

# VALIDATION REPORT

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**Mytrah Energy (India) Limited  
(MEIL)**

**Wind Power Project in Gujarat**

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**SGS Climate Change Programme**  
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<b>Date of Issue:</b>		<b>Project Number:</b>	
13-12-2012		CDM.VAL3548	
<b>Project Title:</b>			
Wind Power Project in Gujarat			
<b>Organisation:</b>		<b>Client:</b>	
SGS United Kingdom Limited		Mytrah Energy (India) Limited (MEIL)	
<b>Publication of PDD for Stakeholders Consultation</b>			
<b>Commenting Period:</b>		24/02/2012 to 24/03/2012	
First PDD Version and Date:		01, dated 17/01/2012	
Final PDD Version and Date:		07, dated 13/12/2012	
<b>Summary:</b>			
<p>Mytrah Energy (India) Limited (MEIL) has commissioned SGS to perform the validation of the project: "Wind Power Project in Gujarat"</p> <p>Methodology Used: ACM0002: Consolidated baseline methodology for grid-connected electricity generation from renewable sources ---</p> <p>Version and Date: Version 12.3.0 (EB 66, Annex 35, dated 02/03/2012, Valid from 17/09/2010 to 10/05/2012 and request for registration can be submitted until 11/01/2013)</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 1.2), Kyoto Protocol requirements and 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 approved methodology and underlying formulae and calculations.</p> <p>The report and the annexed validation describes a total of 15 findings which include:</p> <ul style="list-style-type: none"> <li>• 13 Corrective Action Requests (CARs);</li> <li>• 02 Clarification Requests (CLs);</li> <li>• 00 Forward Action Requests (FARs);</li> </ul> <p>All findings have been closed satisfactorily of the main report and the project will be recommended to the CDM Executive Board for registration.</p>			
<b>Subject:</b>		<b>Document Distribution</b>	
CDM Validation			
<b>Validation Team:</b>		<input checked="" type="checkbox"/> No Distribution (without permission from the Client or responsible organisational unit)	
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## Abbreviations

ABT	Availability Based Tariff
BM	Built Margin
BSE	Bombay Stock Exchange
CAPM	Capital Asset Pricing Model
CO <sub>2</sub>	Carbon Di-Oxide
CO	Carbon Monoxide
CEA	Central Electricity Authority
CER	Certified emission reduction
CL	Clarification request
CDM	Clean development mechanism
CM	Combined Margin
COP/MOP	Conference of Parties/Meeting of Parties
CAR	Corrective action request
DNA	Designated national authority
DOE	Designated operational entity
DR	Document Review
EAI	Energy Alternatives India
EF	Emission Factor
ER	Emission Reduction
EPC	Engineering, Procurement and Construction
EIA	Environmental Impact Assessment
EB	Executive Board
FAR	Forward action request
GEDA	Gujarat Energy Development Agency
GEF	Grid Emission Factor
GETCO	Gujarat Energy Transmission Company Limited
GERC	Gujarat Electricity Regulatory commission
GHG	Greenhouse Gas(es)
GUVNL	Gujarat Urja Vikas Nigam Limited
HCA	Host Country Approval
I	Interview
IREDA	The Indian Renewable Energy Development Agency
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
ISHC	International Stakeholder Consultation
kWh	Kilo Watt-hour
LoA	Letter of Approval
MAT	Minimum Alternate Tax
MSW	Municipal Solid Waste
MW	Mega Watt
MWh	Mega Watt-hour
MEIL	Mytrah Energy (India) Limited
MoEF	Ministry of Environment and Forest
MNES	Ministry of Non-Conventional Energy Sources
MoM	Minutes of Meeting
MP	Monitoring Plan
NEWNE	North East West Northern East grid of India. Western region grid is part of the NEWNE grid
NCDMA	National CDM Authority
ODA	Official Development Assistance
O&M	Operation and Maintenance
PLF	Plant Load Factor

PPA	Power Purchase Agreement
PDD	Project Design Document
PP	Project Participant
PO	Purchase Order
QA/QC	Quality Assurance/Quality Control
RBI	Reserve Bank of India
ROE	Return On Equity
SEL	Suzlon Energy Limited
SLDC	State Load Dispatch Centre
SPM	Suspended Particulate Matter
SV	Site Visit
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual
WACC	Weighted Average Cost of Capital
WTG/WE	Wind Turbine Generator/ Wind Energy Converter

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## 1. Validation Opinion

SGS United Kingdom Ltd has been contracted by M/s Mytrah Energy (India) Limited (MEIL) to perform a validation of the project: "Wind Power Project in Gujarat" in India.

The Validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism 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 project activity involves in total of 12 WTGs (2100 KW each) by M/s Mytrah Energy (India) Limited (MEIL), in Rajkot and Surendranagar district, Gujarat, India, with a total installed capacity of 25.20 MW. The project activity supplies the electricity to the NEWNE electricity grid of India, which is mainly contains the fossil fuel based generation.

Thus, by generation of the clean renewable energy through wind turbine generators, 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 ACM0002 version 12.3.0. 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 482,730 t of CO<sub>2</sub>e over a 10 year crediting period, averaging 48,273 t of CO<sub>2</sub>e 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: 17/12/2012

## 2. Introduction

### 2.1 Objective

M/s Mytrah Energy (India) Limited (MEIL) has commissioned SGS to perform the validation of the project "Wind Power Project in Gujarat" with regards 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 the Kyoto Protocol requirements, the 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 proposed CDM project activity is developed by M/s Mytrah Energy (India) Limited (MEIL) in Rajkot District and Surendranagar District of Gujarat State. The project activity involves installation of the 12 number of grid connected wind turbine generators (WTGs) having capacity of 2.1 MW each<sup>/10/14/15/</sup>. The cumulative capacity of the total installed WTGs is 25.20 MW. The entire project activity WTGs are belong to S88 model provided by Suzlon Energy Limited (SEL). The project will result in replacing the equivalent amount of electricity from the NEWNE grid which is dominated by fossil fuel based grid connected power plants.

The proposed project activity involves the installation of the WTGs in the wind farm developed in Rajkot District and Surendranagar District of Gujarat State<sup>/10/</sup>. Thus, at the project site (wind farm), there are number of WTGs owned by other customers connected to the same substation. Hence, in order to calculate the net electricity supplied to the grid by each WTGs, there is an apportioning procedure which is approved by the state nodal agency for apportioning the electricity to each and every customer i.e. GETCO<sup>28/</sup>. This apportioning becomes the basis for subsequent invoicing and ultimately Certified Emission Reduction (CER) calculation.

The project activity is already implemented as physically verified during the on-site assessment and further confirmed from the commissioning certificates<sup>10/</sup> of the project activity. During the site visit of the project activity, it is confirmed that project activity is not a de-bundled component of large scale project activity.

The electricity thus generated is exported to the NEWNE grid (Integrated Northern, Eastern, Western and North Eastern grid). Thus, the project aims at reducing GHG emissions by replacing the same amount of electricity from the NEWNE grid which would otherwise be generated by a fossil fuel based power plant connected to the grid. The corroboration that the electricity will only be exported and not used for captive consumption is available through PPAs<sup>/15/</sup>.

The total emission reductions from the project are estimated to be **482,730** t of CO<sub>2</sub>e over a 10 years crediting period during 2012 to 2021, averaging **48,273** t of CO<sub>2</sub>e annually.

#### 2.4 *The Names and Roles of the Validation Team Members*

<b>Assessment Team</b>	<b>Role</b>
Vishnu Patidar	Lead Assessor, Local Assessor and Expert (Scope TA1.2 - Wind)
Anshul Sharma	Financial Expert

<b>Technical Review</b>	<b>Role</b>
Nayan Jyoti Deka	Technical Reviewer
Nayan Jyoti Deka	Sectoral Expert (Scope TA1.2 - Wind)

### 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 Design Document version 01 dated 17/01/2012 and the subsequent versions i.e. PDD version 02 dated 25/04/2012, PDD version 03 dated 12/07/2012, PDD version 04 dated 30/08/2012, PDD version 05 dated 20/10/2012, PDD version 06 dated 28/11/2012 and PDD version 07 dated 13/12/2012 (final version). The assessment is performed by trained assessors using a validation protocol attached as Annex 2, table 2.

The site visit was performed on 12/04/2012 to 13/04/2012. The results are summarised as Annex 1 in the validation report. Further, the validation team has checked the statements mentioned in the PDD, version 07 dated 13/12/2012 through review of documents and contacts with stakeholders.

#### 3.2 Use of the Validation Protocol

The validation protocol used for the assessment is designed in accordance with the Validation and Verification Manual, Version 01.2 dated 30 July 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	Draft and/or Final Conclusion
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 A.1 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 a 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 the project activity is India and India, a signatory of the Kyoto Protocol is a non-annex 1 country. India has ratified the Kyoto protocol on 26/08/2002. The PP has submitted the letter of approval<sup>6/</sup> to the validation team issued by the Indian DNA (National CDM Authority), 'The Ministry of Environment & Forests' bearing No 4/10/2012-CCC dated 10/09/2012<sup>6/</sup>. The same has been checked in line paragraphs 45, 46 and 47 of Validation and Verification Manual, version 1.2 by the validation team. The name of the project activity & the Project Participant in the HCA was verified against that in section A.1 and section A.3 of the final PDD<sup>1.7/</sup> and was found to be consistent. The validation team confirms that the letter of approval has been issued by Indian DNA is authentic and valid for the proposed CDM project activity under validation (VVM version 1.2 paragraph 47)<sup>7/</sup>.

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 Power Project in Gujarat” – mentioned in the PDD being submitted for registration

The Letter of Approval is unconditional with respect to (a) to (d) mentioned above. Thus the Letter of Approval is in accordance with paragraphs 45-49 of the Validation and Verification Manual (VVM) version 1.2. The Host Party DNA website mentions the list of projects approved from the Indian DNA i.e. Ministry of Environment and Forests. As information regarding submitted host country approval letter is not yet publically available on the host Party DNA website, the authenticity of the Host Country Approval submitted for the project activity is confirmed through email to National CDM Authority, Ministry of Environment & Forest, Government of India of the Indian DNA dated 21/09/2012<sup>43/</sup> in line with paragraph 46 of VVM version 1.2. Hence it is concluded that the Host Country Approval received for the project activity is appropriate and authentic. As the letter of approval doesn't mention the PDD version number or the validation report version number, paragraph 50 of VVM version 1.2 is not applicable.

### Discussion of CARs/CLs

**CAR 01** was raised to the PP to submit the Host Country Approval received for the project activity and justify how proposed CDM project activity qualifies the participation requirement of CDM project activities as per paragraph 44-50 of VVM/version 1.2. In response, the PP has submitted the Host Country approval (Ref. 4/10/2012-CCC) dated 10/09/2012 and the letter of approval transparently confirms the participation requirement of CDM project activity in line with paragraph 45 of VVM version 1.2; thus it is accepted and **CAR 01 is closed.**

### Opinion

The validation 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 (EB 55 Annex 1).

### 4.2 Participation Requirements

The host Party for this project is India. India has ratified the Kyoto protocol on 26<sup>th</sup> August 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 is M/s Mytrah Energy (India) Limited (MEIL). The HCA<sup>6/</sup> from the Indian DNA approves the participation of the Project Participant as mentioned above; 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 final PDD<sup>1.7/</sup>. The validation team also confirms that no entities other than those approved as the Project Participants are

included in section A.3 and annex 1 of the final PDD<sup>1.7/</sup>. This is found in line with paragraph 52 of VVM version 1.2.

No Annex I Party has been identified in the final PDD<sup>1.7/</sup> and therefore no further Letter of Approval was available. It is observed that the CDM EB has agreed that the registration of a CDM project activity can take place without an Annex I Party being involved at the stage of registration although it should be noted that before CER can be transferred to an Annex 1 Party, a Letter of Approval from Annex 1 Party needed to be submitted.

The web-hosted PDD<sup>1.1/</sup> mentions the name of the Project Participant as M/s Mytrah Energy (India) Limited (MEIL). Also it is confirmed that the validating DOE has contractual relationship with the same Project Participant i.e. M/s Mytrah Energy (India) Limited (MEIL). This fulfils the requirement of paragraphs 7 and 8 of Annex 48 of EB 50. Also contact details provided in the Modalities of Communication dated 11/10/2012<sup>5/</sup> is found to be consistent with the same provided in Annex 1 of the final PDD<sup>1.7/</sup>. This is found to be appropriate and it is accepted.

