commissioned, involves the installation of 18 WECs of total capacity 14.4 MW, which will generate electricity and export the same to the NEWNE grid. The information provided by the PP in the PDD was found to be consistent and in compliance with the actual situation.	Y
A.4.6.	Is the table required for the indication of projected emission	VVM Para.64 PDD section A.4	DR	The table for the projected emission reductions has been correctly applied in section A.4.3 of the PDD in accordance with the guidelines for completing the CDM-SSC-PDD.	Y

reductions correctly applied?				
A.5. Debundling				
A.5.1. Is the small-scale project activity a debundled component of a large scale project activity	VVM Para. 136c EB54 para 35 & Annex 13	DR	The PDD mentions that the project proponent does not have any other registered or applied for registration CDM project activity in the 1 km area from the present project activity by same project participant within 2 years in same project category and technology. The same was checked during the site visit.	Y
A.5.2. If the project is a debundled component of a larger project, does the larger project fall within the limits for small-scale CDM project activities	VVM Para. 134c	DR	The project activity is not a de-bundled project activity as mentioned in the PDD. The same was checked during the site visit.	Y
A.6. Public Funding				
A.6.1. Does the information on public funding provided conform to the actual situation or planning as presented by the project participants?	PDD section A.4.4	DR SV	The PDD mentions that there is no public funding for the project activity. PP has provided a declaration regarding the same. No signs of donor funding was visible on the site. The information provided by the PP conforms to the actual situation.	Y
A.6.2. Is all information provided consistent with details provided by further chapters of the PDD (in particular annex 2)?	PDD section A.4.4	DR	The information provided by the PP in section A.4.4 of the PDD is consistent with that mentioned in Annex 2 of the PDD.	Y
A.6.3. In case of public funding from Annex I Parties is it confirmed that such funding does not result in a diversion of official development assistance	PDD section A.4.4	DR	Not applicable, as there is no public funding for the proposed CDM project activity.	Y

B. Baseline and Monitoring Methodology

B.1. Choice and Applicability

B.1.1.	Is the baseline methodology previously approved by the CDM Methodology Panel?	VVM Para.68 PDD section B.1	DR	Section B.1 of the PDD contains a reference to the methodology used i.e. AMS I D version 17 which is an approved methodology and is valid.	Y
B.1.2.	Has the methodology (incl. the tools) been altered from the original version as referenced in the PDD?	VVM Para.69 PDD section B (B.1-B.2)	DR	The methodology AMS I.D version 17 and relevant tools used for the project activity have not been altered from the original version as reference in the PDD. This has been verified by comparing it against the version available on the UNFCCC website.	Y
B.1.3.	Does the project activity qualify as small scale project?	VVM Para. 134a	DR SV	The project uses the methodology AMS I D version 17; the total rated capacity of project activity is 14.4 MW, which is less than the specified limit of 15 MW for a small-scale project activity. The same was cross-checked during the site visit. Hence the project qualifies as a small scale project.	Y
B.1.4.	Is the category(ies) of the project activity correctly identified in accordance with Appendix B to the simplified modalities and procedures for small-scale CDM project activities?		DR	The project type and category identified in section B.1 of the PDD is I.D – grid connected renewable electricity generation. The project activity involves electricity generation using WECs and supplying the same to NEWNE grid. Hence, the project type and category have been correctly identified in accordance with Appendix B of the simplified modalities and procedures for small-scale CDM project activities.	Y
B.1.5.	Is the selected simplified methodology applicable to the project activity in the PDD?	VVM Para.75/66a/68/73 PDD section B (B.1-B.2)	DR	The methodology selected for the project activity is AMS I.D. version 17. PP was asked to discuss the applicability of the methodology to the proposed project activity in Section B.2 of the PDD. CAR #4 raised In response, the PP revised Section B.2 of the PDD to include all the applicability criteria of the applied methodology AMS I.D. version 17 and this is acceptable	CAR #4 closed Y

B.1.6. Does the project activity conform to one of the approved small-scale categories?	VVM Para. 136b EB55 Annex 35	DR	The proposed project activity confirms to AMS I.D./Version 17 under sectoral scope – 01 (Energy industries renewable - Non-renewable sources) and justification for the applicability criteria has been mentioned in section B.2 of the PDD.	Y
B.1.7. Is the project activity a bundle of several small scale activities and if so does it contain any sub-bundles?		DR	The project activity is not a bundled project activity.	Y
B.1.8. If the project activity is a bundle of several small scale activities, does the sum of the total bundle (including any subbundles) fall within the limits for small scale projects		DR	Not Applicable	Y
B.1.9. If the project activity is a bundle of several small scale activities, has the form with information related to the bundle been submitted and is it correctly used		DR	Not Applicable	Y
B.1.10. Is the discussion in the PDD in conformance with all applicability criteria of the applied methodology?	VVM Para.75/66b/68 PDD section B (B.1-B.2)	DR	CAR#04 is raised as per which PP is requested to mention all the applicability criteria as per the applicable methodology in section B.2 of the PDD The discussion in revised PDD is found in conformance with all applicability criteria of the applied methodology. The same is found correct and hence the CAR#04 is closed out.	CAR #4 closed Y

B.2. Project Boundary

B.2.1. Are all emission sources and gases related to the baseline scenario, project scenario and leakage clearly identified and described in a complete and transparent manner? Is there information on GHG emissions in proposed CDM project activity boundary as a result of the implementation of the proposed CDM project activity which are expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology.	VVM Para.79/77 /67a PDD section B.3	DR	The PDD correctly describes the project boundary, including the physical delineation of the proposed CDM project activity.	Y
B.2.2. In case of grid connected electricity projects: Is the relevant grid correctly identified in accordance with the tool to calculate emission factor of electricity system (wherever applicable) and the underlying methodology?	VVM Para.79 PDD section B.3	DR	The project activity involves generation of electricity using WECs. The electricity generated is exported to the NEWNE grid of India. This grid is identified in accordance with the tool to calculate emission factor version 02.2.1	Y

B.2.3.	Does the project boundary include the physical delineation of the proposed CDM project activity?	VVM Para.78/79 PDD section B.3 also see section A.4.2	DR	The project boundary of the proposed CDM project activity has been delineated in section B.3 of the PDD. The delineation is correct and meets the requirements of the selected baseline methodology AMS I.D./ Version 17	Y
B.2.4.	Are the project's geographical boundaries and the project's system boundaries (components and facilities used to mitigate GHGs) clearly defined?	VVM Para.76/79 PDD section B.3 also see section A.4.2	DR	The project boundary has been described clearly as per the selected methodology AMS I D version 17.	Y
B.3. Identification of the Baseline Scenario					
B.3.1.	Does the PDD discuss the identification of the most likely baseline scenario? Does the PDD follow the steps to determine the baseline scenario required by the methodology and is the application of the methodology and the discussion and determination of the chosen baseline transparent?	VVM Para.67b.80/82/86 PDD Section B.4/B.5	DR	The baseline for the proposed CDM project activity has been identified in accordance with the methodology AMS I D version 17 and mentioned clearly in the PDD.	Y
B.3.2.	Are all tools/procedures in the methodology correctly applied to identify the most reasonable baseline scenario? This includes all potential realistic	VVM Para.81/82/86a- d/83/84 PDD Section B.4/B.5	DR	<p>The discussion and determination of the chosen baseline is transparent and supported by the available data which is the NEWNE grid. The data are available from CO₂ Baseline Database for the Indian Power Sector, Version 06.</p> <p>However the latest version of the "Tool to calculate the emission factor for an electricity system" is not followed in PDD Hence PP was requested to clarify the same. PP was also requested to include the correct reference of each parameter in the section B.5 of</p>	CAR#10(2) & CAR#11(1) Closed

	and credible baseline scenarios in the discussion taking into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?			the PDD. In response PP provided the revised PDD in which the latest version (2.2.1) of the "Tool to calculate emission factor for an electricity system".	
B.3.3.	Is the choice of the baseline compatible with the available data?	VVM Para.86b-c/95 PDD Section B.4/B.5	DR	The baseline has been identified for proposed project activity as per the methodology AMS I D version 17 and mentioned clearly in the PDD.	Y
B.3.4.	Is conservativeness addressed in the way of identifying the baseline?	VVM Para.90 PDD Section B.4/B.5	DR	The baseline for the proposed project activity has been identified as per the methodology AMS I D version 17 and mentioned clearly in the PDD. The data used for calculating the baseline has been taken from the CO ₂ Baseline Database for the Indian Power Sector (Version 06) published by the Ministry of Power, Government of India. The data in this database has been conservatively calculated. Hence the baseline for the project activity has been conservatively identified.	Y
B.3.5.	Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	VVM Para.90/91 PDD Section B.4/B.5	DR	The methodology AMS I.D. Version 17 does not require the identification of alternative baseline scenarios.	Y
B.3.6.	Is there a verifiable description of the baseline scenario? Does this include 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 Para.86e/85 PDD Section B.4/B.5	DR	Not required as per methodology AMS I.D. Version 17	Y

B.4. Additionality

<p>B.4.1. Does the PDD clearly demonstrate the additionality using the approach as specified in the methodology and by following all the required steps?</p>	<p>VVM Para 137 EB 54 report, annex 15</p> <p>VVM Para.67d/95 PDD Section B.1/B.4/B.5</p>	<p>DR</p>	<p>PP is requested to explain calculation of Generation Based Incentives considered and also ask for a copy of declaration and application submitted to MNRE for claiming GBI. Please provide the evidence for O&M cost and escalation considered.</p> <p>PP is requested to explain interest calculation and list all assumptions regarding the same.</p> <p>Please confirm if PP has benefits from scheme like REC, If Yes, PP is requested to justify why such benefits are not included as revenue in financial analysis.</p> <p>Please include results of sensitivity and threshold limit (Scenario in which the calculated IRR crosses benchmark also explain the likelihood of that scenario).</p> <p>CAR #7 raised</p> <p>The assessment team checked the revised financial sheet and referred to the GBI guidelines and found the revised financials to be appropriate and acceptable.</p> <p>In response, PP stated that the source of O&M cost and escalation was the offer from the technology supplier. The assessment team verified the information from the offer and found it to be consistent with the values considered in the financial calculation.</p> <p>PP provided all the references to the interest calculation assumptions used in the financial calculation sheet and revised the same to present the calculations in a transparent manner. The assessment team cross checked the references with publically available sources and found them to be appropriate.</p> <p>PP stated that the project activity was not eligible to avail RECs citing the eligibility criterion for REC mechanism which bars projects from availing RECs if they have taken the preferential tariff route. The PP also submitted the PPA signed with the state electricity utility as evidence for the same.</p> <p>PP has included the same in revised PDD along with the relevant explanation. The assessment team cross-checked the results of sensitivity and threshold limit in the financial sheet and found them acceptable</p> <p>CAR#11(2)& 11(3) raised:</p> <p>As per MPERC tariff order depreciation should be assumed @7% for the first 10 years and balance 20% in next 15 years so that asset is depreciated to the value of 10% of its initial value over its 25 years life span. However in the financial calculation PP has taken residual value as 10% of its initial value after 20 years. PP is requested to clarify this inconsistency in the approach.</p>	<p>CAR #7</p> <p>CAR#11(2) &(3) closed</p>
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			<p>PP clarified that PP clarified that operational life time of wind turbine is 20 years and hence the residual value is considered after the 20 years of the operation. The same has been verified from the technology supplier undertaking and also found acceptable by the sect oral expert</p> <p>As in the financial calculation income tax depreciation rate on wind generators is mentioned as 100% whereas per income tax act 1961 this value is 80%. PP is requested to clarify the basis of this value.</p> <p>In response PP corrected the value to make it consistent with Income Tax Act section-32 Rule-5 New appendix-1 and submitted the revised financial calculation and the PDD.</p>	
<p>B.4.2. In case of using the additionality tool: Is the 'Additionality Tool' used in the PDD latest version? If an earlier version has been used, do the changes impact the discussion in the PDD? Are all steps followed in a transparent manner?</p>	<p>PDD Section B.1/B.4/B.5</p>	<p>DR</p>	<p>CAR #7 (5) was raised as PP has not included the results of sensitivity and threshold limit (Scenario in which the calculated IRR crosses benchmark also explain the likelihood of that scenario).</p> <p>In response PP revised the PDD in which results of sensitivity analysis and threshold limit for all the sensitive parameters have been included in the revised PDD. Appropriate justification for each parameter limit has also been provided. Hence acceptable and closed.</p>	<p>CAR #7(5) Closed</p>
<p>B.4.3. Has all information been backed up with references, sources and certification? Is the data presented credible and reliable with complete transparency to all available data and documentation?</p>	<p>VVM Para.93/91 PDD Section B</p>	<p>DR SV</p>	<p>CAR #7(2) was raised as O&M cost & escalation cannot be traced from the offer letter from Enercon.</p> <p>In response PP clarified that the same has been refereed from page 3 (serial no-9) of the offer letter from Enercon. The same has been checked and found it correct hence the CAR#7(2) is closed out.</p>	<p>CAR #7(2) Closed</p>

B.4.4. Is the discussion on additionality and the evidence provided consistent with the starting date of the project? If the project activity start date is prior to the validation is it discussed how the CDM was taken into account in the decision to go ahead with the project activity	VVM Para.102b PDD Section B.5	DR	PP is requested to justify how the prior consideration of CDM is in line with EB 62 Annex 13 . CL #6 raised In response, the PP submitted the UNFCCC prior intimation form dated 29/03/2011 along with the mail receipt from UNFCCC regarding prior intimation dated 02/05/2011. PP also stated that as they could not get UNFCCC receipt till 02/05/2011 so in the mean time PP again submitted the UNFCCC prior intimation form for which UNFCCC receipt was received on 27/05/2011. Hence the assessment team validated that UNFCCC and Indian DNA (MoEF) were intimated within 6 months of start date of the project activity (28/10/2010).	CL #6 Closed
B.4.5. If an investment analysis has been used, has it been demonstrated that the proposed project activity is economically or financially less attractive than at least one other alternative without the revenue from the sale of CERs?	VVM Para. 106, 107, 108, 109 112a-c PDD Section B.5	DR	CAR#7(7) was raised as per which PP needs to justify the availability of implementation schedule (Cell no C6 to G6 'cashflow'), used to calculate XIRR at the time of decision making, in doing so please refer para 6 of EB62 Annex 5. OPEN In response PP clarified that page 2 (serial no-7, terms of payment) of the offer letter from Enercon justifies the schedule of cash flow which meets the requirements of para 6 of EB62 Annex 5. The same has been checked and found appropriate and hence the CAR#7(7) is closed out	CAR #7(7) Closed
B.4.6. If a benchmark is used, is it ensured that it is selected in accordance with the requirements of the tool /methodology and it represents standard returns in the market (not linked to the subjective profitability expectation or risk profile of a particular	VVM Para. 110 PDD Section B.5	DR	PP is requested to justify the choice of companies for calculation of beta, why the number of companies has been limited to 6 as there are many companies listed in power domain. PP is requested to provide screen shots for beta values considered In response PP clarified that the choice of companies for calculation of beta value has been limited to companies listed on the BSE200 index (used for calculating the market risk premium) which are engaged in the power generation business and for which data pertaining to the three year period in consideration is available. PP also provided the screen shots for beta values. The information and data submitted has been checked and found acceptable and hence the CAR#7(6) is closed out.	CAR #7(6) Closed

project developer).				
B.4.7. If a barrier analysis has been used, has it been shown that the proposed project activity faces barriers that prevent the implementation of this type of proposed project activity but would not have prevented the implementation of at least one of the alternatives?	VVM Para. 114 116a-b/117 PDD Section B.5 EB50, Annex 13	DR	Not applicable since barrier analysis has not been demonstrated	Y
B.4.8. Is the discussion on additionality consistent with the identification of all plausible and credible baseline scenarios?	VVM Para. 105 PDD Section B.5	DR	The methodology AMS I.D. Version 17 does not requires the identification of alternative baseline scenarios.	Y
B.4.9. If a barrier analysis has been used have the 'guidelines for objective demonstration and assessment of barriers' been followed? Have all applicable steps been considered and substantiated with objective evidence?	VVM Para 113 EB 50 Annex 13	DR	Not applicable since barrier analysis has not been used	Y
B.4.10. Do the identified baseline scenarios include technologies and practices that include outputs or services comparable	VVM Para. 105 PDD Section A.4.2/B.5	DR	The methodology AMS I.D. Version 17 does not requires the identification of alternative baseline scenarios.	Y

with the proposed CDM project activity. Do they also abide by the same applicable laws and legislations?				
B.4.11. Has it been shown that the project is not common practice?	VVM Para. 119a/b PDD Section B.5	DR	Common practice analysis is not required by the methodology AMS I.D./Version 17.	Y
B.4.12. What are they key distinctions between the project activity and any similar projects that are widely used as common practice?	VVM Para. 118, 119c/d PDD Section B.5	DR	Common practice analysis is not required by the methodology AMS I.D./Version 17.	Y
B.5. Application of the Simplified Methodology				
B.5.1. Has the simplified methodology been applied correctly for determining baseline emissions ?	VVM Para. 91d PDD Section B (B.6.1 -B.71)	DR	The methodology AMS I.D version 17 has been correctly applied for determining the baseline emissions in section B.6.1 and B.6.3 of the PDD and the ER excel sheet.	Y
B.5.2. Has the simplified methodology been applied correctly for determining project emissions ?	VVM Para. 90/91d PDD Section B (B.6.2-B.71)	DR	The methodology AMS I.D version 17 has been correctly applied for determining the project emissions in section B.6.1 and B.6.3 of the PDD and the ER excel sheet.	Y
B.5.3. Has the simplified methodology been applied correctly for determining leakage ?	VVM Para. 91d PDD Section B (B.6.2 -B.71)	DR	The methodology AMS I.D version 17 has been correctly applied for determining the leakage in section B.6.1 and B.6.3 of the PDD and the ER excel sheet.	Y
B.5.4. Where applicable, has the simplified methodology been applied correctly for the	VVM Para 88/91d PDD Section B (B.6.2 -B.71)	DR	The methodology AMS I.D version 17 has been correctly applied for the calculation of emission factor (EF _y) in section B.6.1. However, in Section B.7.1, PP was asked to justify the calculation of net electricity	CAR #5

direct calculation of emission reductions?			<p>supplied to the grid by the project activity (EG_y) and provide a copy of the JMR report</p> <p>PP was further asked to justify the appropriateness of the formula</p> $EG_y = \sum_{\text{Project}} E_{\text{WEC, Export}} - \sum_{\text{Project}} E_{\text{WEC, Import}}$ <p>CAR #5 raised</p> <p>In response, the PP stated that $\sum_{\text{Project}} E_{\text{WEC, Import}}$ and $\sum_{\text{Project}} E_{\text{WEC, Export}}$ gives the electricity imported and exported by the WTGs included in the project activity only and thus electricity from project WTGs and non-project WTGs can be segregated using the formulae. The assessment team is of the opinion that the formulae used are correct and the same were also updated in the revised PDD. JMR report was also checked to verify the apportioning approach and was found acceptable</p>	
B.5.5. Where there is an option between different equations or parameters, has the methodological choices for the project been explained, have they been properly justified and are they correct?	VVM Para.89/90/91 PDD Section B (B.6.2 -B.71)	DR	<p>CAR #5 was raised as it is stated in section B.7.1 that the parameter $\sum_{\text{Project}} E_{\text{WEC, Import}}$ & $\sum_{\text{Project}} E_{\text{WEC, Export}}$ gives the import and export to grid by all WTGs including project activity, please clarify how the formula $EG_y = \sum_{\text{Project}} E_{\text{WEC, Export}} - \sum_{\text{Project}} E_{\text{WEC, Import}}$ is correct and appropriate</p> <p>In response PP clarified that it is stated in section B.7.1 that the parameter $\sum_{\text{Project}} E_{\text{WEC, Import}}$ & $\sum_{\text{Project}} E_{\text{WEC, Export}}$ gives the import and export to grid by all WTGs including project activity,</p> <p>Thus the net electricity exported by the WTGs of the project under consideration can be given by following equation. Also, the section B.7.1 has been revised for better clarity.</p> $EG_y = \sum_{\text{Project}} E_{\text{WEC, Export}} - \sum_{\text{Project}} E_{\text{WEC, Import}}$ <p>The response from PP is found correct and hence the CAR#5 is closed out.</p>	<p>CAR #5</p> <p>Closed</p>
B.5.6. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	PDD Sections B.5-C	DR	The project activity involves the generation of electricity using wind energy and hence not applicable	Y
B.6. Ex-ante Data and Parameters Used				
B.6.1. Are the data provided in compliance with the	VVM Para.	DR	The data provided in the excel spreadsheet are in compliance with the approved	Y

methodology?	91/67c PDD Section B.6.3/B.6.4		methodology AMS I.D/ Version 17.	
B.6.2. Is all the data derived from official data sources or replicable records and have these been correctly quoted?	VVM Para. 91a/b PDD Section B.6.3/B.6.4	DR	All data in the excel spreadsheet have been quoted from official data sources or from replicable records like the CEA database and have been correctly quoted.	Y
B.6.3. Is the vintage of the baseline data correct?	PDD Section B.6.3/B.6.4	DR	The vintage of the baseline data is correct as PP has used the latest version of CO ₂ Baseline Database for the Indian Power Sector, Version 06 which was available at the time of PDD submission	Y
B.6.4. Is all the data appropriate and correctly applied to the CDM project activity?	VVM Para. 91c PDD Section B.6.3/B.6.4	DR	PP has applied all the data appropriately and correctly to the CDM project activity.	Y
B.6.5. Are data and parameters that are not being monitored and remained fixed throughout the crediting period appropriately assessed, correct, and will they result in conservative estimates?	VVM Para. 90 PDD Section B.6.3/B.6.4	DR	The data from the CEA database version 6 - OM, BM and CO ₂ emission factor which have been fixed by the PP are appropriate and will result in conservative estimates throughout the crediting period.	Y
B.6.6. If the project activity uses the PLF does it follow the guidance provided in EB48 annex 11?	EB48 Annex 11.	DR	The PP has used the PLF from the WEC supplier offer letter (19.7%) for the investment analysis, since it was available at the time of investment decision. This is appropriate as per paragraph 6 of EB 62 Annex 5. Further, as per the UN guidelines in paragraph 3(b) of EB 48 Annex 11, the PP has contracted a third party to determine the PLF at the WEC site (19.5%). The difference in the values of PLF have been addressed in the sensitivity analysis in the PDD. Thus, guidance provided in EB48 Annex 11 has been followed for the determination of the PLF.	Y
B.7. Calculation of Emissions Reductions				
B.7.1. Has the simplified	VVM Para.	DR	The methodology has been applied exactly as defined for determining the emission	Y

	methodology been applied correctly for determining emission reductions ?	91d PDD Section A.4.3/B.6		reductions. Section B.6.1 of the PDD clearly states the equations to be used and follows all required steps as per the methodology. The same has been reflected in the ER excel sheet.	
B.7.2.	Are the emission reduction calculations documented in a complete and transparent manner?	VVM Para. 91e PDD Section B.6	DR	Section B.6.3 of the PDD documents indicates how each equation has been applied to calculate the emission reductions. It has been indicated in a reproducible manner. The same has been reflected in the ER excel sheet.	Y
B.7.3.	Is the projection based on same procedures as used for later monitoring or acceptable alternative models?	PDD Section B.6	DR	Project participant has provided a transparent <i>ex ante</i> calculation of baseline emissions expected during the crediting period, applying all relevant equations provided in the approved methodology AMS I.D./ Version 17.	Y
B.7.4.	Is the calculation of the emission reduction correct?	VVM Para. 91e PDD Section B.6	DR	The application of formulae to calculate emission reductions were found to be correct and reproducible in the PDD as well as the excel sheet. All estimates can be replicated using the parameters mentioned in the PDD.	Y
B.8. Emission Reductions					
B.8.1.	Is the form/table required for the indication of projected emission reductions correctly applied?	PDD Section A.4.3/ Section B.6	DR	The tables in section A.4.3 and B.6 of the PDD have been correctly applied.	Y
B.8.2.	Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	PDD Section A.4.3/ Section B.6	DR	PP has mentioned the start date of the crediting period as 01/05/2012, which is appropriate.	Y
B.9. Monitoring Methodology					
B.9.1.	Does the monitoring methodology provide a	VVM Para.	DR	The monitoring methodology AMS I.D version 17 has been correctly applied in representing all the parameters to be monitored. All the parameters and data that are	Y

	consistent approach in the context of all parameters to be monitored and further information provided by the PDD? Are all parameters and data that are available at validation consistent with the simplified methodology. Has this data been interpreted and applied correctly?	67e PDD Section B.7-B.8 see also Annex 4	SV	available at validation have been interpreted and applied correctly and is consistent with the simplified methodology.	
B.9.2.	Does the monitoring methodology apply consistently the choice of the option selected for monitoring both of project and baseline emissions?	PDD Sections B and C	DR SV	The monitoring plan has been applied correctly for monitoring of both project and baseline emission.	Y
B.10. Data and Parameters Monitored					
B.10.1.	Does the monitoring plan in the PDD comply with the simplified methodology? Provide for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period?	VVM Para. 91a/91d/121/79 PDD Section B.7-B.7.2	DR	<p>The equation used to calculate the net electricity has not been clearly described by the PP.</p> <p>In response PP clarified that $\sum_{\text{Project}} E_{\text{WEC, Import}}$ & $\sum_{\text{Project}} E_{\text{WEC, Export}}$ gives the import and export to grid by all WTGs included in project activity only. Thus the net electricity exported by the WTGs of the project under consideration can be given by following equation. Also, the section B.7.1 has been revised for better clarity.</p> $EG_y = \sum_{\text{Project}} E_{\text{WEC, Export}} - \sum_{\text{Project}} E_{\text{WEC, Import}}$ <p>PP has included the same in the revised PDD which is found satisfactory and hence the CAR#5 is closed out.</p> <p>Collection and archiving of all the data has been mentioned in the monitoring plan as per the methodology.</p>	<p>CAR #5 closed</p> <p>CAR#10(3) Closed</p>