In accordance with paragraph 40 (b) of the CDM Modalities and Procedures, the final PDD<sup>1.7/</sup> of the proposed CDM project activity was made publicly available for the stakeholder consultation process on the UNFCCC site at:

<http://cdm.unfccc.int/Projects/Validation/DB/51ZY4MG9TEBV9RBFH5JNQT13XTIWL/view.html> for the global stakeholders' process to invite comment as per the CDM requirements. As per the CDM EB guidelines (Paragraph 93 of EB25) the proposed CDM project has been web hosted from 24/02/2012 – 24/03/2012 and comments were invited on the validation requirements. The comments received during ISHC are discussed under section 05 of this report.

The PDD has been correctly applied and completed in accordance with the CDM-PDD form version 03, which is the latest available version. The tables, headings, logo, format and fonts are in accordance with that used in the template. Thus, the PDD is in accordance with the applicable CDM requirements for completing PDDs i.e. EB 41 Annex 12.

The PPs have submitted the MoC<sup>5/</sup> letter, which was verified against the project title and information mentioned in Annex 1 and found to be consistent and hence accepted.

### Discussion of CARs/CLs

**CAR 02** was raised to submit the complete “F-CDM-MOC - Modalities of Communication statement” for the project activity in the format prescribed as per CDM EB. In response to the same, the PP has submitted MoC-(Modalities of Communication statement) dated 11/10/2012 and it is found that the PP has used the latest template “Ver1.4 F-CDM-MOC” applicable in the VVM track. The validation team has checked and confirmed that MoC has been completed as per the latest Procedures for MoC between the Project Participants and the Executive Board (EB45 Annex59). Hence, **CAR 02 is closed**.

**CL 03** was raised to clarify the inconsistency in the name of the project developer as various documents i.e. the PPA, the Purchase agreements for WEGs, O & M Contracts etc. show the name of project developer as Caparo Energy (India) Limited while section A.3 of the PDD/version 01 states Mytrah Energy (India) Limited (MEIL) as the Project Participant. In response the PP has clarified that name change took place on 27/09/2011 after the commissioning of the project activity. The PP has also submitted the “fresh certificate of Incorporation” for the change in the name the company which was issued by Registrar of Companies, Andhra Pradesh (Ministry of Corporate Affairs, Government of India). Based on the same fact, the **CL#03 is closed**.

**CAR 14 (#1)** was raised as it was identified that the telephone no & FAX no. as mentioned in Annex-1 of the PDD were not matching with the information on the same in the MOC dated 11/10/2012. In response to same, the PP has submitted the revised PDD, the telephone no & FAX no. as mentioned in Annex-1 of the revised PDD are updated and now exactly matching with the information on the same in the MOC dated 11/10/2012. Hence, **CAR 14 (#1) is closed**.

### Opinion

As per paragraphs 51 to 54 of the VVM version 01.2 (EB 55 Annex 1), the validation 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 project activity involves installation of 12 WTGs (12 x 2.1 MW) aggregating total installed capacity of 25.20 MW. The wind power project will reduce the GHG emissions generated by the current generation energy mix in India's Power Grid, which is dominated by fossil fuel based grid connected power plants. The technical specifications<sup>14//23/24/</sup> of the project activity have been checked during the site visit and it is found to be consistent with the purchase orders<sup>14/</sup> raised for the project activity.

The project activity is located at Rajkot and Surendranagar district in the state of Gujarat in India<sup>10/</sup>. The location of the project activity<sup>21//24/</sup> mentioned in the PDD is checked during the site visit and it is found correct.

The physical site inspection<sup>21//24/</sup> was conducted and it is confirmed that the project description in the section A of the PDD is found to be correct, complete and transparent and it is discussed below;

- The purpose of the project activity is to generate power through Wind Turbine Generators as green technology and reduce GHG emissions. In absence of the project activity, equivalent quantity of power would have been generated in fossil fuel dominated grid connected power plants resulting into GHG emissions.
- The project activity is an installation of 12 WTGs owned by M/s Mytrah Energy (India) Limited (MEIL)<sup>10/14/15/</sup>. The project activity has been commissioned<sup>10/</sup> and running satisfactorily. The ownership of the project is with M/s Mytrah Energy (India) Limited (MEIL), which is also a Project Participant in the project. The ownership has been confirmed by means of purchase orders<sup>14/</sup> and commissioning certificates<sup>10/</sup> by GEDA. The Assessment team recognizes that proposed project of M/s Mytrah Energy (India) Limited (MEIL) is helping host country to fulfil its goals of promoting sustainable development.
- The implementation status of the proposed project activity is as follows<sup>10/</sup>:

Sr . N o	Locatio n No.	Village	District	Latitude	Longitude	Model/ Capacity (MW)	Commission ing date
1	JSD 038	Bhadla	Rajkot	22° 11' 41.9"	71° 05' 44.4"	S88 / 2.1 MW	01/10/2011
2	JSD 041	Dahisara	Rajkot	22° 11' 41.4"	71° 08' 7.5"	S88 / 2.1 MW	28/09/2011
3	JSD 042	Dahisara	Rajkot	22° 11' 31.3"	71° 08' 28.3"	S88 / 2.1 MW	28/09/2011
4	MAH013	Bhojpari	Surendra nagar	22° 17' 48.5"	71° 10' 15.8"	S88 / 2.1 MW	06/08/2011
5	MAH014	Bhojpari,	Surendra nagar	22° 17' 1.3"	71° 10' 19.1"	S88 / 2.1 MW	06/08/2011
6	MAH015	Bhojpari	Surendra nagar	22° 16' 46.2"	71° 10' 21.3"	S88 / 2.1 MW	06/08/2011
7	MAH016	Chobari	Surendra nagar	22° 15' 39.8"	71° 11' 42.3"	S88 / 2.1 MW	12/08/2011
8	MAH018	Chobari	Surendra nagar	22° 15' 29.2"	71° 11' 27.5"	S88 / 2.1 MW	10/08/2011
9	MAH021	Tajpur	Surendra nagar	22° 14' 53.6"	71° 10' 39.8"	S88 / 2.1 MW	31/08/2011
10	MAH022	Sakhpar	Surendra nagar	22° 14' 56.6"	71° 11' 13"	S88 / 2.1 MW	31/08/2011
11	MAH041	Bhojpari,	Surendra nagar	22° 17' 27.5"	71° 10' 9.9"	S88 / 2.1 MW	06/08/2011
12	MDW 021	Karban	Surendra nagar	22° 17' 48.0"	71° 08' 24.1"	S88 / 2.1 MW	06/08/2011

Appropriateness of geo-coordinates of the project activity mentioned above is checked and confirmed from letters from technology supplier i.e. Suzlon Energy Limited<sup>/21/</sup> and commissioning certificate issued for each of the WTGs by Gujarat Energy Development Agency (GEDA)<sup>/10/</sup>.

- The title of the project activity is “Wind Power Project in Gujarat”, which clearly convey the objective of the project activity.
- The technology used in the proposed project activity;
  - Wind Turbine Generator Models S – 88 (2.1 MW) Suzlon-make WTGs.
 Technical specification of the S – 88 model WTGs (2.1 MW) as verified during on-site assessment are tabulated below<sup>/23/</sup>:

Turbine Type	Horizontal axis wind turbine
Rated Power	2100 kW
Rated Voltage	690 V
Rotor Diameter	88 m
Hub Height	80 m
Estimated design life	20 Years
No. of Rotor Blades	3

- The project activity will result in annual average emission reduction of 48,273 t CO<sub>2</sub> equivalents.
- Fixed Crediting Period of ten years has been chosen by the project participant for the project activity.

At the project site (wind farm), there are number of WTGs owned by other project developer connected to the same feeders at the substation. Thus, this proposed CDM project activity shares common metering arrangement with WTGs of other project developers at the connected substation (NEWNE grid interface) through same feeder line and the monitoring of the net electricity supplied to grid at substation is under sole jurisdiction of the GETCO. Hence, in order to calculate the net electricity supplied to the grid by each WTGs, there is an apportioning procedure in practice by GETCO (a regulatory body)<sup>/28/</sup>.

It is found that the project description provided in section A.2 in the final PDD<sup>/1.7/</sup> gives clear understanding of the nature of the project activity and its technical aspects as it sufficiently covers all relevant elements of the project activity. Also description of the project activity is found to be accurate and complete. It is found to be consistent with the observations made during the site visit. This is found in line with paragraphs 58 and 59 of VVM version 1.2.

The final PDD<sup>/1.7/</sup> has been found to be prepared in latest available PDD template version 03 and it is found in accordance with the “Guidelines for completing the Project Design Document (CDM-PDD) and the proposed new baseline and monitoring methodologies (CDM-NM)” version 07; thus it is acceptable. This is checked and it is found to be appropriate as per paragraph 55 and 56 of VVM (version 1.2).

The technical lifetime of the project activity is mentioned as 20 years in section C.1.2 of the PDD. This is found to be in line with WTG specifications<sup>/14/15/23/</sup> provided for the project activity. This is found to be appropriate and it is accepted.

The project activity neither received any public funding from Annex 1 parties nor diverted ODA for project finance as mentioned in section A.4.5 of the final PDD<sup>/1.7/</sup>. This has been confirmed from the letter of undertaking by M/s Myrah Energy (India) Limited (MEIL) dated 26/12/2011<sup>/40/</sup> which clearly certifies that no ODA is involved in this project financing. This is found to be appropriate and it is accepted. Further, the board approval for the project activity is also checked and it does not mentioned about any ODA or annex-I country funding. The information regarding the source of funding is validated based on the loan sanction letter which confirms that the proposed project activity is funded partly through equity share and debt component as well. No ODA involvement has been consistently mentioned in the section A.4.5 and Annex 2 of the PDD and thus, accepted by the assessment team.

The project activity entitled “Wind Power Project in Gujarat” is a unique title of the project activity. This has been checked and verified from the UNFCCC <http://cdm.unfccc.int/Projects/Validation/index.html>. The PDD

is providing the information on purpose of project activity, type of technology used and contribution of project activity to the sustainable development which has been found to be acceptable.

The operation and maintenance is being carried out by Suzlon Energy Limited and has proper procedures for providing training to its employees. Since Suzlon Energy Limited being ISO 9001:2008 certified organization; the ISO certificates<sup>16/</sup> is checked for appropriateness and it is acceptable.

Main changes and reason for revision between the final PDD (Version 07) against the PDD version 01 published for the international stakeholder consultation	
PDD Section no.	Description and reason for changing the information in that section
Section A.2	Description have been added stating that there are other WTGs owned by several other customers connected to the same substation and accordingly there is an apportioning procedure is involved which is approved by the state nodal agency for apportioning the electricity to each and every customer
Section A.4.1.4	The location no. of each WTGs is corrected and GPS coordinates for the same is provided
Section A.3	Statement stating that there is no technology transfer involved in the proposed project from Annex 1 countries is included and also the proposed project activity is environmentally safe and sound as there are no emissions associated with the Wind power generation.