			<p>For the parameter 'EGy' the source of data is mentioned as breakup sheet signed by DISCOM ,however in the section B.7.2 source of the same is mentioned as JMR. PP was requested to clarify this inconsistency.</p> <p>In response PP corrected the source as breakup sheet in both the section which is found acceptable.</p>	
B.10.2. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the simplified methodology applied?	PDD Section B.7-B.7.2/B.6.2	DR	<p>Choices of project GHG indicators are not required as per methodology AMS I.D Version 17</p>	Y
B.10.3. Will it be possible to determine the specified project GHG indicators?	PDD Section B.6.2-B.8	DR	<p>Project GHG indicators are not required as per methodology AMS I.D Version 17</p>	Y
B.10.4. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	PDD Section B.6.2-B.7.1 EB 55, annex 35	DR	<p>CAR#05 raised as it is not clear how the net electricity supplied to the grid by project activity will be calculated , PP is requested to provide the copy of JMR report</p> <p>In response PP clarified that $\sum_{\text{Project}} E_{\text{WEC,Import}}$ & $\sum_{\text{Project}} E_{\text{WEC,Export}}$ gives the import and export to grid by all WTGs included in project activity only. Thus the net electricity exported by the WTGs of the project under consideration can be given by following equation. Also, the section B.7.1 has been revised for better clarity.</p> $EG_y = \sum_{\text{Project}} E_{\text{WEC, Export}} - \sum_{\text{Project}} E_{\text{WEC, Import}}$ <p>Explanation acceptable and the same has been provided in the revised PDD. However Please clarify it further :</p> <p>As mentioned in the section B.7.2 of the PDD the PP is using a number of monitored parameters to calculate the quantity of net electricity supplied to the grid instead of directly metering the net electricity supplied to the grid. The PP is requested to clarify why the same are not mentioned as monitoring parameter in the section B.7.1 of the PDD.</p> <p>PP is also requested to provide the clear information regarding the ownership of the metering system e.g. whether this is under the PP or grid company control and explain the same with a schematic diagram to illustrate the relationship and boundary between</p>	<p>CAR #5</p> <p>Closed</p> <p>CAR#5(1) raised Closed</p> <p>CAR#5(2) (a)</p>

		<p>the proposed CDM project and "the turbines from other wind farm developers at the project site".</p> <p>In the response PP clarified that the apportioning procedure involves the monitoring parameters which is the cumulative values involving project and non-project WECS hence to get that value data from non-project wind turbines will also be required .As to arrange that data is beyond PP's control and hence the same is not mentioned in the section B.7.1. However PP has included a new monitoring parameter Σ project, Controller, Export in the section B.7.1 which will be used to crosscheck the value of net electricity supplied to the grid. As this value cannot be higher than that the summation of the electricity exported as measured at the controller of individually WEC. This is found a valid crosscheck and hence the response from the PP is found acceptable and the CAR#5(1) is closed out.</p> <p>PP has included the schematic diagram which clearly illustrates the relationship and boundary between the proposed CDM project and "the turbines from other wind farm developers at the project site". This diagram clearly indicates that the LCS meters are owned by the PP however the substation main and check meter are owned by the state utility . The same is found consistent with the PPA and hence the response from PP is found acceptable. However PP is requested to address the following points :</p> <p>CAR#5(2)(a) raised : Why the BM value is not clearly explained in section B.6.1 of the PDD as the same is done for OM value only.</p> <p>In the response PP revised the PDD by clearly mentioning the value of the BM as 0.81231 tCO₂eq/MWh which is found consistent with the "CO₂ Baseline Database for the Indian Power Sector", Version 6.0, March, 2011; published by Central Electricity Authority (CEA), Government of India. Hence the response from the PP is found acceptable and the CAR#5(2)(a) is closed out.</p> <p>CAR#5(2)(b) raised: PP is also requested to clarify why the substation meter export and import values is not included in the section B.7.1. In the response PP has included the same in the section B.7.1 of the PDD .The same has been validated and found that monitoring arrangement described in the monitoring plan are feasible within the project design and in compliance with the methodology</p>	<p>& CAR#5(2) (b) & CAR#5(2) (c)</p> <p>Raised</p> <p>Closed</p>
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			<p>requirement. Hence the response from the PP is found correct and the CAR#5(2)(b) is closed out.</p> <p>CAR#5(2)(c) raised PP is also requested to clearly explain about the parameters $\sum_{\text{Project}} E_{\text{WEC, Export}}$ and $\sum_{\text{Project}} E_{\text{WEC, Import}}$ in the section B.7.2 of the PDD.</p> <p>In the response PP clearly explained the same in the revised PDD stating that these are the summation of apportioned value of electricity exported and imported by WECs of project activity respectively. The response from the PP is found acceptable However it was further asked PP to include the information in the section A.2 of the PDD about the turbines of the other wind farm deveopres CAR#5(2)(c) is still open.</p> <p>In response PP has correctly updated the information in the section A.2 of the revised PDD version 10.0 dated 03/10/2012 in which it is clearly mentioned that at the Project site there are wind turbines of other wind turbine developers also. This information is consistent with the apportioning procedures mentioned in the section B.7.2 of the PDD . CAR#5(2)(c) is closed out.</p>	
B.10.5. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	PDD Section B.6.2-B.7.1	DR	The information given for each monitoring variable by the presented table is sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records.	Y
B.10.6. Is the monitoring approach in line with current good practice, i.e. will it deliver data in	PDD Section B.5-B.7.2	DR	The monitoring approach will deliver data in a reliable and reasonably acceptable accuracy.	Y

a reliable and reasonably acceptable accuracy?				
B.10.7. Are all formulae used to determine project emission clearly indicated and in compliance with the monitoring methodology.	PDD Section B.6.2-B.7.1	DR	In the revised PD all the formulas used for the net electricity supplied has been clarified which is found correct .hence the CAR#05 is closed out.	CAR #5 Closed
B.11. Quality Control (QC) and Quality Assurance (QA) Procedures				
B.11.1. Is the selection of data undergoing quality control and quality assurance procedures complete?	VVM Para. 121 Refer to all data within the PDD Inc. B.6.2-B.7.1	DR	The WEC supplier is ISO certified and followed the QA/QC procedure for monitoring of the data. QA/QC procedures have been described for all the parameters in the PDD.	Y
B.11.2. Is the belonging determination of uncertainty levels done correctly for each ID in a correct and reliable manner?	Refer to all data within the PDD Inc. B.4/B.7.2/Annex 4	DR	The uncertainty levels for each parameter have been addressed for each sub-bundle in section B.7.2 of the PDD.	Y
B.11.3. Are quality control procedures and quality assurance procedures sufficiently described to ensure the delivery of high quality data?	VVM Para 121	DR	The WEC supplier is ISO certified and followed the QA/QC procedure for monitoring the data. QA/QC procedures have been described for all the parameters in the PDD.	Y
B.11.4. Is it ensured that data will be bound to national or internal reference standards?	VVM Para. 86d	DR SV	The data provided will be bound by national references and this was cross-checked during the site visit.	Y
B.11.5. Is it ensured that data provisions will be free of potential conflicts of interests resulting in a	VVM Para. 19	DR	The WEC supplier is ISO certified and followed the QA/QC procedure for monitoring the data. QA/QC procedures have been described for all the parameters in the PDD through which data manipulation can be avoided.	Y

tendency of overestimating emission reductions?				
B.12. Operational and Management Structure				
B.12.1. Is the authority and responsibility of project management clearly described?	PDD Section B.8/Annex 1	DR SV	Management and operational structure for the project activity has been correctly described in the PDD. It is consistent with that observed during the site visit.	Y
B.12.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD Section B.8/Annex 1	DR	The same has been correctly described in the PDD and was cross-checked during the site visit.	Y
B.12.3. Are procedures identified for training of monitoring personnel?	PDD Section B.8/Annex 1	DR	The Enercon Training Academy provides need-based training to meet the training requirements. The same has been mentioned in section B.7.2 of the PDD	Y
B.13. Monitoring Plan (Annex 4)				
B.13.1. Is the monitoring plan developed in a project specific manner clearly addressing the unique features of the CDM activity?	VVM Para. 122a	DR	The monitoring plan has been developed specifically for this project activity and is mentioned in Section B.7.2 and annex 4 of the PDD.	Y
B.13.2. Does the monitoring plan completely describe all measures to be implemented for monitoring all parameter required, including measures to be implemented for ensuring data quality?	VVM Para. 122b EB55 Annex 35	DR	Section B.7.2 and annex 4 of the PDD describes all measures to be implemented for monitoring all parameters, including measures to be implemented for ensuring data quality.	Y
B.13.3. Does the monitoring plan provide	VVM Para.	DR	Section B.7.2 and annex 4 of the PDD provides information about the meters to be	Y

information on monitoring equipment and respective positioning in order to safeguard a proper installation?	122b		used for the monitoring.	
B.13.4. Are procedures identified for calibration of monitoring equipment?	VVM Para. 123a-b EB55 Annex 35	DR	The PDD has described the calibration procedure, frequency of calibration and has identified the entity responsible for the same.	Y
B.13.5. Are procedures identified for maintenance of monitoring equipment and installations?	VVM Para. 123a-b	DR	The maintenance of monitoring equipment and installations will be carried out by the EPC contractor.	Y
B.13.6. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	VVM Para. 123a-b EB55 Annex 35	DR SV	PP has mentioned procedure for day to day records and storage of records. The same was checked during site visit.	Y
B.13.7. Are procedures identified for dealing with possible monitoring data adjustments and missing data allowing redundant reconstruction of data in case of monitoring problems?	VVM Para. 124a-c	DR	The procedures for dealing with monitoring problems have been covered in section B.7.2 and annex 4 of the PDD.	Y
B.13.8. Are procedures identified for internal audits of GHG project compliance with	VVM Para.124a-c	DR SV	Management structure for the project activity has been correctly described in the PDD. It is consistent with that observed during the site visit.	Y

	operational requirements where applicable?				
B.13.9.	Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	VVM Para. 124a-c	DR	Reviewing the data is a part of the O&M service of the EPC contractor and is covered under the management structure mentioned in section B.7.2 of the PDD.	Y
B.13.10.	Describe the ability of the project participants to implement the monitoring plan.	VVM Para. 124c	DR SV	The project activity is already commissioned and the PP can implement the monitoring plan since the O&M contractor is experienced in the same.	Y
B.14. Baseline Details					
B.14.1.	Is there any indication of a date when determining the baseline?	PDD Section B.8/Annex 3	DR	The baseline has been determined on 26/05/2011, as mentioned in the PDD.	Y
B.14.2.	Is this consistent with the time line of the PDD history?	Also see revision history of the PDD	DR	The date of the webhosted PDD is 26/05/2011. The PDD has been webhosted on 01/06/2011. The baseline has been determined on 26/05/2011 which is before PDD publication	Y
B.14.3.	Is all data required provided in a complete manner by annex 3 of the PDD?	PDD Annex 3	DR	All the data required for baseline determination is mentioned in section B.6.2 of PDD.	Y
C. Duration of the Project / Crediting Period					
C.1.1.	Are the project's starting date and operational lifetime clearly defined and reasonable?	VVM Para. 102a-c PDD Section C.1.1/C.1.2	DR	The operation lifetime is 20 years as described in the PDD which is same as that of other wind power projects. PP has provided purchase orders as evidence to support the start date of the project activity which is as per para 67 of EB 41 meeting report. Hence the start date is appropriate.	Y
C.1.2.	Is the assumed crediting time clearly	VVM Para. 102a	DR	Fixed crediting period of 10 years has been selected for the project activity and it is reasonable. PP has carried out the investment analysis for the entire lifetime of the	Y

	defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?	PDD Section C.2/C.2.1/C.2.2		project activity i.e. 20 years. PP has mentioned appropriate start date of the crediting period.	
C.1.3.	Does the project's operational lifetime exceed the crediting period	VVM Para. 102a PDD Section C.1.2/C.2.1.1/C.2.1.2	DR	The project operational life is expected to be 20 years, which exceeds the crediting period of 10 years.	Y
C.1.4.	Does the start date indicate whether this is a new project activity or a pre-existing project activity?	VVM Para. 102a/ 98 PDD Section C.1.1/C.2.1.1	DR	The start date of the project activity 28/10/2010 which is after 2nd August 2008 and thus it is a new project activity.	Y
D. Environmental Impacts					
D.1.1.	Does the project comply with environmental legislation in the host country?	VVM Para. 131/134d PDD section D	DR	PP has provided the latest applicable EIA notification. The project complies with the environmental legislation in the host country.	Y
D.1.2.	Has an analysis of the environmental impacts of the project activity been sufficiently described?	VVM Para. 131 PDD section D	DR	The proposed project activity involves the establishment of a wind energy based power plant and hence there are no adverse environmental impacts. Also, as per the latest applicable EIA notification, an EIA need not be carried out for the proposed project activity.	Y
D.1.3.	Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	VVM Para. 131 PDD section D	DR	As per the notification dated 14th September 2006 by Ministry of Environment and Forests (MoEF), Govt. of India, wind projects are not included in the list of projects that have to get Prior Environmental Clearance either from State or Central Govt. authorities and hence no EIA study is required.	Y
D.1.4.	Will the project create	VVM Para.	DR	The proposed project activity involves the establishment of a wind energy based power	Y

any adverse environmental effects?	131 PDD section D		plant and hence there are no adverse environmental effects.	
D.1.5. Are trans-boundary environmental impacts considered in the analysis?	VVM Para. 131 PDD section D	DR	Not applicable since an EIA is not required to be carried out for the project activity.	Y
D.1.6. Have identified environmental impacts been addressed in the project design?	VVM Para. 131 PDD section D	DR	Not applicable since an EIA is not required to be carried out for the project activity.	Y
E. Stakeholder Comments				
E.1.1. Have relevant stakeholders been consulted?	VVM Para. 128a PDD Section E.1	DR SV I	The PP has identified the villagers, gram panchayat members, Van Samiti members, forest officer and representatives of the EIL as the local stakeholders. The relevance of the stakeholders identified was verified during the site visit. The stakeholders identified are relevant to the proposed project activity.	Y
E.1.2. Have appropriate media been used to invite comments by local stakeholders?	VVM Para. 128a PDD Section E.1	DR SV I	The stakeholders have been invited through an advertisement published in the local newspaper in local language on 10/01/2011. PP has submitted evidence for the same and it was cross verified during the site visit.	Y
E.1.3. Is the undertaken stakeholder process described in a complete and transparent manner?	VVM Para. 128b PDD Section E.1	DR SV I	The stakeholder process has been completely described in section E.1 of the PDD. It was cross verified during the site visit.	Y
E.1.4. Is a summary of the stakeholder comments received provided?	VVM Para. 128b PDD Section E.2	DR SV I	The summary of stakeholder comments has been provided in section E.2 of the PDD. It was cross verified during the site visit.	Y
E.1.5. Has due account been taken of any stakeholder comments received?	VVM Para. 128b PDD Section E.3	DR SV I	There were no negative comments received from the stakeholder and hence no action needs to be taken. This is reflected in section E.3 of the PDD and was cross verified during the site visit.	Y

Annex 3: Overview of Findings

	CARs	CLs	FARs
Total Number raised	10	01	00

Date:	22/08/2011		Raised by:	Assessment Team	
Type:	CAR	Number:	01	Reference:	AU4
Lead Assessor Comment:					
PP is requested to submit the Host Country Approval for the project activity					
Project Participant Response:			Date: 05/10/2011		
PP (Project Participant) will submit the Host Country Approval once received from MOEF. PP has applied for the same.					
Documentation Provided by Project Participant:					
HCA dated 15/12/2011 with ref. No. 4/21/2011-CCC (submitted on 24/12/2011)					
Information Verified by Lead Assessor:					
HCA dated 15/12/2011 with ref. No. 4/21/2011-CCC					
Reasoning for not Acceptance or Acceptance and Close Out:			Date: 24/12/2011		
PP has submitted LoA on 24/12/2011 which has reference no 4/21/2011-CCC. The title of the project in the letter is checked with the submitted PDD and found appropriate. The letter has also mentioned that India is a party to the Kyoto protocol, the participation in the CDM project is voluntary and the project activity contributes to the Sustainable Development of the Host Country. Hence the LoA has been found in accordance to VVM. Version 1.2 paragraph 45. Thus CAR01 is closed.					
Acceptance and Close out by Lead Assessor: Closed			Date: 24/12/2011		

Date:	22/08/2011		Raised by:	Assessment Team	
Type:	CAR	Number:	02	Reference:	AU4
Lead Assessor Comment:					
PP is requested to submit a completed MoC form for the project activity in the format prescribed in EB 45 annex 60.					
Project Participant Response:			Date: 05/10/2011		
Please find attached the MoC for the project under consideration.					
Documentation Provided by Project Participant:					
Completed MoC form					
Information Verified by Lead Assessor:					
<ol style="list-style-type: none"> 1. Project title is consistent with the PDD. 2. Name of Project participant is consistent with PDD. 3. 'Cepco Industries Pvt. Ltd' and 'Enercon (India) Power Development Pvt. Ltd' are nominated as focal point entities. 					
Reasoning for not Acceptance or Acceptance and Close Out:			Date: 10/10/2011		
MoC is found in line with guidance EB45 Annexure 59, thus CAR 02 is closed					
Acceptance and Close out by Lead Assessor: Closed			Date: 10/10/2011		

Date:	22/08/2011		Raised by:	Assessment Team		
Type:	CAR	Number:	03	Reference:	AU4	
Lead Assessor Comment:						
In the PDD section 'Summary of ex-ante estimation of emission reductions' number is not found consistent with the PDD template. Please correct the same.						
Project Participant Response:				Date: 05/10/2011		
The PDD section number for "Summary of ex-ante estimation of emission reductions" has been revised to B.6.4 as per PDD template.						
Documentation Provided by Project Participant:						
Revised PDD						
Information Verified by Lead Assessor:						
PDD has been corrected with respect to the numbering in the PDD template. 'Summary of ex-ante estimation reductions' has been provided in Section B.6.4 of the PDD.						
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 04/09/2012		
All sections in the PDD are consistent with the PDD template, however PP is requested to clarify about the simple OM calculation as the same is not found in compliance with the tool 'Tool to calculate the emission factor for an electricity system' as per EB-63 Annex-19.						
Project Participant Response:				Date: 04/09/2012		
The revised calculation for the simple OM has been presented in revised PDD as per the tool 'Tool to calculate the emission factor for an electricity system' as per EB-63 Annex-19.						
Documentation Provided by Project Participant:						
Revised PDD (Version 8, dated 04/09/2012)						
Information Verified by Lead Assessor:						
Revised PDD Version 08 dated 04/09/2012 and ER calculation sheet.						
Reasoning for not Acceptance or Acceptance and Close Out:				Date: : 05/09/2012		
PP has corrected the OM calculation approach in the revised PDD which is based on the generation weighted average of the most recent 3 years' (2007-08, 2008-09; 2009-10) at the time of the submission of the PDD. This approach is found consistent to the emission factor calculation as per EB-63 Annex-19. PP has accordingly corrected the ER calculation and same is found correct and hence the CAR#3 is closed out.						
Acceptance and Close out by Lead Assessor:				Date: 05/09/2012		

Date:	22/08/2011		Raised by:	Assessment Team		
Type:	CAR	Number:	04		Reference:	AU4
Lead Assessor Comment:						
PP is requested to mention all the applicability criteria as per the applicable methodology in section B.2 of the PDD						
Project Participant Response:				Date: 05/10/2011		
Section B.2 of PDD has been revised to include all the applicability criteria.						
Documentation Provided by Project Participant:						
Revised PDD version 02 dated 05/10/2011						
Information Verified by Lead Assessor:						
PP has revised Section B.2 of the PDD to include all the applicability criteria as per the approved small scale methodology AMS I.D version 17 (EB61).						
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 10/10/2011		
Section B.2 provides the justification criteria for the choice of project category and hence CAR 04 is closed.						
Acceptance and Close out by Lead Assessor: Closed				Date: 10/10/2011		

Date:	22/08/2011	Raised by:	Assessment Team
Type:	CAR	Number:	05
Reference:	AU4		
Lead Assessor Comment:			
<p>It is not clear how the net electricity supplied to the grid by project activity will be calculated?</p> <p>PP is requested to provide the copy of JMR report</p> <p>It is stated in section B.7.1 that the parameter $\sum_{\text{Project}} E_{\text{WEC,Import}}$ & $\sum_{\text{Project}} E_{\text{WEC,Export}}$ gives the import and export to grid by all WTGs including project activity, please clarify how the formula $EG_y = \sum_{\text{Project}} E_{\text{WEC,Export}} - \sum_{\text{Project}} E_{\text{WEC,import}}$ is correct and appropriate?</p>			
Project Participant Response:		Date: 05/10/2011	
<p>$\sum_{\text{Project}} E_{\text{WEC,Import}}$ & $\sum_{\text{Project}} E_{\text{WEC,Export}}$ gives the import and export to grid by all WTGs included in project activity only. Thus the net electricity exported by the WTGs of the project under consideration can be given by following equation. Also, the section B.7.1 has been revised for better clarity.</p> <p>$EG_y = \sum_{\text{Project}} E_{\text{WEC, Export}} - \sum_{\text{Project}} E_{\text{WEC, Import}}$</p>			
Documentation Provided by Project Participant:			
A copy of JMR for the month of August 2011			
Information Verified by Lead Assessor:			
Copy of JMR Revised PDD			
Reasoning for not Acceptance or Acceptance and Close Out:		Date: 28/11/2011	
<p>Explanation acceptable and the same has been provided in the revised PDD. .</p> <p>However CAR is reopened on 28/08/2012 in which PP is requested to clarify the following points</p> <ol style="list-style-type: none"> 1. As mentioned in the section B.7.2 of the PDD the PP is using a number of monitored parameters to calculate the quantity of net electricity supplied to the grid instead of directly metering the net electricity supplied to the grid. The PP is requested to clarify why the same are not mentioned as monitoring parameter in the section B.7.1 of the PDD. 2. PP is also requested to provide the clear information regarding the ownership of the metering system e.g. whether this is under the PP or grid company control and explain the same with a schematic diagram to illustrate the relationship and boundary between the proposed CDM project and "the turbines from other wind farm developers at the project site". 			
Project Participant Response:		Date: 28/08/2012	
<ol style="list-style-type: none"> 1. The net electricity supplied to the grid by the project activity is a calculated value which is arrived by using the value of electricity generation by project WECs, non-project WECs and the cumulative value of electricity import and export of the entire number of WECs connected to substation (i.e. including project and non-project WECs) as measured at the pooling substation. Since the measurement of electricity generation of non-project WECs is not feasible for PP, hence only parameters i.e. EG_y (sourced from breakup sheet) and $\sum E_{\text{project, Controller, Export}}$ (Summation of electricity exported by WECs of project activity, as measured at the individual controller of each WEC); have been included as the monitoring parameters in section B.7.1 of PDD. 2. A schematic diagram has added to PDD under section B.7.2 to describe the monitoring arrangement, metering system with respective ownership details under project boundary 			
Documentation Provided as Evidence by Project Participant:			
Revised PDD (Version 7)			
Information Verified by Lead Assessor:			
Revised PDD version 07 dated 28/08/2012			