#### Discussion of CARs/CLs:

**CAR 05 (#01)** was raised to correct the GPS coordinates for the each location of WEGs installed. In response, the PP has submitted the revised PDD and in section A.4.1.4 of the revised PDD, it is found that GPS coordinates of the location of each WEG is correctly mentioned along with specific identification no. (Location No.) for each WEG. Validation team has verified the WEG location no. during on-site assessment and also checked the GPS coordinates of the location of each WEG from the site specific document issued by Suzlon Energy Limited (The O&M operator). Based on this **CAR 05 (#01) is closed.**

**CAR 05 (#02)** was raised as section A.4.3 of the PDD version 01 was not filled appropriately in line with the CDM-PDD guideline, version 07. In response, the PP has submitted the revised PDD in which section A.4.3 describes that the used technology is environmentally safe and there are no emissions associated with the project activity. Also, section A.4.3 of the revised PDD is clearly states that the proposed project activity does not involved any technology transfer and the deployed technology is sourced from local technology suppliers. Based on this **CAR 05 (#02) is closed.**

**CAR 05 (#03)** was raised to include the reference of the applied methodology ACM0002 version 12.2.0 in section B.1 & B.3 of the PDD as per CDM-PDD guideline, version 07. In response, as the version of the applied methodology is revised to ACM0002 version 12.3.0 and the whole PDD is updated to include the same and the reference of the applied methodology ACM0002 version 12.3.0 in section B.1 & B.3 of the revised PDD is included as per CDM-PDD guideline, version 07. Based on this **CAR 05 (#03) is closed.**

**CAR 05 (#04)** was raised to correct the format of table provided in section B.6.4 of the webhosted PDD/version 01 as per the CDM-PDD guideline, version 07. In the revised PDD submitted by the PP, Table format is corrected and found exactly in line with CDM-PDD guideline, version 07 (EB 41/Annex 12). Hence, **CAR 05 (#04) is closed.**

**CAR 05 (#05)** was raised to correct the notations i.e.  $EG_{\text{facility},y}$  as per applied methodology. In the revised PDD submitted by the PP, The notations are found consistent with the applied methodology ACM0002 version 12.3.0. Since, the proposed project activity is the installation of a new grid-connected renewable power plant. The  $EG_{P,y}$  becomes equal to  $EG_{\text{facility},y}$ , which is found correct. Hence, **CAR 05 (#05) is closed.**

**CAR 05 (#06)** was raised to refer the latest available notification of Ministry of Environment and Forests with regard to requirement of EIA in section D.1 of the PDD. In response the PP has submitted the revised PDD which transparently mentions the latest amendment S.O. 695(E), dated 4/04/2011 given by the Ministry of Environment and Forests (Government of India) EIA. As per the Schedule of the EIA notification (EIA notification, S.O. 1533 dated 14th September, 2006) and amendment S.O. 695(E), dated 4/04/2011 given by the Ministry of Environment and Forests (Government of India) EIA is not a regulatory requirement in India for wind energy projects. Thus the project activity doesn't require EIA. The project activity does not involve any negative environmental impacts, as the Wind Turbine Generators are installed for generation of power using wind which is a clean source of energy. Hence, **CAR 05 (#06) is closed.**

**CAR 05 (#07)** was raised to correct the Web-link provided for the source of data for  $EF_{grid\ CDM,y}$  in section B.6.2 as the same was not executable in the PDD version 01. In the revised PDD, the provided Web-link for the source of data for  $EF_{grid\ CDM,y}$  in section B.6.2 is corrected. Validation team has checked the calculation approach of simple OM and BM based on CEA data base version 07 and found correct and in compliance with EB 63/Annex 19. Hence, **CAR 05 (#07) is closed.**

**CAR 05 (#08)** was raised to substantiate the expected operational lifetime of the project activity. In response the PP has submitted the technical specification of S-88 model WTG provided by Suzlon Energy Limited (manufacturer of WTGs) and same is checked which clearly mentions the lifetime of the project as 20 years, which is reasonable for a WTG and same has been cross checked by validation team against GERC tariff order dated 30 January 2010. Hence, **CAR 05 (#08) is closed.**

**CAR 05 (#09)** was raised to justify the media used to invite comments by local stakeholders. In response the PP has submitted the personnel invitation letters sent to village Panchayat sarpanch, contractors, local villagers etc and also submitted the filled questionnaire, attendance records of local stakeholders meeting and minutes of the meeting of the local stakeholder consultation. The validation team believe that the time provided to the local stakeholders for providing comments on the Project Activity is adequate. The same was verified by the validation team during the personal interaction with some of the local stakeholders during the validation site visit. Thus, adequacy of the local stakeholder consultation process is checked and found satisfactory. Hence, **CAR 05 (#09) is closed.**

**CAR 14 (#02)** was raised to correct the line diagram of the project boundary in section B.3 of the PDD as at the project site there are other non-project WTGs connected to the same substation and the same was not shown in the diagram. In response, the PP has submitted the revised PDD, the line diagram of the project boundary is corrected and non-project activity WTGs at the wind farm is also shown in the project boundary and same is found accurate as all WTGs at the wind farm (Proposed CDM project and non-project activity) WTGs are supplying the electricity to the same substation and sharing the common metering system at the substation, which is in-line with the Power purchase agreement. Thus, **CAR 14 (#02) is closed.**

Further, CAR 15 was raised:

**CAR 15 (#01)** was raised to correct the coordinates representing the location of each WTGs in Section A.4.1.4 of PDD. In response, PP has submitted revised corrected PDD. The Section A.4.1.4 of the revised PDD is checked and found that the coordinates representing the location of each WTGs is corrected. Thus, **CAR 15 (#01) is closed.**

**CAR 15 (#02)** was raised to correct the nomenclature of the applied methodology in section A.4.2 of PDD. In response, PP has submitted revised corrected PDD. In section A.4.2 of revised PDD, the nomenclature of the applied methodology is corrected as ACM0002 version 12.3.0. The typographical error is rectified by PP. Hence, finding **CAR 15 (#02) is closed.**

**CAR 15 (#03)** was raised to correct and update the web-links in the PDD. In response, PP has submitted the revised PDD and all the web-links presented in the revised PDD are thoroughly checked and confirmed that all web-links are working properly as accessed on 13/12/2012. Thus, finding **CAR 15 (#03) is closed.**

**CAR 15 (#04)** was raised to correct the formulae for the parameter "share of PP's net electricity supplied to grid" as the same was not appearing in the .pdf format of PDD. In response, PP has submitted revised PDD and it is checked that the formatting error is corrected in section B.7.2 of PDD. The formulae for the parameter "share of PP's net electricity supplied to grid" is now appearing correctly in .pdf format of PDD. Thus, finding **CAR 15 (#04) is closed.**

CAR 15 (#05) was raised to correct the formatting and font in section B.7.2 of PDD in compliance with Para 13 of EB 41 Annex 12. In response, PP has submitted revised PDD version 07 and same is checked and found that the formatting and font used in section B.7.2 of PDD are now consistent with the guidelines for completing the project design document (CDM-PDD), EB 41 Annex 12. Validation team has checked the whole PDD and confirmed that the font size, format is consistent with PDD template. Thus, the finding CAR 15 (#05) is closed.

## Opinion

The PDD satisfies the requirements of paragraphs 55-64 of VVM version 01.2<sup>07/</sup> (EB 55 Annex 1). The PDD used as a basis for validation has been prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website. The PDD contains a clear description of the project activity that provides a clear understanding of the precise nature of the project activity. This description 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.

### 4.4 Applicability of selected methodology to the project activity

The project activity has applied the approved consolidated baseline methodology ACM0002<sup>08/</sup>, version 12.3.0. The applicability of the methodology is justified through following paragraphs of the methodology;

As per the ACM0002, version 12.3.0,

- *This methodology is applicable to grid-connected renewable power generation project activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (Greenfield plant); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).*
- The current project activity is a grid-connected renewable power generation. The Grid connectivity of the project activity is substantiated and confirmed by means of the Power Purchase agreement<sup>15/</sup> and the Commissioning certificates<sup>10/</sup>.
- The project activity is a new power plant at site where no renewable power plant was operated prior to the implementation of the project activity. The Purchase order<sup>14/</sup> for the windmills indicates that the windmills are new and thus it is confirmed that the proposed CDM project activity does not involve retrofit and/or modifications to the existing equipment.
- *The project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit;*
- The project activity is about installation of new wind power plant. This is confirmed through the purchase order<sup>14/</sup> and commissioning certificates<sup>10/</sup>.
- *In the case of capacity additions, retrofits or replacements (except for capacity addition projects for which the electricity generation of the existing power plant(s) or unit(s) is not affected): the existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity addition or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity;*
- The project activity is not about the capacity addition i.e. the purchase orders for the project activity had been checked and all the WTG installed in the project activity by Mytrah Energy (India) Limited (MEIL) are new. No components of any existing facility are involved in the project activity.
- The project activity is about the installation of the Wind based Power Generation; It is not a hydro project. Thus, conditions related to hydro plants are not applicable to the project activity.

As per the ACM0002, version 12.3.0, the methodology is not applicable to the following:

- *Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site;*
  - This is not applicable to the project activity, since it is a green field project activity and does not involve fuel switch.
- *Biomass fired power plants;*
  - The proposed project activity is not a biomass fired plant.
- *A hydro power plant that results in the creation of a new single reservoir or in the increase in an existing single reservoir where the power density of the reservoir is less than 4 W/m<sup>2</sup>.*
  - The proposed project activity is not a hydro power plant.
- *In the case of retrofits, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, i.e. to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance".*
  - The proposed project activity does not involve retrofit, replacement or capacity addition.

Thus, it can be concluded that the applied methodology ACM0002, version 12.3.0 is applicable to the project activity.

Further, the applied methodology refers to latest available versions of the following tools;

- 1) Tool to calculate the emission factor for an electricity system<sup>9.1/</sup>
  - The same has been followed by the PP. The final PDD<sup>1.7/</sup> refers and correctly applies the tool to calculate the emission factor for an electricity system, version 02.2.1, which is the latest available version to use. The locations of windmills are in Rajkot and Surendranagar district of Gujarat state in India. As per CEA data<sup>34/</sup>, Gujarat state comes under NEWNE regional electricity grid in India, the geographic and system boundaries of which are clearly identified and information on the characteristics of the identified baseline grid is available. Thus, the tool is applicable for the application.
- 2) Tool for the demonstration and assessment of additionality<sup>9.5/</sup>
  - The latest version 0.6.0.0 of the tool for the demonstration and assessment of additionality has been used by the PP. This is the latest applicable and available version of the tool.
- 3) Combined tool to identify the baseline scenario and demonstrate additionality
  - The PP has used the tool to demonstration and assessment of additionality in demonstration of additionality and the baseline has been developed in accordance with the applied baseline methodology. This is not used by the Project Participant.
- 4) Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion
  - Since there is no fossil fuel combustion involved in the project site or in the project boundary, this tool is not applicable to the proposed project activity and not used/applied by the Project Participant.

A physical site visit had been undertaken by the assessment and the technical description of the project activity was further assessed with actual situation on site. No other greenhouse gas emissions sources within the proposed CDM project activity boundary are found, which can contribute more than 1% of the overall expected average emission reductions and not addressed in the applied methodology or the PDD.

#### Discussion of CARs/CLs:

**CAR 04** was raised to update the PDD with the latest version of the methodology ACM0002 version 12.3.0. In response, the PP has submitted the revised PDD version 02 and all the applicable sections of the PP have been updated with the ACM0002, version 12.3.0. Hence **CAR 04 is closed**. Further, as the latest applied methodology ACM0002 version 12.3.0 is applicable and request for registration based on the same can be

submitted till 11/01/2013. Hence, further revision in the PDD based on the latest available version of the methodology was not made.

#### **Opinion:**

The validation team therefore confirms the opinion that the project activity meets all the applicability conditions and all other stipulations of the selected approved methodology ACM0002 version 12.3.0 in line with Para 75 and 76 of VVM (version 01.2).

### **4.5 Project Boundary**

The spatial extent of the project boundary is assessed through the description in the final PDD<sup>1.7/</sup> and the grid structure in the India as known from the official data available from the central electricity authority, CEA<sup>34/</sup>.

The project boundary includes all the WTGs involved in the project, transformers, metering system, substation and all the power plant connected physically to NEWNE grid of India.

The consideration by the PP of only CO<sub>2</sub> gas for the baseline emission is conservative and also in line with the methodology. The exclusion of CH<sub>4</sub> & N<sub>2</sub>O in the baseline scenario is appropriate, as there are no associated emissions of the same in a wind power project. The project activity involves the generation of electricity using wind energy. Hence, there are no project emissions associated with this project activity. Hence, the exclusion of CO<sub>2</sub>, CH<sub>4</sub> & N<sub>2</sub>O in the project scenario are appropriate. The electricity imported by the project activity will be accounted for the net electricity exported by the project activity. There are no other sources of project emissions. Hence, the project participant has considered the project emission as zero for the project activity. This is found in line with the methodology<sup>8/</sup> and para 78 f the VVM<sup>7/</sup> (version 1.2).

Further, it is confirmed that the project activity does not involve any transfer of equipment from or to the project activity and thus there is no leakage accountable to the project activity. The project design is sound and the geographical boundaries (NEWNE Regional Electricity Grid in India) of the project are clearly defined. The validation team confirms that the only greenhouse gas relevant to the project activity is CO<sub>2</sub>. This gas is addressed by the applied methodology. Further, it was observed during the site visit and also checked by means of project design assessment that there are no other sources, involved in the project boundary, which may contribute more than 1% of the total GHG reductions and not included in the project boundary

#### **Opinion**

The validation team is of the opinion that the project boundary has been correctly identified in the PDD in line with paragraph 79 of VVM version 01.2<sup>7/</sup> (EB 55 Annex 1).

### **4.6 Baseline Selection and Additionality**

As the project is the installation of a newly built Grid-connected renewable power plant that delivers the generated electricity to the grid (NEWNE grid), hence according to the methodology ACM0002<sup>8/</sup> version 12.3.0, the baseline scenario is determined properly as:

The electricity delivered to the grid by the Project would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system" version 2.2.1<sup>9.1/</sup>.

The validation team assessed the baseline identification using the provisions of the applicable methodology and the "Tool for demonstration and assessment of additionality"<sup>9.5/</sup>. The project participant has provided the steps for identification of the baseline scenario in section B.5 of the PDD. It has been confirmed that these

steps are in line with the provisions described under step 1 of the additionality tool. The validation team confirms that there is no law in India that mandates installation of a renewable energy based power plant.

Having regard to the fact that the bundled project activity under consideration is a wind power project, Validation team is convinced that there are no other realistic and credible alternatives. The chosen baseline scenario (as per applied methodology ACM0002<sup>8/</sup> version 12.3.0) is in compliance with all applicable legal and regulatory requirements as;

- the implementation of project activity is a voluntary initiative and is not mandatory or a legal requirement;
- the Electricity Act 2003 does not restrict or empower any authority to restrict the fuel choice for power generation;
- the applicable environmental regulations do not restrict the use of wind energy; and
- there is no legal requirement on the choice of a particular technology.

Further, validation team has assessed the E + and E- national/sectoral policies to be (or not to be) considered in development of baseline scenario. Following relevant national and sectoral policies coming up in India (the Host country) as found from the web search of Ministry of Power (<http://www.powermin.nic.in/>) and Ministry of New & Renewable Energy (<http://www.mnre.gov.in/>). The validation team has concluded that all the policies & circumstances are E- policies (which gives comparative advantage to less emission intensive technology) and implemented since the adoption by the COP of the CDM M&P (decision 17/CP.7, 11 November 2001; hence need not to be considered in the development of baseline.

The validation of the input parameters used in the investment analysis and the benchmark analysis has been described in detail in section 4.6.4 below.

The Project Participant referenced the relevant policies of the Indian government in section B.5 of the PDD and also the selected baseline scenario reasonably represents what would happen in the absence of the project activity based on sectoral scope knowledge as per para 85 of VVM (version 1.2)<sup>7/</sup>; thus, it is accepted. The project participant has included all sources and references used for baseline determination for the project activity in the final PDD<sup>1.7/</sup> and the project identified baseline is justified appropriately by the project participant with para 87 of the of VVM (version 1.2)<sup>7/</sup>.

The additionality of the project activity has been assessed in accordance with the “Tool for Demonstration and Assessment of Additionality”<sup>9.5/</sup> Version 06.0.0. Detailed investment analysis and common practice analysis has been demonstrated by the project participant as prescribed by Additionality tool.

#### Discussion of CARs/CLs:

**CAR 06** was raised to describe the national policies and circumstances relevant to the baseline of the proposed project activity in section B.4 as per the requirement of paragraph 85 of VVM/version 1.2. In response, the PP has revised the section B.4 of the PDD and clearly mentions that The Electricity Act 2003 does not mandate or restrict the PP for the usage of any technology and fuel for electricity generation. This is confirmed that project activity by the PP is voluntary initiative. Hence **CAR#06 is closed.**

#### Opinion:

Based on the requirements of paragraphs 81-88 of the VVM version 01.2<sup>7/</sup> (EB 55 Annex 1), the validation team confirms that:

- (a) All the assumptions and data used by the PP are listed in the PDD, including their references and sources
- (b) All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the final PDD, being submitted for requesting registration
- (c) Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable
- (d) Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD

The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity.

#### **4.6.1 Additionality**

The additionality of the project has been presented in the PDD using the steps of the tool for the demonstration and assessment of additionality version 6.0.0<sup>/9.5/</sup>.

The PP has demonstrated the investment analysis to demonstrate the additionality and same is discussed in section B.6.4 of the report. The approach used in the PDD has been assessed based on a document review, whilst the following relevant documents have been reviewed

- Proposal from Suzlon Energy Limited (SEL)<sup>/13/</sup> to the PP concerning to invest in Wind power project
- Benchmark analysis excel spreadsheet<sup>/4.1/</sup>

On site, the additionality of the project activity has been discussed principally with the representative of the PP (Mytrah Energy (India) Limited (MEIL)). Finally the data, rationales, assumptions, justifications, justifications and documentation provided have been checked using local knowledge and sectoral and financial expertise, and cross checked by:

- Power Purchase Agreement (PPAs)<sup>/15/</sup>
- Purchase orders for WTGs<sup>/14/</sup>
- Commissioning Certificates for all WTGs<sup>/10/</sup>
- Land Lease documents<sup>/12/</sup>

Based on this validation steps we can confirm that the documentation assessed is appropriate for the project

#### **Opinion**

Based on the responses to the various approaches mentioned above and the requirements of paragraphs 94-97 of the VVM version 01.2<sup>/7/</sup> (EB 55 Annex 1), the validation team confirms that the documents provided for the project activity are appropriate. Hence, the data, rationales, assumptions and justifications provided in the final PDD and financial calculation excel sheet are reliable and credible.

#### **4.6.2 Prior Consideration of the Clean Development Mechanism**

##### **Start Date:**

The start date of the project activity is 18/01/2011 which has been checked from the first purchase order<sup>/14/</sup> placed for the project activity. This is the earliest date on which the PP has committed to project capital expenditure. This is found earliest real action towards the implementation of the project activity in line with project start date definition as mentioned under CDM Glossary version 07 (page 20 of EB 70 Annex 04)<sup>/9.6/</sup> and para 67 of EB 41 Meeting Report, thus it is accepted.

##### **Prior Consideration of CDM:**

The project activity has already been implemented. Since the start date of the project activity is 18/01/2011<sup>/14/</sup> which is after 02<sup>nd</sup> August 2008, the Project Participant must inform the host party DNA and the UNFCCC secretariat in writing of the commencement of the project activity and 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, using the standardized form F-CDM-Prior Consideration in line with EB 62 Annex 13.

Chronology of events and means of Validation are tabulated as below:

Sr. No.	Chronology of Events	Date / Duration	Means of Validation <sup>17/</sup>
1	Prior consideration of CDM form sent to UNFCCC and NCDMA (Host country DNA)	16/08/2010	Validation team has checked the E-mail communications for the intimation to UNFCCC Secretariat and NCDMA regarding the proposed CDM project activity and submission of <b>F-CDM-PC</b> (Prior Consideration of the CDM Form) <sup>17.1/</sup> .
2	Acknowledgement email from host party DNA i.e. NCDMA	17/08/2010	Acknowledgement email from NCDMA to project participant dated 17/08/2010 <sup>17.3/</sup> is checked and it is found to be appropriate.
3	Board Resolution considering CDM benefits	13/10/2010	Validation team has checked the extracts of minutes of Board of Director's meeting
4	Start date of the project activity	18/01/2011	PO (Ref. Suzlon/ 2010-11) dated 18/01/2011 <sup>14/</sup> for supply of WTGs (S-88 Model; 12 x 2.10 MW), tubular towers, transformers, civil works, electrical works, erection, installation commissioning of WTGs
5	Resubmission of Prior CDM Consideration form to UNFCCC	07/03/2011	Intimation to the UNFCCC Secretariat regarding the proposed CDM project activity and submission of <b>F-CDM-PC</b> (Prior Consideration of the CDM Form) through E-mail <sup>17.4/</sup> .  The information is again cross checked from prior CDM consideration at UNFCCC web-link <a href="http://cdm.unfccc.int/Projects/PriorCDM/notifications/index.html">http://cdm.unfccc.int/Projects/PriorCDM/notifications/index.html</a> and it is found appropriate.
6	Acknowledgement email from CDM EB	07/04/2011	Acknowledgement email from UNFCCC to project participant dated 07/04/2011 <sup>17.5/</sup> is checked and it is found to be appropriate.

The Project Participant had submitted prior notification of commencement of the project activity and their intention to seek CDM status to the UNFCCC as well as host country DNA on 16/08/2010<sup>17.1/</sup> and resubmitted the same to UNFCCC Secretariat on 07/03/2011 and acknowledgement on the same was received by the UNFCCC on 07/04/2011. The same has been checked and confirmed from the web site <http://cdm.unfccc.int/Projects/PriorCDM/notifications/index.html><sup>17.6/</sup>. Also prior notification was submitted to host country DNA i.e. NCDMA on 16/08/2010 which is evident from a screenshot of email from the PP to NCDMA dated 16/08/2010<sup>17.1/</sup>. The PP also submitted acknowledgement email received from NCDMA dated 17/08/2010<sup>17.3/</sup> for the same. Hence it is concluded that the PP was notified the host party DNA and the UNFCCC within six months of start date of the project activity about commencement of the project activity and their intention to seek CDM status. This notification has been done using the standardized prior consideration form. The form contains a brief description of the proposed project activity and the precise geographical location of the project activity; hence requirement of paragraph 2 of EB 62 Annex 13 is fulfilled.

Thus the validation team is of the opinion that the Project Participant seriously considered CDM in their decision to go ahead with the implementation of the project activity. This is found to be appropriate and it is accepted.

#### Discussion of CARs/CLs:

**CAR 07 (#1)** was raised to demonstrate the prior consideration of the CDM in line with EB 62 annex 13. In response, the PP has submitted the evidences for the project start date, Prior consideration of CDM form sent to the UNFCCC and NCDMA (Host country DNA) and acknowledgement email from the CDM EB and NCDMA. Based on the E-mail evidences, **CAR 07 (#1)** is closed. For details, pls. refer to section A3 below.

**CAR 07 (#2)** was raised to demonstrate that no diversion of ODA fund from the Annex I party has been used for the project activity. In response the PP has submitted the letter of undertaking dated 26/12/2011 which transparently states the funding arrangement used in financing the project activity. It is found that the project activity has been funded through equity participation from M/s Bindu Vayu (Mauritius) Limited and long term debt component from IDFC Limited, IRDA, Canara Bank and Punjab National Bank. Hence, it is confirmed that ODA is not involved in the project financing. Thus, **CAR 07 (#2) is closed.**

#### **Opinion**

Thus, as per requirements of paragraphs 94-104 of VVM version 01.2<sup>7/</sup> (EB 55 Annex 1), validation team is of the opinion that the fulfilment of the conditions stipulated vide Annex 13 of EB 62 have been demonstrated with documentary evidences, Validation team concludes that there was a prior consideration of CDM and the CDM benefits were considered necessary in the decision to go ahead with the proposed project and simultaneously applying for CDM registration for the same project.

The validation team is of the opinion that the CDM was seriously considered in the decision to implement the project activity as per the requirements of EB 62 annex 13.

#### **4.6.3 Identification of alternatives**

Additionality of project activity is determined based on “Tool for the demonstration and assessment of additionality”<sup>9.5/</sup> (version 06.0.0). To demonstrate and assessment of additionality the project activity all plausible and credible alternative scenarios have been identified in the PDD in line with the ACM002 version 12.3.0<sup>8/</sup>.

Step 1: Identification of alternatives to the project activity consistent with current laws and regulations

Sub-step 1 a. Defines alternatives to the project activities

Two alternatives to the project activity have been identified and discussed:

- i) The project activity without CDM benefits and
- ii) Continuation of the current scenario, in this case that an equivalent amount of electricity would, in the absence of the project activity, have been generated by the operation of grid connected power plants and by the addition of new generation sources. Both alternatives are in compliance with the laws and regulations of India and might be considered as baseline scenarios.

#### **Sub-step 1b. Consistency with mandatory laws and regulations:**

The alternatives considered are consistent with current laws and regulations and there are no legal and/or regulatory requirements that prevent the above alternatives from occurring. This has been validated by having discussion with the project participant and also the validation team has knowledge of local laws and regulation.

The validation team confirms that the project participant has stated the assumptions and data including the references and sources to identify baseline scenario in sections B.5 of the PDD (VVM paragraph 87)<sup>7/</sup>. The validation team has verified the references and finds them to be correctly quoted and relevant. Validation team considers the listed alternatives to be credible and complete.

#### **Opinion:**

Validation team confirms that the Project Participant has stated the assumptions and data including the references and sources to identify baseline scenario in accordance with the applied methodology i.e. ACM002 version 12.3.0 and the Tool for the demonstration and assessment of additionality, version 06.0.0. The validation team has verified the references and finds them to be correctly quoted and relevant.

#### 4.6.4 Investment analysis

In accordance with the applied methodology ACM0002 version 12.3.0, the additionality of the project activity shall be demonstrated and assessed using the latest version of the “Tool for the demonstration and assessment of additionality” Version 06.0.0.

For CDM project activity, the PP has used investment analysis to demonstrate the additionality. Since alternative of the project activity is the supply of electricity from a grid and this is not to be considered as an investment; benchmark is considered to be appropriate in line with paragraph 19 of Annex 05 of EB 62 i.e. Guidelines on the Assessment of Investment Analysis, version 05. The project participant has demonstrated that the financial returns of the proposed CDM project activity would be insufficient to justify the required investment return in line with paragraph 109 of VVM (version 1.2) and DOE has found the argument valid. The input parameters in the base case financial analysis have been taken as per values applicable at the time of decision (i.e. 13/10/2010<sup>111</sup>) to invest in the project activity in line with Paragraph 6, Annex 05 of EB 62.