Reasoning for not Acceptance or Acceptance and Close Out:	
<p>1.As the monitoring parameter 'Net Electricity Supplied to the Grid ' is being continuously monitored and readings are also hourly measured and monthly recording Hence the same is found inline with the methodology requirement . However the apportioning procedure involves the monitoring parameters which is the cumulative values involving project and non-project WECS hence to get that value data from non-project wind turbines will also be required .As to arrange that data is beyond PP's control and hence the same is not mentioned in the section B.7.1 . However PP has included a new monitoring parameter $\sum E_{\text{project, Controller, Export}}$ in the section B.7.1 which will be used to crosscheck the value of net electricity supplied to the grid. As this value of net electricity supplied to the grid cannot be higher than that the summation of the electricity exported as measured at the controller of individually WEC.This is found a valid crosscheck and hence the response from the PP is found acceptable and the CAR#5(1) is closed out.</p> <p>2. In the revised PDD PP has included the schematic diagram which clearly illustrates the relationship and boundary between the proposed CDM project and "the turbines from other wind farm developers at the project site".This diagram clearly indicates that the LCS meters are owned by the PP however the substation main and check meter are owned by the state utility e ownership of the energy meters. The same is found consistent with the document validated and hence the response from PP is found acceptable . However PP is requested to address following points also:</p> <p>CAR#5(2)(a) raised : Please clarify why the build Margin value is not clearly explained in the Step-5 of the section B.6.1 of the PDD similar to the OM value.</p> <p>CAR#5(2)(b) raised: This substation meter measures export and import of all WTG including project and non project WECs, and the measured values of the same are available to PP . In this regard PP is requested to clarify why the same are not included in the section B.7.1</p> <p>CAR#5(2)(c) raised: PP is also requested to clearly explain about the parameters $\sum_{\text{Project}} E_{\text{WEC, Export}}$ and $\sum_{\text{Project}} E_{\text{WEC, Import}}$ in the section B.7.2 of the PDD.</p>	
Project Participant Response:	Date: 12/09/2012
<p>5(2)(a) Build Margin value is explained in the Step-5 of the section B.6.1 of the revised PDD.</p> <p>5(2)(b) $E_{\text{JMR, Export}}$ and $E_{\text{JMR, Import}}$ has been included as monitoring parameters in section B.7.1 of the revised PDD.</p> <p>5(2)(c) $\sum_{\text{Project}} E_{\text{WEC, Export}}$ and $\sum_{\text{Project}} E_{\text{WEC, Import}}$ has been explained in the section B.7.2 of the revised PDD.</p>	
Documentation Provided by Project Participant:	
Revised PDD (Version 9)	
Information Verified by Lead Assessor:	
Revised PDD version 09 dated 12/09/2012	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 13/09/2012

PP revised the PDD by clearly mentioning the value of the BM as 0.81231 tCO ₂ eq/MWh which is found consistent with the "CO ₂ Baseline Database for the Indian Power Sector", Version 6.0, March, 2011; published by Central Electricity Authority (CEA), Government of India. Hence the response from the PP is found acceptable and the CAR#5(2)(a) is closed out.	
PP has included the same in the section B.7.1 of the PDD .The same has been validated and found that monitoring arrangement described in the monitoring plan are feasible within the project design and in compliance with the methodology requirement. Hence the response from the PP is found correct and the CAR#5(2)(b) is closed out. PP clearly explained the same in the revised PDD stating that these are the summation of apportioned value of electricity exported and imported by WECs of project activity respectively. The response from the PP is found acceptable. However PP is further requested to clearly mention the information about the non project wind turbines which are present at the same wind farm in the section A.2 of the PDD. CAR#5(2)(c) Open..	
Project Participant Response:	Date: 03/10/2012
The information about the non project wind turbines which are present at the same wind farm has been included in the section A.2 of the revised PDD.	
Documentation Provided by Project Participant:	
Revised PDD (Version 10)	
Information Verified by Lead Assessor:	
Revised PDD version 10 dated 03/10/2012	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 03/10/2012
PP has correctly updated the information in the section A.2 of the PDD in which it is clearly mentioned that at the Project site there are wind turbines of other wind turbine developers also. This information is consistent with the apportioning procedures mentioned in the section B.7.2 of the PDD .Hence the response from the PP is found acceptable and the CAR#5(2)(c) is closed out.	
Acceptance and Close out by Lead Assessor:	Date: 03/10/2012

Date:	22/08/2011	Raised by:	Assessment Team		
Type:	CL	Number:	06	Reference:	AU4
Lead Assessor Comment:					
PP is requested to justify how the prior consideration of CDM is in line with EB 49 Annex 22.					
Project Participant Response:				Date: 05/10/2011	
The project participant informed host country DNA and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status. This notification was made on 29 th March 2011 whereas project start date was 28 th October 2010, thus this notification was made within six months of the project activity start date. Hence project justifies the guidelines on the demonstration and assessment of prior consideration of CDM (EB 49 Annex 22). This notification got the acknowledgement from UNFCCC on 2 nd May 2011, the copy of which has been provided to DOE.					
Documentation Provided by Project Participant:					
Acknowledgement from UNFCCC on prior consideration					
Information Verified by Lead Assessor:					
The UNFCCC acknowledgement has been verified and found in line with one of the requirements with respect to Guidelines on the demonstration and assessment of prior consideration of CDM (EB 49 Annex 22).					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 10/10/2011	
PP needs to further provide proof for informing the host country DNA of prior consideration of CDM. Open.					
Acceptance and Close out by Lead Assessor: Open				Date: 10/10/2011	
Project Participant Response:				Date: 08/12/2011	
The project participant informed host country DNA through online application form. The confirmation for the same has been sent by MoEF in reply to the follow up mail from the PP. Snapshot of the online application has been sent by MoEF as proof.					

Documentation Provided by Project Participant:	
Follow up mail from PP and its reply from MoEF dated 08/12/2011 Snapshot of online application	
Information Verified by Lead Assessor:	
Follow up mail from PP and its reply from MoEF dated 08/12/2011 Snapshot of online application	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 09/12/2011
The follow up mail and MoEF confirmation regarding PP's prior intimation to MoEF on 29/03/2011 has been checked along with the snapshot of the online application by the PP sent by MoEF. The same was found to be appropriate and the date of intimating Indian DNA (MoEF) is within 6 months of the start date of the project activity (28/10/2010). This is as per the Guidelines on the demonstration and assessment of prior consideration of CDM (EB 49 Annex 22). Hence closed.	
Acceptance and Close out by Lead Assessor: Closed	Date: 09/12/2011

Date:	22/08/2011	Raised by:	Assessment Team		
Type:	CAR	Number:	07	Reference:	AU4
Lead Assessor Comment:					
INVESTMENT ANALYSIS RELATED COMMENTS					
<div>1. PP is requested to explain calculation of Generation Based Incentives considered and also ask for a copy of declaration and application submitted to MNRE for claiming GBI.</div> <div>2. Please provide the evidence for O&M cost and escalation considered.</div> <div>3. PP is requested to explain interest calculation and list all assumptions regarding the same.</div> <div>4. Please confirm if PP has benefits from scheme like REC, If Yes, PP is requested to justify why such benefits are not included as revenue in financial analysis.</div> <div>5. Please include results of sensitivity and threshold limit (Scenario in which the calculated IRR crosses benchmark also explain the likelihood of that scenario).</div> <div>6. PP is requested to justify the choice of companies for calculation of beta, why the number of companies has been limited to 6 as there are many companies listed in power domain.</div> <div>7. PP is requested to provide screen shots for beta values considered</div>					
Project Participant Response:				Date: 05/10/2011	

1. As per GBI guidelines, the GBI scheme is applicable only to projects which do not claim accelerated depreciation benefit. The PP intends to claim accelerated depreciation benefit and hence will not be eligible for claiming GBI. Therefore investment analysis is conducted using accelerated depreciation. This can be verified by DOE from the investment analysis spreadsheet.

The DPR for the project activity was prepared using accelerated depreciation approach as well as using GBI approach and these approaches are mutually exclusive. The accelerated depreciation approach provided marginally better results and therefore it was selected by PP.

2. The O&M cost and the corresponding escalation rate have been sourced from technology supplier offer dated 14th September 2010. The same has been submitted to DOE.
3. The project entails a total investment of INR 835.92 million, out of which 70% (INR 585.14 million) is funded through a term loan and the rest (INR 250.78 million) through equity. This can be checked from DPR dated 24 September 2010 which was considered by Cepco's board for decision making. For investment analysis, the interest rate for the loan amount is taken as 10.25% based on the lending rate provided by the Reserve Bank of India (RBI) applicable at the time of investment decision. The tenure of 10 years has been sourced from MPERC order (May, 2010) and same was considered in the DPR dated 24 September 2010. The investment analysis sheet has been revised and the interest calculations have been presented in a transparent manner.

Further it may be noted that the loan application letter was made by PP on 22 February 2011, which is after the decision making date. The loan application dated 22 February 2011 requested a loan amount of INR 648 million (equivalent amount for 18 WTGs) which is more than envisaged debt of INR 585.14 million. Therefore we have conducted sensitivity at the debt value of INR 648 million. The equity IRR at debt amount of INR 648 million works out to be 10.20% which is less than the benchmark.

4. As per the eligibility rules specified for the Renewable Energy Certificates (REC) mechanism dated 14 January 2010 (source: https://www.recregistryindia.in/pdf/REC_Regulation/2%28a%29CERC_Regulation_on_Renewable_Energy_Certificates_REC.pdf), the project is not eligible for participating in the scheme as it has taken the preferential tariff route. The undertaking from PP confirming that they will not be availing benefits under the REC mechanism is also being submitted to DOE.
5. Results of the sensitivity analysis and the corresponding threshold limits for the key parameters (Scenario in which the calculated IRR crosses the benchmark) have been included in the PDD (pg. 16 to 17). The underlying explanation of the likelihood of that scenario occurring is also presented in the PDD. The sensitivity analysis has also been presented separately in the "sensitivity analysis summary" sheet in the investment analysis workbook.
6. The choice of companies for calculation of beta value has been limited to companies listed on the BSE200 index (used for calculating the market risk premium) which are engaged in the power generation business and for which data pertaining to the three year period in consideration is available. Earlier, the two companies: BF Utilities and Gujarat Industries Power Co. Ltd were also included in the analysis. These have been excluded as they are not part of the BSE-200 index. The applicable beta without these two companies is 1.253 and the applicable beta including these two companies is 1.28. Therefore, the chosen applicable beta value is conservative.