#### Choice of approach

The Project Participant has selected a benchmark analysis for demonstrating the additionality of the project activity. The Project Participant cannot apply simple cost analysis and investment comparison analysis since the project brings additional revenue from the sale of electricity and therefore the selected benchmark analysis is considered justified for demonstrating the additionality of the project. To demonstrate and assess additionality of the project activity, investment analysis requires to determine whether the proposed project activity is the economically or financially less attractive without the revenue from the sale of certified emission reductions (CERs). The PP has used benchmark analysis (Option III of the tool) in which the post-tax equity internal rate of return (IRR) for the project cash flows serves as the parameter for deciding the financial attractiveness of the project. The proposed CDM project activity is less economically or financially attractive than at least one other credible and realistic alternative which is in line with para 109 (b) of VVM (version 1.2)<sup>77</sup>. Since the Project Participant is demonstrating the financial unattractiveness of the project, the equity IRR is appropriate, as the project cost involves both equity and debt. Hence, equity IRR is considered by the PP and is appropriate for the project activity.

#### Benchmark selection

In accordance to “guidelines on the assessment of investment analysis”<sup>9.3/</sup> if the project could be developed by an entity other than the Project Participant, then the benchmark must be based on the parameters available in the market. The PP has calculated expected return on equity derived from the Capital Asset Pricing Model (CAPM), considering beta values of power generating companies in India that were listed at the time of investment decision (date on which the PP decided to invest in the project: Board resolution date<sup>111</sup>). The suitability of the benchmark and the appropriateness of calculations adopted has been verified and accepted based on the book “Corporate Finance Theory and Practice” written by Dr. Aswath Damodaran of Stern School of Business, New York University<sup>42</sup>.

As per CAPM, the required return on equity investment is the return of a risk-free security plus beta times the difference between the market return and the risk-free return. The Government Securities have been taken to represent the risk free return. Stock index has been used to represent the market return. Power industry specific beta value has been applied to represent the market returns relevant to the risk of the project activity sector. The key parameters of the CAPM model have been calculated as follows:

#### 1. Risk Free Rate of return ( $R_f$ ):

In India, the Government of India bonds or securities are considered as the most suitable representative for calculation of risk free rate in the market. Thus, an average government bond rate (risk free rate) applicable at the time of investment decision for long term investment (for 20 years) has been considered. Maturation period of 20 years (term of maturity) is appropriate in-line with the life time of the project activity as twenty (20) years as per the expectations of investors for compensating the long term investments over the economic life of the asset.

The yield to maturity of the government securities data for term of maturity of 20 years published on 12/10/2010 has been used. Validation team confirms that the returns on Central Government securities as verified from the official website of the Reserve Bank of India are appropriate. The same has been checked and confirmed from [http://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/26CT\\_BL091010.pdf](http://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/26CT_BL091010.pdf) which was published

Reserve Bank of India in 12/10/2010<sup>31/</sup>, hence the source is found to be appropriate and was latest at the time of investment decision.

Date of Publication	Risk free rate of return (Yield to Maturity; Term of maturity of 20 years)
12/10/2010	8.36%

**2. Suitable risk premium (Rm- Rf):** As stated above, suitable risk premium to reflect the project type consists of computation of two variables, viz., (a) market risk premium and (b) risk profile of the project type - the product of which yields suitable risk premium reflecting the project type

**a) Market risk premium:** The market risk premium or simply risk premium, as measured and applied in practice, is the premium over and above the risk-free rate of return that investors expect to earn on a *well-diversified portfolio of equities*. Therefore, market risk premium calculation involves computation of risk free return and return on a well diversified portfolio.

Equity indices are indicator of expected market return. With a view of eliminating the unsystematic risk associated with the projects totally Power generating companies listed in BSE<sup>36/</sup> has been taken to represent the market return.

In order to determine the market return for the cost of equity in CAPM model, the market return from Sensex (BSE-30) is considered due to its reflection of the market return for a longer period over the other index. BSE-30 started in April-1978 but data is available in the public domain since Jan 1991. Hence being on conservative side a period from Jan 1991 till the decision making i.e. time period of 19.67 years (~20 years) is considered for the proposed project activity and value of market return arrived as 16.58%.

The Project Participant has also calculated the market return considering BSE 500, BSE 100 and BSE 200 index to calculate market return. Since the base year for BSE 500 is 01st February 1999 with an index value of 1000, the PP has considered the time period and the index values from the base year to arrive at market returns. However BSE 500 is available only for eleven years, the PP has considered other indices viz., BSE 100, BSE 200 and BSE Sensex which are available for longer time period to arrive at the market return.

Market Return	Sensex		BSE-100		BSE-200	
	Date	Close	Date	Close	Date	Close
<b>Start date</b>	1-Jan-91	982.32	1-Jan-91	290.99	1-Jan-90	100.00
<b>Data available at Investment Decision</b>	Sep-10	20069.12	1-Sep-10	6163.86	1-Sep-10	2530.47
<b>No of years of Index</b>	19.67		19.67		19.67	
<b>Market Return</b>	16.58%		16.79%		17.86%	

Thus, the PP has used BSE 100, BSE 200 and BSE Sensex which is available for 20 years to calculate market return and conservative value among the three indices has been chosen as market return. The validation team has validated the data used for the calculation for the market return from the BSE (<http://beta.bseindia.com/indices/IndexArchiveData.aspx?expandable=3>). Hence the market return is been concluded to 16.58% which is CAGR of BSE SENSEX for the time period of twenty years till decision making time. The market return has been arrived based on compounded annual growth rate (CAGR) during this period. Market return works out to 16.58%<sup>1</sup>.

<sup>1</sup> BSE-30 (SENSEX) as on 01/01/1991 was 982.32 and as on Sep-10 was 20069.12. The duration is 19.67 years, Hence, the CAGR works out to 16.58%

**Market Risk Premium (%):**

The assessment team is able to confirm that the vintage years used to calculate market return and consequently benchmark is appropriate and comparable with the investment horizon and project activity life time. Thus, the resultant market risk premium is arrived as (16.58% - 8.36%) = 8.22%.

**b) Project risk profile:**

**Beta ( $\beta$ ) calculation**

It is customary to measure the risk profile of the project through beta ( $\beta$ ). Beta ( $\beta$ ) is the measure of risk of a specific sector/company. Beta of power sector can be applied as proxy risk profile for the project activity. The Beta in the CAPM equation helps account for the systematic risk by quantifying the sensitivity of the stock of a listed company representing a particular project type/sector with the market returns. Since this is a wind energy generation project, the risk estimate for the project is on the basis of beta values of all listed power generating companies in India. It is understood that risky businesses are likely to have higher cost of equity than safer businesses; projects in riskier businesses will have to cover these higher costs. Hence, investors demand a higher return from renewable energy projects than from conventional energy ones, given the higher risks in renewable, including risks of technology, risks from significantly varying and unpredictable resource availability (e.g. wind), and a lower established support base for such projects relative to that for conventional power (e.g. grid connections, bank finance, suppliers, etc.).

Selection of Companies:

For this proposed CDM project activity, the beta values are calculated for 07 power generating companies in India which were listed on stock exchange at the time of conceptualization of the project activity with trading history more than 5 years.

The data used to calculate the Equity Beta of the selected companies are from the stock prices available from the BSE exchange. A period of latest 5 years stock price data has been considered for determining the Equity. The PP for setting up the regression can use the data (monthly stock prices) for either a long gestation period or for a short period. A longer gestation period may provide more data for observation which is desirable, but however the firm itself might have changed its risk characteristics over the time period. For instance, using data for a longer period (from 1991 to till decision making) to estimate beta might increase the amount of data available, but it will lead to a beta estimate that is much higher than the true beta, since the firm was a smaller and riskier firm in 1991 than it was in 2010. Hence the financial experts recommend a period of 5 years for beta estimation. This is as indicated by Ashwath Damodaran in his "Corporate Finance Theory"<sup>42/</sup>. Hence a recent data of 5 years has been considered for the regression analysis, as suggested in the Corporate Finance Theory by Ashwath Damodaran<sup>42/</sup>. The 5 years data vintage is further also cross checked with the validation report of the CDM registered project activity UN 6220.

Company Name	Equity Beta (Levered Beta)	Unlevered beta
Reliance Infra	1.69	1.43
Tata Power	0.97	0.71
NTPC	0.59	0.42
NLC	1.430	1.13
BF utilities	2.020	0.92
CESC	1.070	0.73
Jaiprakash Power	1.670	0.80
Average	1.350	0.88

The steps for the selection and choice of the companies is provided in the Benchmark calculation sheet by the PP and checked. The PP has considered BSE 500 index as it represents larger list of companies which are present in power sector. The companies selected for beta value are in the business of power generation in India and listed in the stock exchange at the time of investment decision. Considering the large number companies would minimize the bias if any due to prevailing market conditions. BSE 500 has approximate 5 years vintage data available at the time of investment decision of the project activity. For the Beta

calculations, the PP has used BSE 500 index. The chosen average beta value of 0.88 (unlevered Beta) is found to be appropriate estimate of the risk relating to similar project activities while calculating the cost of equity. Since, the average value represent the more actual scenario for the power sector, than considering a single company, the average value is found more appropriate to the assessment team than the consideration of lowest/conservative value. To see the robustness of additionality, benchmark with minimum beta (0.42 – NTPC) is also calculated by the assessment team and checked. The resultant return on equity (i.e. benchmark) using the minimum beta (0.42 – NTPC) is 11.81%. The proposed CDM project activity is still additional in that scenario as the equity IRR is only 7.65%<sup>4.1/</sup>.

Further, it is also found that the some of the registered projects in the same technology (wind) in the host country considers the 3 years data vintage for the calculation of the beta. As a cross check measure, a beta with 3 years vintage data of selected companies had been calculated by the assessment team and it is found that 5 years vintage provides more conservative (lower) value of beta as compared to 3 years vintage. Thus, the calculation and consideration by the PP is found correct and appropriate and thus accepted.

In addition to above, validation team has further checked the Beta value using BSE SENSEX data. As on conservative basis, the PP has considered the BSE SENSEX index for the market return calculation and in accordance with the same the listed companies with BSE SENSEX are re-considered in the Beta calculation. It is found that, in the calculation of unlevered beta, considering the BSE SENSEX data will results a higher Beta value (**Unlevered beta=0.94**) for the above mentioned power companies as verified from the additional benchmark calculation spreadsheet<sup>4.4/</sup>. Thus, it is confirmed that, the Beta calculation using BSE 500 index is more appropriate as explained above and also conservative.

### 3. Return on Equity:

The return on equity is calculated as;

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

Based on Capital Asset Pricing Model (CAPM) expected cost of equity works out to be 15.59%. The expected cost of equity calculation has been verified by the Validation team and was found to be correct. The calculations are checked and confirmed with the financial expert and it is found appropriate; thus it is accepted.

The benchmark based on CAPM has been arrived at 15.59% which is based on parameters that are standard in the market and using best financial practices used in the host country (in compliance with para 15 of EB 62 Annex 5). The PP has not considered the additional risk premium for wind project. Thus the benchmark considered is conservative in accordance with the Para 112 of the VVM version 1.2. The benchmark has been determined by means of publically available hence this is in accordance with the guidance stipulated as per paragraph 12 & 13 of EB 62 Annex 05.

Validation team further cross checked the derived benchmark (Return on equity) based on parameters that are standard in the market (as assessed above) with the return on equity determined selecting the values provided in Appendix A of EB 62 Annex 05.

As per EB 62, Annex 5, Appendix A, the default return on equity provided for India for Group I industry is 11.75% in real terms.

The PP has converted the real term value to nominal values by adding

a) Inflation forecast of the Reserve Bank of India (central bank of the host country) for 10 years (the duration of the crediting period)

As validated from Survey of Professional Forecasters: Results of the Thirteenth Round (Q2:2010-11) issued by The Reserve Bank of India, the Annual average percentage change of WPI inflation (Inflation forecast of the Reserve Bank of India) over the next ten years (2010-2011 onwards) is 5.3%.

Thus,

$$\text{Return on equity}_{\text{Nominal}} = (1 + \text{Return on equity}_{\text{Real}}) * (1 + \text{Inflation rate}_{\text{Host country}}) - 1$$

$$\begin{aligned} \text{Return on equity}_{\text{Nominal}} (\text{Re}) &= (1 + 11.75\%) * (1 + 5.3\%) - 1 \\ &= \mathbf{17.67\%} \end{aligned}$$

**Conclusion:**

As per paragraph 15 and paragraph 06 of EB 62 Annex05, the benchmark derived based on CAPM at 15.59% is found appropriate benchmark for the project activity. Validation team verified all the above said documents and confirmed that the benchmark identified to compare the financial attractiveness of the project activity is appropriate. Hence, **15.59 %** is validated as suitable benchmark for equity IRR as per VVM, ver 1.2 (EB 55, Annex 1), para 112a, b & c.

Suitability of benchmark considered for the project activity is confirmed in line with paragraph 112 of VVM Version 1.2 as follows:

112 (a) The financial indicator used for the project investment analysis is post tax equity IRR, and the benchmark has been calculated as which is suitable to the type of financial indicator chosen by the PP.

(b) Since this is a wind power project, the risk estimate for the project is on the basis of beta values of all listed power generating companies in India. It is understood that risky businesses are likely to have higher cost of equity than safer businesses; projects in riskier businesses will have to cover these higher costs. Hence, investors demand a higher return from renewable energy projects than from conventional energy ones, given the higher risks in renewable, including risks of technology, risks from significantly varying and unpredictable resource availability (e.g. wind), and a lower established support base for such projects relative to that for conventional power (e.g. grid connections, bank finance, suppliers, etc.). The use of this Beta value is therefore considered conservative, as it does not add for the higher risk of non conventional energy. Furthermore, the PP has used the average beta of 0.88.

(c) The assessment team has validated the financial analysis of the project based on the input parameters available at the time of investment decision along with the respective sensitivity analysis considering +/- 10% variation on the critical parameters and it is confirmed that scenarios are not likely to occur in which the equity IRR crosses the benchmark. Hence the assessment team is able to confirm that the project is not financially viable and it is reasonable to assume that no investment would be made at a rate of return lower than the benchmark.

The PP has submitted all versions of the excel spreadsheets used for the investment analysis. The financial expert has checked the sheets. 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.

Reliability and credibility of all the data, assumptions, justifications and documentation has been assessed in line with Paragraph 95 of VVM (version 1.2).

**Financial Indicator**

The PP has used the following assumptions for investment analysis as per the information available at the time of project investment decision making. The data, rationales, assumptions and justifications mentioned in the final PDD<sup>/1.7/</sup>, investment analysis excel sheets<sup>/3.1/</sup> and the benchmark excel sheets<sup>/4.1/</sup> were

crosschecked against the local knowledge of the validation team, regulatory and applicable legal requirements in the Host country India. The documents were also verified by a sectoral and financial expert. The appropriateness of the input values, used for financial calculation have been checked in line to paragraph 6 of EB 62 Annex 05.

The investment decision date of the proposed CDM project activity as per the board resolution is as below:

Project Participant	Date of Investment	Validation Opinion
Mytrah Energy (India) Limited(MEIL) formerly known as Caparo Energy (India) Limited	13/10/ 2010	Verified with help of the Board Resolution dated 13/10/ 2010 provided by the project participant <sup>/11/</sup> and further validated based on interviews with Mr. K.S.K.Singaravelan (Please refer section 6)

### 1. Project cost (INR)

The project cost, mentioned in the table below, has been considered from the proposal<sup>/13/</sup> issued by the WTG supplier i.e. Suzlon Energy Limited. The project cost includes the cost of the WTG; erection, installation and commissioning charges. These values are found to be appropriate and accepted. The budgetary offer received from the Suzlon Energy Limited explicitly mentioned that per WEG (each of 2.10 MW) cost is excluding the O & M cost, insurance cost, prevailing service taxes etc. and it is mentioned that Land will be taken on lease as per the regulation of Government of Gujarat.

The capital cost of the project activity has also been cross checked against the purchase orders<sup>/14/</sup> of the project activity issued by the project participant and found to be appropriate and acceptable.

Parameter	Value	Source	Justification and cross checking												
Project cost; INR Millions			<p>The project cost taken from proposal by M/s Suzlon Energy Limited dated 02/06/2010 was considered as the most appropriate evidence to substantiate the cost as it was only document available to the PP at the time of the investment decision. Accordingly, the proposal from the equipment supplier for the project was verified and found to be correct and in line with para 6 of EB 62 Annex 5.</p> <p>The offer letter mentions per MW cost of S88 type WTG (12 nos. x 2.10 MW) is 114.83 INR Millions.</p> <p>The costs were further compared with the actual contract agreements (Purchase orders) issued by Caparo Energy (India) Limited<sup>/14/</sup>. The details of the purchase orders is validated as below:</p> <table border="1"> <thead> <tr> <th>Particulars</th> <th>Total Price (INR)</th> </tr> </thead> <tbody> <tr> <td>Supply of S-88 Suzlon make 2100 KW WTG (Nassel, Hub, Controller (microprocessor)</td> <td>736134000</td> </tr> <tr> <td>Supply of set of 3 rotor blades forming part of S-88 Suzlon 2100 KW WTG</td> <td>126630000</td> </tr> <tr> <td>Tubular tower</td> <td>162000000</td> </tr> <tr> <td>2500 KVA, 690/33 KV, 3 phase distribution transformer</td> <td>18000000</td> </tr> <tr> <td>Work order for erection, installation &amp; commissioning</td> <td>1434000</td> </tr> </tbody> </table>	Particulars	Total Price (INR)	Supply of S-88 Suzlon make 2100 KW WTG (Nassel, Hub, Controller (microprocessor)	736134000	Supply of set of 3 rotor blades forming part of S-88 Suzlon 2100 KW WTG	126630000	Tubular tower	162000000	2500 KVA, 690/33 KV, 3 phase distribution transformer	18000000	Work order for erection, installation & commissioning	1434000
Particulars	Total Price (INR)														
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Tubular tower	162000000														
2500 KVA, 690/33 KV, 3 phase distribution transformer	18000000														
Work order for erection, installation & commissioning	1434000														
Capita cost of 12x2.1 MW WTGs	1378	Offer letter from Suzlon Energy Limited 02/06/2010 <sup>/13/</sup>													

			<table border="1"> <tr> <td>Civil works (Foundation work for WTG and Transformer Platform, Other civil works)</td> <td>68052000</td> </tr> <tr> <td>Electrical works</td> <td>63840000</td> </tr> <tr> <td>Use of Power Evacuation facility</td> <td>100800000</td> </tr> <tr> <td><b>Total</b></td> <td><b>1276890000</b></td> </tr> </table>	Civil works (Foundation work for WTG and Transformer Platform, Other civil works)	68052000	Electrical works	63840000	Use of Power Evacuation facility	100800000	<b>Total</b>	<b>1276890000</b>	<p>Thus, based on the above listed particulars, the actual overall capital cost of 25.20 MW wind power project consisting of 12 nos. of S-88 Suzlon make 2100 KW WTG is 1276.89 Millions INR.</p> <p>Since, the difference from the value applied in the investment analysis (1378 Millions INR) is only of 7.33% and the same is acceptable as the actual cost is excluding the equipment transportation cost and any additional work at site etc.</p> <p>The GERC has published a tariff order dated 30/01/2010<sup>32/</sup>, available at the time of investment decision This tariff order considers the project cost for wind power projects in the state as 4.62 crores per MW (46.2 million/MW – Page 9-10). The project cost for the propose project activity comes to 54.68 million INR per MW. This is about 18.35% higher than as considered in the tariff order. This has been checked with the sectoral expert and it is learnt that the price of the WTG per MW varies differently based on the suppliers, model of WTG, tower height, blade size, capacity of WTG, region etc. The tariff order does not specify the capacity of WTGs or the suppliers and thus such variation may have been observed. The cost of project activity was also validated through Centre for Wind Energy technology (an autonomous R&amp;D institute under Ministry of New and Renewable Energy Sources (MNRE), India, which states “For a wind farm, the capital cost ranges between 45 million INR to 68.5 million INR depending on the type of turbine, technology, size and location” <sup>/21/</sup>. Further, the actual price considered by the PP has been further cross checked with the purchase orders and no such significant variation (-7.33% in EPC price) is found.</p> <p>It is further checked that based on the project cost as validated form the purchase order, the equity IRR of the proposed project is 10.30% which is less than the benchmark, thus found acceptable to the validation team.</p> <p>In addition to which sensitivity analysis was done to establish the conservativeness of cost as per para 20 of EB 62 Annex 5. Further, the actual capital cost is within -10% of those assumed in the investment decision of the project and any reduction beyond 10% is not realistic as the supply agreements are already in place and were validated by the validation team.</p>
Civil works (Foundation work for WTG and Transformer Platform, Other civil works)	68052000											
Electrical works	63840000											
Use of Power Evacuation facility	100800000											
<b>Total</b>	<b>1276890000</b>											

The capital cost per MW of the project activity is **54.68** Million INR. The project cost per MW of the project activity has been cross checked against CDM registered projects in the same region i.e. the state of Gujarat. The following registered projects were referred:

For Gujarat –UNFCCC Ref No's- 3578, 3632, 3783, 3742, 4700, 4756, 5777 and 6031

Project Name	Investment decision	State	Project Cost, Million INR/ MW
Cepco Wind Power Project in Gujarat (UN 6031) ( <a href="http://cdm.unfccc.int/Projects/DB/RINA1334129068.13/view">http://cdm.unfccc.int/Projects/DB/RINA1334129068.13/view</a> )	30/09/2010	Gujarat	58.05
AES Saurashtra Windfarms (UN 5777) ( <a href="http://cdm.unfccc.int/Projects/DB/DNV-CUK1328700673.83/view">http://cdm.unfccc.int/Projects/DB/DNV-CUK1328700673.83/view</a> )	14/07/2010.	Gujarat	63.00
Vaayu India Wind Power Project in Gujarat. (UN: 4700)  ( <a href="http://cdm.unfccc.int/Projects/DB/DNV-CUK1303122887.18/view">http://cdm.unfccc.int/Projects/DB/DNV-CUK1303122887.18/view</a> )	28/11/2009	Gujarat	59.34
7.5 MW wind energy project by Lal Mahal Limited in the State of Gujarat (UN 3578) ( <a href="http://cdm.unfccc.int/Projects/DB/BVQI1269925711.87/view">http://cdm.unfccc.int/Projects/DB/BVQI1269925711.87/view</a> )	29/12/2006	Gujarat	60.67
Wind power project at Gujarat by Powerica Limited (3632)  ( <a href="http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1270819651.34/view">http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1270819651.34/view</a> )	17/09/2009	Gujarat	65.81
8.5 MW wind power based electricity generation in the Northern and Western region grids of India (3783) ( <a href="http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1276518228.56/view">http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1276518228.56/view</a> )	Sub-bundled activity  PP: Eastman Impex  (15/09/2007)	Gujarat	60.57
Bundled Wind Power Project by M/s. D. J. Malpani (3742) ( <a href="http://cdm.unfccc.int/Projects/DB/SGS-UKL1275036583.3/view">http://cdm.unfccc.int/Projects/DB/SGS-UKL1275036583.3/view</a> )	20/10/2008	Gujarat	54.37
21 MW Wind Power Project by Indian Oil Corporation Limited in Gujarat (4756)  ( <a href="http://cdm.unfccc.int/Projects/DB/DNV-CUK1304071464.49/view">http://cdm.unfccc.int/Projects/DB/DNV-CUK1304071464.49/view</a> )	30/07/2008	Gujarat	62.57

The validation team ascertained the reasonableness of the cost by comparing it with other projects in Gujarat which are registered with the CDM EB.

The validation team found that the cost of projects which had taken management decision between 2006 and 2010 (the management decision by the candidate project participant was taken in October 2010) ranged between 54.37 Million INR/ MW to 65.81 Million INR/ MW. The proposed project cost falls in the lower end of the range.

This variation in project cost are due to reasons such as different suppliers; varying capacity of the projects; negotiation capability of the client; etc. Moreover, the cost is also supported by the purchase orders. Thus,

based on the purchase orders released and comparison of cost with other registered projects, which have been registered, validation team concludes that the project cost is reasonable, reliable, appropriate and correct. The value of project cost was also checked by the sectoral scope expert and confirmed to be appropriate.

## 2. Plant Load Factor (PLF):

As verified based on the quotation received from the technology supplier/<sup>13/</sup> i.e. Suzlon Energy Limited dated 02/06/2010 for the supply of the 12x2.1 MW WTGs (S-88 Model) at Mahidad Site in the Gujarat, which clearly mentions the estimated annual energy generation by the 2.1 MW WTG at the project site as 39.51 lacs unit (i.e. 3951 MWh) resulting the annual PLF of 21.48%. This is confirmed that the project technology and location specific PLF was available to the PP at the time of investment decision (i.e. 13/10/2010). In order to comply with the requirement of Para 6 of EB 62 Annex 5, the PP has calculated the equity IRR considering the PLF (i.e. 21.48%) available at the time of investment decision which results the equity IRR of 5.43%.