Company Name	Bloomberg Symbol	Beta value
Tata Power Co Ltd	TPWR IN Equity	0.999
CESC in equity	CESC IN Equity	1.096
Neyveli Lignite Corporation	NLC IN Equity	1.358
Reliance Infrastructure Ltd	RELI IN Equity	1.553
GMR Infrastructure Limited	GMRI IN Equity	1.245
GVK Power & Infrastructure Ltd	GVKP IN Equity	1.296
NTPC LTD	NTPC IN Equity	0.724
TORRENT POWER LIMITED	TPW IN Equity	1.293
Reliance Power Limited	RPWR IN Equity	1.227
LANCO INFRATECH LTD.	LANCI IN Equity	1.741
Average Beta		1.253

7. The Bloomberg beta snapshots have been provided as "Appendix 2" in the revised PDD.

Documentation Provided by Project Participant:

Technology supplier offer
The Detail Project Report (DPR)
Bank Loan application
Revised Investment analysis
Undertaking from PP that REC benefits will not be for the project under consideration
Revised PDD and Benchmark calculation sheet

Information Verified by Lead Assessor:

Technology supplier offer
The Detail Project Report (DPR)
Bank Loan application
Revised Investment analysis
Undertaking from PP that REC benefits will not be for the project under consideration
Revised PDD and Benchmark calculation sheet

Reasoning for not Acceptance or Acceptance and Close Out:

Date: 10/10/2011

1. The DPR submitted by the PP shows that both approach (considering GBI incentives in financial analysis & considering accelerated depreciation, had been taken into account while making the investment decision. Accelerated depreciation approach was considered better as compared to GBI approach and hence IRR for the project activity was restated in PDD ver02. The same is acceptable and closed.
2. O&M cost & escalation cannot be traced from the offer letter from Enercon. Open
3. The interest calculation has been corrected by PP, but it is not clear why interest for complete 1 year has been considered in year ending March 2012. PP needs to justify the same. OPEN
4. PP has submitted an undertaking for non-usage of benefits under Renewable Energy Certificates Mechanism. The same has been checked and is acceptable. PP is not eligible for availing benefits accruing from renewable energy certificates as the PP is selling the electricity at a preferential tariff according to the Power Purchase Agreement to the state utility. The justification provided by the PP is acceptable, Closed.
5. The results of sensitivity analysis and threshold limit for all the sensitive parameters have been included in the revised PDD. Appropriate justification for each parameter limit has also been provided. Hence acceptable and closed.
6. PP has included the justification on choice of beta values and provided publically available source to verify the same. The information and data submitted has been checked and found acceptable. Closed
7. PP needs to justify the availability of implementation schedule (Cell no C6 to G6 'cashflow'), used to calculate XIRR at the time of decision making, in doing so please refer para 6 of EB62 Annex 5. OPEN

Project Participant Response:

Date: 10/11/2011

2. For O&M cost & escalation, please refer page 3 (serial no-9) of the offer letter from Enercon.	
3. The interest calculation has been revised for the year ending March 2012. The updated IRR values have been updated in PDD.	
7. Please refer page 2 (serial no-7, terms of payment) of the offer letter from Enercon. This justifies the schedule of cash flow and meet the requirements of para 6 of EB62 Annex 5.	
Documentation Provided by Project Participant:	
Investment analysis_version 3	
Information Verified by Lead Assessor:	
Revised Investment Analysis_version 3 spreadsheet	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 03/05/2012
<p>2. The source of O&M cost and escalation has been checked and found to be appropriate. Hence closed.</p> <p>3. Interest calculation has been considered after the commissioning of the WTGs and the revised calculation is acceptable. Hence closed.</p> <p>7. The terms of payment mentioned in the offer letter from Enercon clearly specifies the implementation schedule. The offer letter dated 14/09/2010 was available at the time of decision making (30/09/2010) and is in line with para6 of EB 62 annex 5. Hence closed.</p> <p>Further to this please address the following issues:</p> <p>8. The submitted spreadsheet is not reproducible: any modification leads to an error message. PP is requested to list all relevant assumptions, data, input values and references used in the investment analysis and the results of the investment analysis as per EB 48 Annex 60 paragraph 10 (a).</p> <p>9. PP is requested to justify the calculation of the equity IRR is in line with paragraph 10 of the Guidelines on the Assessment of Investment Analysis version 5, as the loan portion of the investment is included in the equity IRR calculation.</p>	
Project Participant Response:	Date: 03/05/2012
<p>8. A revised investment analysis has been submitted to DOE listing all relevant assumptions, data, input values and references used in the investment analysis and the results of the investment analysis as per EB 48 Annex 60 paragraph. The new analysis sheet is error free as well.</p> <p>9. As per EB-62, Annex-5 (Guidelines on the assessment of investment analysis), Para-10; the calculation of equity IRR only the portion of investment costs which is financed by equity should be considered as the net cash outflow, the portion of the investment costs which is financed by debt should not be considered a cash outflow. The equity IRR presented in investment analysis sheet considers only the portion of investment costs which is financed by equity in net cash outflow. This has been presented in revised investment analysis in more transparent and user friendly manner.</p>	
Documentation Provided by Project Participant:	
Revised Investment analysis sheet (Version 6.0)	
Information Verified by Lead Assessor:	
Revised Investment analysis sheet Version 6	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 04/05/2012
<p>8. All data and formulae in the revised excel sheet have been provided in transparent and reproducible manner. This was checked by the assessment team and found acceptable. Hence closed.</p> <p>9. The presentation of calculation of net cash outflow has been presented more clearly in the revised excel sheet. It is found in line with the requirement of para 10 of EB62 Annex 5. In the calculation of equity IRR only the portion of investment costs which is financed by equity has been considered as the net cash outflow. Hence acceptable and closed.</p>	
Acceptance and Close out by Lead Assessor: Closed	Date: 04/05/2012

Date:	22/08/2011		Raised by:	sud, sudcdm1@gmail.com	
Type:	CAR	Number:	08	Reference:	ISHC comment

Lead Assessor Comment:

- a. DOE to write to the party who prepared the DPR/FR which is submitted to the banks and other agencies and the same is verified against the one submitted to the DOE by PP/Consultant.
- b. DOE must not entertain this project any more if found the DPR/FR is tampered with at any point in time. PP cannot give different DPR's and FR's. They must submit only the one given to Banks and other agencies while obtaining loans and decision making time.
- c. DOE to ensure that the PDD values are consistent and ensure that the CDM project is a genuine project
- d. DoE to check the Detailed Project Report and Feasibility Report which is submitted to the other agencies and Banks by Project owner and ensure that the values match with the DPR/FR submitted to DoE also.
- e. Careful study must be done so that the DPR/FR is not in different versions made and submitted with different purposes to different agencies, which is totally unacceptable, illegal and unethical.
- f. Project owner should show some undertaking letter from bank manager to DoE stating that both DPR's are same. These kinds of letters should not be accepted and entertained by DoE at face value, but must be checked independently. While collecting the DPR/FR from banks and other agencies, all DPR/FR pages should be counter signed by Banks and other agencies so that the real DPR/FR given to other parties by the PP/Consultant is same as the one submitted to DOE.
- g. DPR/FR values must be probed fully. DOE must take a written undertaking from the PP/Consultant about the list of parties to whom this DPR/FR is submitted and for what purposes. Then DOE should cross check with all the parties and confirm that the same DPR/FR is submitted to all the parties correctly without any changes. DOE must not accept any reports and undertakings from PP/Consultant. DOE must make independent evaluation and use totally different parties without informing the PP or Consultant to cross check the facts.
- h. Has the PP considered the CDM revenues while envisaging the project? Without CDM the project was not viable, is it right? This project is having a debt component? Then how bankers or lenders gave the loan? Have the bankers or lenders considered the CDM revenues while agreeing to give loan to this projects? If not this project should be rejected right away by DOE by terminating the contract forthwith. If yes, where is the proof? What is the date of the evidence document from bank? Is this document printed now a days or earlier? DOE to independently check the same. If the document is available from Bank it must be checked from all angles so that it is genuine. This is normally done, DOE to be aware of this please. Please check the communication the PP had during that time with banks, emails and postal receipts and the weights and dates mentioned on the receipts. Do not believe in courier bills and receipts. Insist on government owned postal service receipts only. If the project is fully equity project then on what basis the PP has invested full equity in to the project while considering the CDM revenue? DOE to check the same in detail and bring out the facts. Is there any past record of this PP to invest or not to invest at returns what he is talking about in this project? Proper evidences must be reviewed and digged out by the DOE and take decision on the project based on established facts. Do not ask documents from PP, DOE to collect the same from different sources to do independent evaluation.
- i. How is the base line defined in this project? Is Base line hypothetically defined with no proper evidences and proper justification? In such case, DOE cannot take the base line as suggested by the PDD. Please check that there are real emission reductions beyond the real and factual base line. It may so happen that this project qualifies for no CER's. DOE cannot assume values and things as giving by this PP. Whatever values are considered throughout the project in all documents including the real DPR (not the one prepared for CDM, the one given to the banks and others), they must be validated, verified and double checked. Do not ask PP for DPR. Ask the parties who have been given DPR by the PP. Get directly from the bank and others by each page of the DPR and Feasibility report signed. Such document can be considered as a real DPR or FR.
- j. From DOE side which auditor has done marketing and business development for acquiring this business of validating this project? With whom he or she was co-ordinating at PP or CER buyer? The same person who has done the marketing and business development to acquire the business do validation or participate in any manner what so ever in the validation process? One cannot do like that. It is against the accreditation rules and norms followed since ages. DOE should send auditors from different offices or countries to do this validation audit. DOE must take care of impartiality and accreditation rules. Due to the targets set by the DOE managements auditors are doing marketing and meeting clients and giving promises that the project will be taken care. Is it acceptable and fair? This must be stopped. No auditor should do marketing. Only non-auditing staff should do marketing. DOE to ensure the same please.
- k. If applicable only: Is these machines, equipment was a part of any bundle of CDM activity envisaged and developed earlier. DOE to check the same through independent sources also. Once some bundles are non-

additional and getting negative validation from a DOE, PP is rolling out the same project as an individual project which is not a CDM project at all. DOE to verify the same from independent sources and also take undertaking in the form of an affidavit from the PP's that any misrepresentation or false statement with respect this would attract strict legal action from UNFCCC and DOE. Furthermore the registered project must be de-registered in case of any future findings contradicting the submissions made by the project owner.

l.DOE to be more careful so that this is a genuine CDM project. What is the exact project cost? The project cost is covering what? Each value considered must be validated with proof. The machinery is second hand purchased or fresh and new from an OEM? In either case DOE to check all the quotations, proposals, purchase orders, invoices, way bills, transport bills, proof of payments like bank statements. DOE to check with banks by way of written confirmation the amount transacted, to whom the money is paid, when the money is paid, is the party paid is the correct party as shown in the purchase orders. This must be probed thoroughly and real values to taken for additionality calculation. Then I'm sure the additionality is not there at all in such a situation.

m. Is the project equipment purchased second hand equipment or sourced from cheap foreign sources? If yes, the issue must be probed by DOE. Total project costs mentioned by PP will not be the same as originals. Hence no additionality. These facts must be probed in full by DOE by checking all documents and money transactions along with bank statements and certified accounts by a legally acceptable financial analyst.

Project Participant Response:	Date: 05/10/2011
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Reply to queries from a to h

DPR dated 24 September 2010 was prepared based on the assumptions that were available at the time of decision making. The assumptions and their sources have been provided to DOE for validation.

As per "Guidance on the Assessment of Investment Analysis, version-05, Annex-5, EB 62" paragraph 6, *"input values used in all investment analysis should be valid and applicable at the time of the investment decision taken by the project participant"*. We would like to submit that the PP made the loan application on 22 February 2011 which is after the decision making date. Further as per investment guidance, input values therefore shall be based on the relevant information available at the time of the investment decision and not information available at an earlier or later point.

However, we have still provided DOE the loan application letter that was made for securing loan for the project activity. The assumptions under the loan application letter are within the sensitivity range considered in the PDD for demonstrating additionality.

- i. The project activity is a new grid-connected wind power project supplying electricity to the NEWNE (Northern, Eastern, Western and North-Eastern) grid.

According to the applied methodology (category AMS I.D, "Grid connected renewable electricity generation.") the baseline scenario for the project activity is the electricity delivered to the grid that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources.

Further, as per paragraph 12 of approved methodology AMS-ID version 17, *"A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the Tool to calculate the Emission Factor for an electricity system"*

The PP has selected the ex-ante baseline for the project activity which has been computed by applying "Tool to calculate the emission factor for an electricity system", version 02.2.1". The values for computation of emission factor are sourced from latest CEA Database for CO2 emission factor, version 6 which was available at the time of webhosting of PDD.

- j. This query is directed to DOE.

- k. The project is a green-field project activity envisaged by PP in the state of Madhya Pradesh. WTGs for the project activity are procured from Enercon (India) Limited. The offer letter dated 14 September 2010 and purchase order dated 28 October 2010 have been provided to DOE for verification.

- l. The project is a green-field project activity. A copy of the purchase order and the offer has been provided to DOE to verify the each component of project cost. The same can be verified by DOE. The project machinery is new and has been supplied by Enercon (India) Ltd.

- m. The equipment utilised in the project activity is new and has been supplied by Enercon (India) Ltd. It is indigenously produced by Enercon (India) Ltd. Apart from the purchase order; clearances from regulatory bodies also indicate that the equipment supplier is Enercon (India) Ltd.

The actual project cost is INR 774 million which is 7% lower than the offer made by the WTG supplier (Enercon (India) Limited). The equity IRR at actual project cost of INR 774 million is 12.49% which is lower than the benchmark. Further sensitivity on project cost provided in offer letter dated 14 September 2010 is conducted at +/- 10% which covers the actual cost of the project activity.

Documentation Provided by Project Participant:

The detail project report for the project under consideration
Bank Loan application
Loan sanction letter
Purchase order

Information Verified by Lead Assessor:

The detail project report for the project under consideration
Bank Loan application
Loan sanction letter
Purchase order

Reasoning for not Acceptance or Acceptance and Close Out:

Date: 29/11/2011

a. DPR was prepared on the basis of Enercon's offer and same was submitted to the bank. Same has been verified by assessment team and found correct. Closed	
b. No such case of tempering is found by assessment team . Closed	
c. All the input values mentioned have been crosschecked by DOE and found acceptable. Closed	
d. Values mentioned in the DPR have been crosschecked by DOE and found consistent with the DPR submitted to the bank. Closed.	
e. DOE has verified that there is no such case for preparation of different version of DPR/FR for different agencies. Closed	
f. As explained above authenticity of the DPR has been verified by the verification team and found correct. Closed	
g. As explained above authenticity of the DPR has been verified by the verification team and found correct. Closed.	
h: A copy of DPR, Loan application letter has been submitted by the PP. Investment analysis has been done based on the assumptions taken while making the investment decision. The same was based on the DPR and the values are consistent in the investment analysis spreadsheet and the PDD. DOE has done the validation independently and has cross checked all the assumptions mentioned in the DPR. Acceptable and closed.	
i. Baseline for the project has been correctly defined as per the applied methodology AMS I.D version 17. Acceptable and closed	
j. The validation team is different from the marketing team. Hence the concern does not arise. Closed.	
k. The assessment team has confirmed that the project is not a debundled component of any other small scale or rejected project.	
l. All the documents related to the project activity have been checked by the DOE. The credibility of the same was checked during the site visit also. Closed.	
m. The project activity is a new project using new equipments. The same has been crosschecked with the documents provided by the PP and during the site visit. Closed.	
Acceptance and Close out by Lead Assessor: Closed	Date: 29/11/2011

Date:	22/08/2011	Raised by:	Karthikeyan, carthik2010@gmail.com		
Type:	CAR	Number:	09	Reference:	ISH Comments
Lead Assessor Comment:					
<p>1. There is no information in the PDD how the project is fulfilling the conditions of Annex 13, EB 62.</p> <p>2. Both the projects seem to be Enercon's sister concerns. DOE should check the Balance Sheets of both Enercon India the supplier and the two PPs and see how the payment has been accounted. If the cost is shown as sundry debtors or unsecured loans in PPs books (and a mirror entry in Enercon's Balance Sheet), it only means that the payment has not been made. The company can also convert the payment into deferred payment without any bank guarantee or drawing bills. It is another form of unsecured loan. Such arrangement only means that the company is converting its stocks into projects to claim CDM benefits. Can the projects claim CDM benefits without taking investment risk? These projects should be rejected if there is no bank proof of payment is furnished.</p> <p>3. However, since the PDD mentions bank loan of 70%, the DOE should ask for the sanction letter and loan application letter and see whether the loan has actually been sanctioned.</p> <p>4. How the PDD shows this as a single project? There are two PPs. It should be a bundled project. Number of WECs owned by CEPCO Industries and Enercon (India) Power Development is not disclosed anywhere. The PDD is not transparent. How can such a PDD allowed to be web hosted by DOE?</p> <p>5. When MPERC has recommended PLF of 22.5%, on what basis the projects have taken 19.5% PLF. In a recently registered project using Enercon WECs (project No.3350), PLF is given as 22.5%! Does it mean that the efficiency of Enercon WECs have come down or it is being done to make the projects additional? DOE should not accept any PLF less than 22.5%. Third party PLF estimation are the most non-credible document and it is possible to get third party estimation for even 10% PLF.</p> <p>6. None of the manufacturer's charge more than 5% escalation. In the case of project 3350, Enercon itself has charged only 5% escalation. Does it mean that Enercon will charge lower escalation rate to outsider and higher escalation rate to its own companies! How strange!</p>					

7. How can Enercon give an offer its own companies? DOE should ignore these offers and get the appraisal note from the banks and check the cost and all input parameters and should adopt the same input parameters.
8. For book depreciation the PDD gives reference of Income Tax Act for restricting the depreciation to 90% of value. Does the consultant know the difference between book depreciation and IT depreciation? Moreover, which section of IT Act restricts the depreciation to 90%?
9. Strangely, the consultant gives IT depreciation as 15%. Does the consultant know what IT Act is? It is 100% for this project – 80% accelerated depreciation plus 20% initial depreciation. If the project is not claiming accelerated depreciation, then also it is eligible for 35% depreciation and in that case it can claim Generation Based Incentive given by the Govt. at 50 paise per Kwh. The tariff will go up to Rs.4.85/kWh. Consultant wants to avoid accounting this. Further what about REC income? Why it is not accounted?
10. Why does the company want working capital? What is the capital blocked to generate power? Even O&M cost is to its own parent company. This is absolutely unsustainable and DOE should not allow this.
11. When MPERC has recommended a return of only 16% on equity on what basis the PP is expecting 18.61%? Consultant has not given the estimation of return on equity. This is not transparent and DOE should not have allowed the PP to webhost this project. Moreover, this return is very high compared to default return prescribed by EB. DOE should not allow this return
12. How is equity IRR considered correct for this project? It is financed 70% by loan. On what basis consultant claims that equity IRR is appropriate for this project activity. This financial indicator is not in line with Additionality Tool. DOE should insist on project IRR and should not accept equity IRR>
13. The project's start date is 28/10/2010. Therefore, it should have started operation before March 2011. Hence, the investment (if at all made by the PPs) will be in the same year as the start of operation. DOE should deduct the investment from the cash generation of the first year in computing IRR. Consultant will not do it because it will increase the IRR and make the project viable without CDM.
14. For the given input parameters, the IRR should be more than 11% if tax saving is taken into account and PLF is taken at not less than 22.5%. The IRR of 7.36% indicates that PP has not taken into account the tax saving or has taken PLF at low level. PLF should not be less than 22.5%.
15. This project is not additional

Project Participant Response:	Date: 05/10/2011

1. To abide by the "Guidelines on the demonstration and assessment of prior consideration of the cdm" (EB-62, Annex-13), the project participant notified the host country DNA and UNFCCC secretariat in writing about the commencement of project activity and their intention to seek CDM status. This notification was made on 29th March 2011 to UNFCCC and Indian DNA whereas the project start date is 28th October 2010, thus the notification was made within six months of the project activity start date. The acknowledgement from UNFCCC for the same was received on 2nd May 2011, the copy of which has been provided to DOE.
2. Cepco Industries Pvt. Ltd. (Cepco) and Enercon (India) Power Development Pvt. Ltd. (EIPDPL) are two separate legal entities. Therefore the issues raised by the stakeholder in context of accounting are not applicable.
Cepco has authorized EIPDPL to carry out the CDM activities for this project on its behalf and has also authorised EIPDPL to be one of the project participants for the project activity. The above authorization letters have been provided to DOE for verification.
3. The debt for the project activity was considered as INR 585.14 which is 70% of the project cost provided by the supplier in its offer letter dated 14 September 2010. The debt equity ratio approved by the state regulatory commission is 70:30 (source: MPERC order - May, 2010). Same was considered in the DPR and at the time of decision making by PP.
Further it may be noted that the loan application letter was made by the PP on 22 February 2010 which is after decision making date. The loan application dated 22 February 2011 requested loan amount of INR 648 million (equivalent to 18 WTGs) which is more than envisaged debt of INR 585.14 million. Therefore we have conducted sensitivity at the debt value of INR 648 million. The equity IRR at debt amount of INR 648 million works out to be 10.20% which is less than the benchmark. The loan application letter has been provided to DOE for verification.
4. Project is owned by Cepco. This can be verified from purchase order dated 28 October 2010. The above authorization letters have been provided to DOE. Cepco has authorized EIPDPL to carry out the CDM activities for this project on its behalf and has also authorised EIPDPL to be one of the project participants for the project activity. The above authorization letters have been provided to DOE for verification.
5. As per the "Guidelines for the reporting and validation of Plant load factors" (EB 48, Annex 11), The plant load factor shall be defined ex-ante in the CDM-PDD according to one of the following three options:
 - (a) The plant load factor provided to banks and/or equity financiers while applying the project activity for project financing, or to the government while applying the project activity for implementation approval;
 - (b) The plant load factor determined by a third party contracted by the project participants (e.g. an engineering company);
 PLF for any project is dependent on the site and therefore site specific assessment is credible source to estimate the PLF for the project activity. The project under consideration takes the effective PLF value of 19.5 % from technology supplier's offer (Enercon's offer dated 14th September 2010). The PLF estimated by third party is 19.50% (without losses). Therefore conservatively PLF estimated by technology supplier is considered for demonstrating additionality

6. The escalation rate on O&M costs has been taken from Supplier's offer dated 14th September 2010. The same has been provided to DOE for verification. The sensitivity on O&M escalation is conducted from 4% to 8%.
7. Cepco Industries Pvt. Ltd. (Cepco) and Enercon (India) Limited are separate legal entities. The offer letter is provided by Enercon to Cepco for supply of 18 WTGs. This can be crosschecked from offer letter dated 14 September 2010 and loan application letter dated 22 February 2010.
8. The book depreciation rate is as per MPERC Order May 2010 (source: <http://www.mperc.nic.in/14052010-Wind-tariff-order-May-2010.pdf>). The same has been updated in the PDD and the financial model.
9. Accelerated depreciation at the rate of 100% (80% accelerated depreciation and 20% additional depreciation) will be claimed by PP for the project activity. As per GBI guidelines, GBI is available to the projects in case the project does not claim accelerated depreciation (source: <http://www.mnre.gov.in/gbi-scheme.htm>). The application of accelerated depreciation can be checked by DOE from the investment analysis spreadsheet.
10. Cepco Industries Pvt. Ltd. (Cepco) and Enercon (India) Power Development Pvt. Ltd. (EIPDPL) are two separate entities and Cepco is not Enercon's sister concern. In order to sustain business and finance its day to day operations, Cepco has to block money as working capital. The O&M charges which are part of the working capital are payable each quarter in advance as per Enercon's offer dated 14th September 2010. Therefore, working capital has been considered in the investment analysis to the extent of O&M expense that is payable in advance for each quarter (source: Offer letter dated 14 September 2010) and receivables on the account of billing cycle which is 30 days (source: Power Purchase Agreement dated 4 August 2011).
11. As per Para 40 of the EB 40 meeting report,

"The Board noted that many proposed CDM project activities in the energy sector in India seek to demonstrate additionality by means of investment analysis applying a benchmark of 16%, which is based on tariff orders published in accordance with the Central Electricity Regulation Commission. The Board is concerned with the use of this value as a benchmark for proposed CDM project activities, as this value is used in tariff determination for CDM projects and for non-CDM projects. Therefore the Board is of the view that this value is not a suitable benchmark"

As per investment guidance paragraph 15; cost of equity can be determined by (a) selecting the default values provided in the invest guidance or (b) calculating the cost of equity by using the best available practice. PP has computed cost of equity using option (b). The benchmark using option b works out to be 18.21%.

12. The decision to invest in the project is taken by the equity investors and hence the equity IRR is more relevant in context of decision making to invest in project. The board decisions to invest or not to invest are taken by the equity investors and hence we have used equity IRR as appropriate indicator for investment analysis.
13. XIRR function has been used to compute the IRR value which takes into account the timing of cash-flow within a given financial year. The cash flow represented in the spreadsheet reflects the timing of capital investment, cash inflow and outflow. In order to reflect the IRR of the project activity, it is important to take to account the timing of capital investment cash inflow and outflow which can be captured using XIRR functions.