However, in the investment analysis presented in the PDD, the PLF considered for the WTGs of the proposed project activity is **22.95%**.

The PLF of 22.95% is based on third party estimation i.e. "25.2 MW Gujarat Wind Farm Wind Resource and Energy Yield Assessment" performed by Parsons Brinckerhoff India Pvt. Limited dated 15/07/2011<sup>19/</sup>. Based on the assessment of the third party PLF study report<sup>19/</sup>, this is confirmed that Parsons Brinckerhoff India Pvt. Limited has evaluated the PLF of project activity WTGs (S-88 Model with 80 meter hub height) at Mahidad project site. Since, the PLF determined by third party is also site and technology specific and the report shows slightly higher PLF than the PLF provided by the technology supplier i.e. Suzlon Energy Limited, thus, on the basis of principle of conservativeness, the PP has considered the PLF of 22.95% in the investment analysis. This is found to be appropriate.

Estimation of PLF by third party organization confirms the guidelines for the reporting and validation of Plant Load Factors. In line with 3(b) of EB 48 Annex 11, the PLF based on the estimation of the third party engineering company comes out as 22.95% for WTGs having 2100 kW capacity at project site.

Further, to cross check, validation team has independently reviewed the PLF based on the following published regulatory documents: 1. It was checked from the GERC Tariff Order No. 1 2010 dated 30/01/2010<sup>32/</sup> (available at the time of investment decision) which talks about average PLF of 23% for tariff determination. Although the considering the same is not appropriate as the tariff order shows a generalized PLF of the Gujarat State.

2. Further, to confirmed the appropriateness of the value of PLF at the project site, the validation team has independently verified the actual energy generation records of the project site (wind farm) from the energy generation certificates i.e. Certificate of Share of electricity generated by wind farm at Bhojapuri (Mahidad) for the period from November 2011 to October 2012 issued by GETCO (also available at-[http://www.sldcguj.com/EnergyAccount/Energy\\_Block.asp](http://www.sldcguj.com/EnergyAccount/Energy_Block.asp) accessed on 28/11/2012). Based on the actual annual energy generation records for the period from November 2011 to October 2012, the actual annual PLF achieved at the project site is confirmed as 23.87%.

The PLF is further considered under sensitivity analysis and results +/-10% sensitivity is also presented in final PDD<sup>1.7/</sup>. The sensitivity analysis shows that the benchmark will be crossed only if the PLF increases by 20.59% (The resultant value of PLF will be 27.68%). It is most likely that this won't happen as validation team has already cross checked and confirmed the actual annual PLF of the project site, which is only 23.87%. Thus the value applied is deemed as reasonable and acceptable.

The validation team has further checked the PLF considered in the CDM registered project in Gujarat. With UNFCCC Ref No's- 3783, 4756 and 6031.

Project Name	Investment decision	State	PLF (%)
Cepco Wind Power Project in Gujarat (UN 6031) ( <a href="http://cdm.unfccc.int/Projects/DB/RINA1334129068.13/view">http://cdm.unfccc.int/Projects/DB/RINA1334129068.13/view</a> )	30/09/2010	Gujarat	24%

<p>8.5 MW wind power based electricity generation in the Northern and Western region grids of India (3783)  <a href="http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1276518228.56/view">http://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1276518228.56/view</a></p>	<p>Sub-bundled activity           PP: Eastman Impex           (15/09/2007)</p>	<p>Gujarat</p>	<p>23%</p>
<p>21 MW Wind Power Project by Indian Oil Corporation Limited in Gujarat (4756)   <a href="http://cdm.unfccc.int/Projects/DB/DNV-CUK1304071464.49/view">http://cdm.unfccc.int/Projects/DB/DNV-CUK1304071464.49/view</a></p>	<p>30/07/2008</p>	<p>Gujarat</p>	<p>21.84%</p>

The PLF considered in the proposed CDM project is within the range, hence found acceptable to the validation team.

**3. Operation and Maintenance Cost:** O&M cost for the project activity is considered from budgetary offer provided by service provider i.e. M/s Suzlon Energy Limited dated 02/06/2010, which mentions that comprehensive Operation, Maintenance and Security charges applicable to the project are 2 Million INR per WTG (a total of 24 Million INR for the proposed project activity) from 3<sup>rd</sup> year onwards with an annual escalation of 5 % and same will be free for the first 2 years of operation and same can be decided on mutual consent from 8<sup>th</sup> year onwards. The O & M cost considered in the investment analysis (a total of 24 Million INR in the base year) is only 1.74% of the capital cost.

The value of O & M cost has been checked against GERC Tariff Order 1 2010 dated 30/01/2010<sup>32/</sup> which mentions about the O&M cost as 1.5% of the project cost and 5% escalation on the same since the beginning of the project operations. Thus, based on the GERC Tariff order, the applicable O & M cost for the 3<sup>rd</sup> year of operation is computed as 1.65% of total project cost.

The O & M cost is validated based on the most appropriate data available to the PP at the time of investment decision as it was only document available to the PP at the time of the investment decision, which is as per para 6 of EB 62 Annex 5.

<p>O &amp; M Cost form 3<sup>rd</sup> year onwards @ % of capital cost</p>	<p>a total of 24 Million INR in the base year which is equivalent to 1.74% of capital cost</p>	<p>budgetary offer provided by service provider i.e. M/s Suzlon Energy Limited dated 02/06/2010</p>	<p>The appropriateness of same has been checked against GERC Tariff Order 1 2010 dated 30/01/2010<sup>32/</sup> which mentions about the O&amp;M cost as 1.65% of the project cost for the 3<sup>rd</sup> year of operation and 5% escalation on the same.</p>
<p>% of escalation per annum on O &amp; M charges from 4th year onwards</p>	<p>5%</p>		<p>Since, the considered O &amp; M Cost is only 5.55% higher than the O &amp; M cost adopted by the regulatory body in the Tariff determination and same is further assessed under sensitivity analysis.</p> <p>The difference of 5.55% in the O &amp; M cost does not affect the additionality of the project activity, hence found appropriate and acceptable to the validation team.</p>

Further, the O & M cost as considered by the PP is crosschecked with the other recently registered projects of the region having same technology and the supplied.

- The registered project activity **UN 6031** considers the validated O&M cost of 0.65 million INR per WTG (1.4% of total project cost) from the second year onwards, considering the O&M for the first year as free.
- The registered project activity **UN 5777** considers the validated O&M cost of 0.665 million INR per WTG (1.32% of total project cost) from the 3<sup>rd</sup> years onwards, considering the O&M for the first two years as free.
- The registered project activity **UN 4700** considers the validated O&M cost of 0.617 million INR per WTG (1.30% of project cost) for the total capacity of 51.2 MW having investment decision date on 28/11/2009.
- The registered project activity **UN 4756** considers the validated O&M cost as 1.8% of total project cost (applicable from base year) with annual escalation of 5% having investment decision date on 30/07/2008
- The registered project activity **UN 3742** considers the validated O&M cost as 2.5% of project cost for applicable after 4<sup>th</sup> year onwards with annual escalation of 5% having investment decision date on 20/10/2008

Thus, it is concluded by the assessment team that O&M cost as considered by the PP is in accordance with the prevailing market rate and is appropriately considered.

Moreover, for proposed bundled project activity this O&M cost parameter is tested for +/-10% variation sensitivity analysis carried out.

#### 4. Tariff / kWh (base year tariff)

The tariff rate as considered by the PP is levelised tariff proposed by the GERC, which is tariff regulating agency for power project in the state of Gujarat.

At the time of investment decision of the project activity the applicable tariff order for wind power projects in the state was GERC order 1 dated 30/01/2010<sup>/32/</sup>. The PP had considered the tariff rate for the project activity based on the said tariff order<sup>/32/</sup> which is 3.56 INR per kWh fixed for the entire lifetime of the project activity (25 years as per tariff order). Since, the project activity lifetime and assessment period considered is 20 years as per the manufactures specification (and also EB 50, annex 15) the PP has applied the same fixed tariff rate of 3.56 INR/kWh in the investment analysis for the project activity. The considered value of tariff was available at time of investment decision and has been appropriately considered by the PP.

The tariff order is the document through which the State (Gujarat) Electricity Regulatory Commission determines the tariff rate applicable for wind power projects. The tariff order<sup>/32/</sup> is a publicly available document and available at the time of investment decision<sup>/11/</sup>.

The validation team has cross-checked the electricity tariff applicable for the project activity against the power purchase agreement signed on 03/08/2011 with GUVNL<sup>/15/</sup>. Thus the considered tariff of 3.56 INR/kWh is appropriate for the project activity. As per clause 5.2 of PPA, "GVUNL shall pay a fixed rate of 3.56 INR/kWh for delivered energy as certified by SEA of Gujarat SLDC during 25 years of life of project as determined by the Commission through an Order-1 of 2010 dated 30 January 2010".

Thus, based on the above the electricity tariff rate is found appropriate.

#### 5. Generation based incentive (in INR/kWh), applicable to wind power projects with cap of 6.2 Million INR/MW<sup>/27/</sup>

It is confirmed that by Validation team that Ministry of new and renewable energy sources, government of India offers two types of incentives for wind power projects, project activity can claim any one out of these two:

- a) 80% accelerated depreciation under the Income Tax Act

b) Generation based incentives (GBI) of 0.5 INR/kWh with cap of 6.2 Million INR/MW of installed capacity. This 6.2 Million INR/MW can be claimed in a period not less than 4 years and a maximum period of 10 years.

The project activity has applied for generation based incentives and it has been verified by the validation team that the Project Participant can avail only under one scheme as the PP have to intimate first to Ministry about the option opted and ministry have procedure in place to track that project can avail benefit under one scheme only.

As checked from the Letter of Intent dated 24/09/2010 from IDFC for financial assistance, the project is availing GBI benefits, as per GBI guidelines, accelerated depreciation is not applicable. Further it is checked from the letter issued by IREDA Limited dated 21/11/2011 regarding the registration of 25.20 MW (12X2100 kW) wind farm for availing the GBI with unique identification number to WTGs by IREDA.

Generation based incentive is crossed checked with the guideline under Ministry of New and Renewable Energy Sources (MNRE Scheme for Implementation of Generation Based Incentives (GBI) for Grid Interactive Wind Power Projects) and is applicable from 17/12/2009<sup>27/</sup>. Hence, the guideline was available at the time of investment decision and found acceptable to the validation team.

## **6. Depreciation rates:**

### **Book Depreciation Rate on all assets (Straight Line Method basis):**

The rate of depreciation is considered as 5.28 % on all assets. Depreciation provided for computation of book profit is based on the rates prescribed by Schedule XIV of Companies Act, 1956<sup>39/</sup>. The rate has been verified and found to be correct.

### **Book depreciation up to (% of asset value)**

Validation team has validated from the GERC Tariff order "Determination of the tariff for Procurement of Power by Distribution Licensees from Wind Energy Generators and other commercial issues" dated 30 January 2010<sup>32/</sup> as per which depreciation can be claimed for 90% of the asset value (except land value). Based on this information mentioned in the GERC Tariff Order<sup>32.1/</sup>, the PP has considered 90% depreciation on the capital cost and remaining 10% considered as salvage value This is found appropriate.

### **Income tax depreciation rate on WEGs**

The project is applying for Generation Based Incentive (GBI)<sup>27/</sup> and as per the guideline on GBI<sup>27/</sup>, a project can't avail accelerated depreciation if GBI is sought.

Therefore, 80% income tax depreciation has not been considered which is normally applicable to wind mill projects. On the contrary, the PP has considered 15% depreciation rate which is as per Income Tax Act, Govt. of India. Hence, acceptable.

**7. Salvage Value:** Salvage value is considered as 10% of the project cost excluding cost of Land. The cost of Land has not been considered in the capital cost as the same is taken on government lease as validated from the budgetary offer provided by M/s Suzlon Energy Limited dated 02/06/2010<sup>13/</sup> and further checked the land leased deeds<sup>12/</sup>.

Based on the GERC Tariff order dated 30/01/2010 (section 3.10)<sup>32.1/</sup>, it was confirmed that salvage value after 20 years is 10%. Thus, 10% of plant and machinery represents potential profit and therefore it conforms to guidance 4 of Annex 5, EB 62. Therefore, the validation team considers the salvage value as correct and appropriate.