The expected project commissioning date is 30 June 2011 as per offer letter dated 14 September 2010. Therefore while projecting the cash flows for the project activity, as per investment guidance (version 5.0) paragraph 15, the commissioning date is considered as 30 June 2011. However the actual project commissioning date is 18 August 2011 (first 4 WTGs were commissioned on 01 July 2011, 08 WTGs were commissioned on 23 July 2011 and balance WTGs were commissioned on 18 August 2011). The actual commissioning date for the project activity is after 30 June 2011. Therefore we have considered 30 June 2011 as commissioning date for the project activity as per offer letter while conducting investment analysis which is conservative.

14. The spreadsheet for IRR has been provided to DOE considering the input values as per investment guidance version 5.0. The equity IRR for the project activity works out to be 9.37% which is less than the benchmark.

Documentation Provided by Project Participant:	
<p>Acknowledgement from UNFCCC on prior consideration Authorization letter from Cepco Industries Pvt. Ltd. to Enercon (India) Power Development Pvt. Ltd. to be project participant Bank loan application and Loan sanction letter MPERC order (May 2010) CERC notification dated as 19th January, 2009 The Detail Project Report (DPR) Undertaking from PP that REC benefits will not be for the project under consideration Revised PDD Revised Investment analysis</p>	
Information Verified by Lead Assessor:	
<p>Acknowledgement from UNFCCC on prior consideration Authorization letter from Cepco Industries Pvt. Ltd. to Enercon (India) Power Development Pvt. Ltd. to be project participant Bank loan application and Loan sanction letter MPERC order (May 2010) CERC notification dated as 19th January, 2009 The Detail Project Report (DPR) Undertaking from PP that REC benefits will not be for the project under consideration Revised PDD Revised Investment analysis</p>	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 29/11/2011
<ol style="list-style-type: none"> 1. Addressed in CL 06 above. Closed. 2. Explanation provided by PP is correct and acceptable. Closed. 3. Documents regarding the loan equity ratio have been provided by the PP. The same have been checked and found to be correct. Acceptable and closed. 4. The project is not a bundled project. The same had been verified by the assessment team. Closed. 5. PLF for the project activity has been conservatively chosen and same has been cross checked with the PLF considered in other registered CDM Projects in the same state where the project activity is located. Acceptable and closed. 6. O&M escalation rate has been appropriately taken by the PP and same has been cross checked with the O& M escalation considered in other registered CDM Projects in the same state where the project activity is located. Acceptable and closed. 7. Cepco Industries Pvt. Ltd. (Cepco) and Enercon (India) Limited are separate companies. Hence comment is not valid. 8. Rate of book depreciation appropriately referenced. Closed. 9. Accelerated depreciation has been considered by the PP in investment analysis instead of GBI. Hence acceptable. Closed. 10. Cepco Industries Pvt. Ltd. (Cepco) and Enercon (India) Limited are separate companies. Hence working capital will be required by CEPCO to sustain the business. Hence the comment is not valid. 11. The revised benchmark of 18.21% has been used by the PP for investment analysis. The same has been verified by the assessment team and found to be correct. Closed. 12. PP reasoning acceptable and closed. 13. The investment analysis done the PP has been crosschecked and calculations have been revised wherever required. The analysis is correct and acceptable. Closed 14. IRR for the project activity has been calculated based on the conservative PLF chosen by the PP and taking into account the tax savings. Acceptable and closed. 15. PP has provided the financial calculation and same has been validated by the DOE and concluded that the project is additional. 	
Acceptance and Close out by Lead Assessor: Closed	Date: 29/11/2011

Date:	11/01/2012	Raised by:	Assessment Team
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Type:	CAR	Number:	10	Reference:	AU4
Lead Assessor Comment:					
<div>1. In section A.4.1.4 range of latitude and longitudes is not found consistent with the detail mentioned in Table . Please clarify the same.</div> <div>2. In the section B.5 reference of each parameter is not completely provided. PP is requested clarify the same.</div> <div>3. In the section B.7.1 of the PDD the source of data for the parameter EGy is the breakup sheet signed by DISCOM authorities. However in the section B.7.2 it is mentioned as JMR .PP is requested to clarify this inconsistency.</div>					
Project Participant Response:				Date: 12/01/2012	
<div>1. In Section A.4.1.4 range of latitude and longitudes has been corrected for better clarity.</div> <div>2. Section B.5 has been updated to include the reference of each parameter. However Values mentioned related to CER price has been deleted as the same is not required by any guideline.</div> <div>3. EGy shall be sourced from Breakup sheet and same has been corrected in section B.7.2</div>					
Documentation Provided by Project Participant:					
Revised PDD (Version 4.0, dated as 12/01/2012)					
Information Verified by Lead Assessor:					
Revised PDD version 4.0 dated 12/01/2012 incorporating above comments					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 20/01/2012	
<div>1. In the revised PDD range of the latitude and longitude has been clearly mentioned. Same has been checked by the validation team from the website http://itouchmap.com/latlong.html and found correct . This is found acceptable and hence the CAR#10(1) is closed out.</div> <div>2. In section B.5 PP has clearly provided the reference web links for each parameters which has been verified and found correct . PP has also deleted the values related to the CER income and the same is found correct .Hence the CAR#10(2) is closed out.</div> <div>3. PP has corrected the typo error and clarified that EGy shall be based on the breakup sheet which is now consistent in section B.&.1 and B.7.2 .This is found acceptable and hence the CAR#10(3) is closed out.</div>					
Acceptance and Close out by Lead Assessor:				Date: 20/01/2012	

Date:	20/01/2012		Raised by:	Assessment Team	
Type:	CAR	Number:	11	Reference:	AU4
Lead Assessor Comment:					
<div>1. In the PDD latest version of the “Tool to calculate the emission factor for an electricity system” is not followed. Please clarify.</div> <div>2. As per MPERC tariff order depreciation should be assumed @7% for the first 10 years and balance 20% in next 15 years so that asset is depreciated to the value of 10% of its initial value over its 25 years life span. However in the financial calculation PP has taken residual value as 10% of its initial value after 20 years. PP is requested to clarify this inconsistency in the approach.</div> <div>3. As in the financial calculation income tax depreciation rate on wind generators is mentioned as 100% whereas per income tax act 1961 ,this value is 80%. PP is requested to clarify the basis of this value .</div> <div>4. PP was also asked the basis of the overhead cost considered in the financial calculation . PP was also requested to substantiate the value with proper evidence.</div>					
Project Participant Response:				Date: 21/01/2012	

1. As per para 20 of methodology, for most renewable energy project activities, $PE_y = 0$. The project activity uses wind power to generate electricity hence as per the applied methodology the emissions from the project activity are taken as nil. The application of para 21 of methodology is not applicable for the project activity.
2. Considering the Enercon wind turbine operational life of 20 years, the asset is depreciated upto 90% in life of 20 years. The salvage value of 10% has been considered after the project life of 20 years. Please find the undertaking from Enercon for the same.
3. Income tax depreciation rate has been update in investment analysis as per income tax act 1961; which is 80%.
4. Overhead value considered is the including the salary & wages of the people working on site ,however now the same has been deleted from the financial calculation for the conservative estimation of the IRR

Documentation Provided by Project Participant:

Revised PDD version 05 dated 21/01/2012

Information Verified by Lead Assessor:

Revised PDD as per above comments has been verified.

Reasoning for not Acceptance or Acceptance and Close Out:

Date: 21/01/2012

1. In the revised PD PP has updated the version of the of the "Tool to calculate emission factor for an electricity system" as 2.2.1. and updated the section B.6.1 of the PDD which is found correct and hence the CAR #11(1) is closed out.
2. In response PP clarified that as the operational life time of the wind turbine is 20 years and hence the residual value of 10% of initial cost is considered after 20 years only. The life time of wind turbine has been validated from the technology supplier document and same has been discussed with the sectoral expert and found acceptable .Hence the CAR #11(2) is closed out.
3. Income Tax Depreciation rate has been corrected to the value of 80% which is found consistent with Income Tax India 1961- Section -31 Rule-5 New Appendix -1.Hence this value has been accepted and the CAR#11(3) is closed out.
4. PP has removed the overhead cost from the financial calculation which in turn increases the IRR by 9.37%. This is found conservative and hence the CAR# 11(4) is closed out.

Acceptance and Close out by Lead Assessor:

Date: 21/01/2012

A.4 Annex 4: Team Members Statements of Competency

Name: Nitin Babber

Status

- Lead Assessor	x	- Expert	x
- Assessor	x	- Financial Expert	
- Local Assessor	India	- Technical Reviewer	

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	x
Technical Area(s): TA 1.1 Thermal energy generation from fossil fuels and biomass including thermal electricity from solar	
2. Energy Distribution	
Technical Area(s):	
3. Energy Demand	x
Technical Area(s): TA 3.1 Energy Demand	
4. Manufacturing	x
Technical Area(s): TA4.4 Refinery/Oil and Gas TA4.n Other	
5. Chemical Industry	
Technical Area(s):	
6. Construction	
Technical Area(s):	
7. Transport	
Technical Area(s):	
8. Mining/Mineral Production	
Technical Area(s):	
9. Metal Production	
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	x
Technical Area(s): TA10.2.1 Oil and gas industry, methane recovery and use	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Technical Area(s):	
12. Solvent Use	
Technical Area(s):	
13. Waste Handling and Disposal	
Technical Area(s):	
14. Afforestation and Reforestation	
Technical Area(s):	
15. Agriculture	
Technical Area(s):	
Approved Member of Staff by: Siddharth Yadav	Date: 22/02/2012

Statement of Competence

Name: Ravi Kant
Soni

Status

- Lead Assessor	x	- Expert	x
- Assessor	x	- Financial Expert	
- Local Assessor	India	- Technical Reviewer	x

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	x
Technical Area(s): TA 1.2 Energy generation from renewable energy sources (Wind)	
2. Energy Distribution	
Technical Area(s):	
3. Energy Demand	
Technical Area(s):	
4. Manufacturing	
Technical Area(s):	
5. Chemical Industry	
Technical Area(s):	
6. Construction	
Technical Area(s):	
7. Transport	
Technical Area(s):	
8. Mining/Mineral Production	
Technical Area(s):	
9. Metal Production	
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Technical Area(s):	
12. Solvent Use	
Technical Area(s):	
13. Waste Handling and Disposal	
Technical Area(s):	
14. Afforestation and Reforestation	
Technical Area(s):	
15. Agriculture	
Technical Area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 05/04/2012

Statement of Competence

Name: Anshul Sharma

Status

- Lead Assessor	x	- Expert	
- Assessor	x	- Financial Expert	x
- Local Assessor	India	- Technical Reviewer	

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)

Technical Area(s):

2. Energy Distribution

Technical Area(s):

3. Energy Demand

Technical Area(s):

4. Manufacturing

Technical Area(s):

5. Chemical Industry

Technical Area(s):

6. Construction

Technical Area(s):

7. Transport

Technical Area(s):

8. Mining/Mineral Production

Technical Area(s):

9. Metal Production

Technical Area(s):

10. Fugitive Emissions from Fuels (solid, oil and gas)

Technical Area(s):

11. Fugitive Emissions from Production and

Consumption of Halocarbons and Sulphur Hexafluoride

Technical Area(s):

12. Solvent Use

Technical Area(s):

13. Waste Handling and Disposal

Technical Area(s):

14. Afforestation and Reforestation

Technical Area(s):

15. Agriculture

Technical Area(s):

Approved Member of Staff by:

Siddharth
Yadav

Date:

07/03/2012

Statement of Competence

Name: Ramkrishna Patil

Status

- Lead Assessor	x	- Expert	x
- Assessor	x	- Financial Expert	
- Local Assessor	India	- Technical Reviewer	x

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	x
Technical Area(s): TA 1.2 Energy generation from renewable energy sources	
2. Energy Distribution	x
Technical Area(s): TA 2.1 Electricity distribution TA 2.2 Heat distribution	
3. Energy Demand	x
Technical Area(s): TA 3.1 Energy Demand	
4. Manufacturing	
Technical Area(s):	
5. Chemical Industry	
Technical Area(s):	
6. Construction	
Technical Area(s):	
7. Transport	
Technical Area(s):	
8. Mining/Mineral Production	
Technical Area(s):	
9. Metal Production	
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Technical Area(s):	
12. Solvent Use	
Technical Area(s):	
13. Waste Handling and Disposal	
Technical Area(s):	
14. Afforestation and Reforestation	
Technical Area(s):	
15. Agriculture	
Technical Area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 02/07/2012