Further, the same is checked from CERC notification dated 19/01/2009<sup>45/</sup> ([http://cercind.gov.in/2009/Whats-New/tariff-pdf/CERC-\(Terms-and-Conditions-of-Tariff\)-Regulations-2009-14.pdf](http://cercind.gov.in/2009/Whats-New/tariff-pdf/CERC-(Terms-and-Conditions-of-Tariff)-Regulations-2009-14.pdf)) which clearly mentions that "The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to

maximum of 90% of the capital cost of the asset.” The appropriateness of the same is confirmed by the financial expert involved in the project activity; thus it is accepted.

**8. Corporate income Tax:** the PP has considered Corporate Tax (Effective Tax Rate with surcharge & ed. Cess) as 33.99%<sup>/33.1/</sup> and Minimum Alternative Tax as 18% in investment analysis for the project activity. This is as per **The India Budget of 2010 – 2011** ([http://indiabudget.nic.in/ub2010-11/download\\_index.htm](http://indiabudget.nic.in/ub2010-11/download_index.htm)) in line with the Income Tax Act 1961, Government of India. The appropriateness of the same has been checked and confirmed by financial expert involved in the project activity. This is found to be appropriate and it is accepted.

Corporate income tax rate in India has not varied much and thus a constant value has been assumed for the entire lifetime of the project. The validation team has verified this from the corporate tax rate survey published by KPMG each year. The result obtained from<sup>/33.2/</sup> <http://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/Documents/corporate-and-indirect-tax-rate-survey-2011.pdf> is shown below.

2005	2006	2007	2008	2009	2010	2011	2012
36.59	33.66	33.99	33.99	33.99	33.99	32.22	32.44

The validation team thus concluded that a constant tax rate can be assumed for the entire lifetime of the project.

**9. Interest on term loan (12.25%), Moratorium (12 months) and numbers of loan repayment installations (40 - Quarterly):**

**Interest Rate:**

An interest rate of 12.25% has been considered as per the latest available local commercial lending rate during decision making time. The interest rate has been sourced from the SBI (State Bank of India) prime lending rate during September 2010 (latest available at the time of investment decision)<sup>/37/</sup>. The same is found appropriate as per paragraph 12 of EB 62 Annex 05. Hence interest rate considered by the Project Participant at the time of investment decision is found to be appropriate and it is accepted.

Project developers had considered the loan tenure (repayment period) 10 years and 2 year moratorium period for project activity. These figures have been referred from GERC tariff order No. 1 of 2010, dated 30/01/2010<sup>/32/</sup> which is publically available official data and hence abolishes any ambiguity.

The interest rate as considered by the PP is further cross checked with the Reserve Bank of India (RBI) publishes Base Rate relates to five major banks since July 1, 2010 ([http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/04T\\_12102012F.pdf](http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/04T_12102012F.pdf)).

Hence, at the time of investment decision, RBI PLR for the month of October 2010 is not available. Hence, the same is not considering in the validation assessment.

- The GERC final tariff order dated 30/01/2010<sup>/32/</sup>, which is available the investment decision date allows considering the interest rate of 10.75% on term loan.

The assessment team has further independently checked the equity IRR with consideration of the above interest rate of 10.75% as prescribed by GERC order<sup>/32/</sup> and the equity IRR is found to be 9.21%. Hence, the proposed project is still additional.

**10. Debt/Equity Ratio:**

The Project Participant has adopted this as 70:30 as per page 37 of the GERC tariff order No. 1 of 2010, dated 30/01/2010<sup>/32/</sup>. It can be established that 70:30 is the official data definitely known at the time of decision and hence no ambiguity anticipated.

Further, it is opinion of the assessment team based on its sectoral expertise and relevant experience in the host country that 70/30 Debt-Equity ratio is the standard practice followed in the power sector investments in

the india and the same is evident from the government tariff determination regulations (i.e GERC tariff order for wind projects dated 30/01/2010<sup>19,2/</sup> other registered power projects from the host country India.

Further, the GERC notes that the Government of India has set a norm of 70:30 for financing various power sector projects. Major financial institutions, including IREDA, generally adhere to this norm. In view of this position; the Commission has decided to use a debt equity ratio of 70:30 for determination of tariff for purchase of energy by utilities from wind energy projects. The debt/equity ratio is also in conformance with paragraph 18 of EB 62 Annex 05.

Thus, the ratio as considered by the PP is found appropriately.

**11. Assessment Period:**

The assessment period for evaluating the financials is twenty years, evaluated throughout the estimated lifetime of the project activity WTGs and same is found in line with para 3 of EB 62 Annex 5. Further, a fair value of 10% of plant and machinery cost which represents potential profit have been considered at the end of assessment period and therefore it conforms to guidance 4 of Annex 5, EB 62. Therefore, the validation team considers the salvage value as correct and appropriate. Hence, validation team considers this assumption to be appropriate.

The validation team has validated the timing of investment decision by the respective project developers and the consistency and appropriateness of the input values with the timing of the investment decision. The validation team hereby confirms that the project cost and O & M cost considered are as indicated in the offer letter from technology suppliers which were applicable at the time of investment decision. The validation team has also verified that the tax and depreciation rates, GBI etc. used by the respective project developers and are considered being those applicable at the time of investment decision. The listed input values from the offer given by the technology supplier, as presented in section B.5 of the PDD, have been consistently applied in the financial calculations.

The Equity IRR was computed for a period of 20 years, which reflects the period of expected operation of the underlying project activity (technical lifetime) and hence was found to be appropriate.

The validation team confirmed the appropriateness of the technical lifetime of the project activity through details mentioned in Suzlon WTG model- S88/1250 (<http://www.suzlon.com/products/l2.aspx?l1=2&l2=9>)<sup>23/</sup> and considers the lifetime of the project activity of 20 years as reasonable.

The detailed equity IRR calculations are presented in the excel spreadsheet<sup>3.1/</sup>. The equity IRR and benchmark for the current project activity is indicated in the below table:

Name of Project Participant	Financial Indicator	Benchmark
M/s Mytrah Energy (India) Limited (MEIL)	Equity IRR: 7.65%	Return on Equity (RoE): 15.59%

The validation team has cross verified the validity of the input values and the financial analysis and confirmed that the benchmark used for the project is deemed appropriate to the type of financial indicator used for comparison.

The financial expert validated the correctness and authenticity of the data used for the calculation of return on equity based on CAPM and found them to be correct and publicly available. This is also in line with the guidelines for benchmark selection stipulated in EB 62 Annex 5 and hence the validation team has accepted the same. The validation team therefore concluded that the benchmark adopted by the PP to establish the investment barrier and consequently the project's additionality, is correct and valid.

In the equity IRR excel sheet, in the calculation of equity IRR, 100% investment cost is considered as the total cash outflow and is in accordance with the para 10 of the guidelines of the investment analysis.

The financial expert engaged in the project activity along with the validation team verified the IRR calculations for the entire bundled project capacity of 7.30 MW and observed them to be correct. The input values are as per para 111 of VVM version 1.2 and in line with EB 62 Annex 5.

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

**Sensitivity Analysis:**

To strengthen the financial analysis, sensitivity analysis has been carried out on key factors i.e. Project capital cost, PLF, O&M Cost and Tariff as per para 20 of Annex 5 EB 62 that may impact the performance of the project activity are considered for sensitivity analyses. These parameters are varied by a range of 10% and the resultant equity IRR was found to be within the benchmark levels and the calculations have been duly verified by the internal independent financial expert.

The sensitivity analysis shows that the equity IRR does not exceed the respective benchmark even after considering a 10% increase in PLF and decrease in project cost and O & M cost. Hence additional support through CDM registration is required for the project and based on the financial discussions, it is evident that the project faces significant barriers and is additional.

The validation team therefore confirms that the project and equity IRR for the project activity without CDM revenue and even with sensitivity analysis, does not cross the benchmark.

Thus, as per VVM 108(c), the financial returns of the proposed CDM project activity would be insufficient to justify the required investment and it is observed that even with the benefits of CDM the project is not a favorable option. Hence, the project is concluded to be strongly additional and CDM revenue is considered imperative to bridge the gap between the IRR and the benchmark.

The results of the sensitivity analysis are discussed below.

**(a) Project cost: -**

The sensitivity analysis has been carried out for a 10% variation in the total project cost. The sensitivity analysis reflects that, if there is a decrease in the total project cost by 10%, the equity IRR becomes 11.44%.

In light with the analysis presented above, it was found that the capital cost per MW considered for the project activity is within the range of state specific per MW cost of registered projects in the Gujarat. Thus, it is appropriate and acceptable.

The Project Participant anticipated variation that may take place thus sensitivity analysis has been conducted to an extent of +/- 10% in line with the "Guidelines on the assessment of investment analysis" version 05 (EB 62 Annex 05)<sup>9.3/</sup>. The outcome of sensitivity analysis for project cost summarized below:

Location	% Variation in Project cost (Equity IRR)		
	-10%	0%	10%
Gujarat	11.44%	7.65%	4.82%

It is confirmed that even after 10% reduction in project cost the equity IRR doesn't cross the benchmark of 15.59 %.

Validation team has also validated threshold limit of project cost decrease at which equity IRR crosses benchmark and results summarized below:

Project Location	Threshold limit at which IRR crossing benchmark	Actual decrease in project cost as verified through purchase orders <sup>16/</sup>

Gujarat	-17.89%	-7.33%
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Reduction of the project cost by more than that verified from purchase orders<sup>14/</sup> 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 and It is further checked that based on the project cost as validated form the purchase order<sup>14/</sup>, the equity IRR of the proposed project is 10.30% which is less than the benchmark, thus found acceptable to the validation team.

**(b) PLF: -**

The project participant has also conducted sensitivity analysis for PLF to an extent of +/- 10% in line with the guidance on the assessment of investment analysis (EB62, annex 5)

Location	PLF Variation		
	-10%	0%	10%
Gujarat	4.18%	7.65%	11.32%

It is note that equity IRR crosses the benchmark (15.59%) if PLF for proposed project activity at Gujarat increases by 20.59% (the resultant value of PLF is 27.68%) but the PLF considered for this site is already at higher side.

Validation team has also validated threshold limit of PLF increase at which equity IRR crosses benchmark and results summarized below:

Location	Threshold limit at which equity IRR crossing benchmark	Validation Opinion
Gujarat	27.68%	<p>If increases PLF by 20.59% then effective PLF would arrive as 27.68% this is highly unlikely. Detailed explanation provided below:</p> <p>1. GERC order No. 1 2010, dated 30/01/2010<sup>32/</sup>(Latest available at the time of investment decision) reveals that maximum achievable PLF in Gujarat is only 23%, hence this scenario is not likely.</p> <p>Further, during the validation process it is checked form the latest available tariff order for Wind power projects in Gujarat and confirmed that GERC Order No. 2 of 2012 dated 08/08/2012<sup>32/</sup> mentions that the “<i>Commission decides to specify a normative CUF of 24% for determination of tariff during the new control period starting from 11 August 2012</i>”.</p> <p>The GERC has examined the actual capacity utilization (CUF) achieved by the wind power projects installed during FY 2009-10 and FY 2010-11 in the Gujarat and after thorough examination of the energy generation only have decides a normative PLF of 24% for determination of tariff.</p> <p>2. Based on the actual annual energy generation records for the period from November 2011 to October 2012, as verified from the energy generation certificates i.e. Certificate of Share of electricity generated by wind farm at Bhojapuri (Mahidad) for the period from November 2011 to October 2012 issued by GETCO. the actual</p>

	annual PLF achieved at the project site is confirmed as 23.87%.
	Thus, based on the above discussions, it is highly unlikely to achieve a PLF of 27.68%.

**(c) O & M cost: -**

Anticipating the expected variation in O&M cost the Project Participant has also conducted sensitivity analysis for O&M cost to an extent of  $\pm 10\%$  in line with the Guidelines on the assessment of the investment analysis (EB62, annex05)<sup>/25/</sup>. It is noticeable from the analysis that equity IRR does not cross the benchmark of 15.59 % for proposed project activity.

Location	% Variation in O&M cost			On actual O & M agreement
	-10%	0%	10%	
Equity IRR Gujarat	8.15	7.65	7.15	8.70%

The validation team also cross checked the operation and maintenance cost referring to other CDM registered projects as discussed above in similar sector whose data is publically available and comparable to proposed project activity.

Validation team has also validated threshold limit of O&M cost decrease at which equity IRR crosses benchmark and results summarized below:

Location	Threshold limit at which IRR crossing benchmark
Gujarat	-183 %

It is verified through actual O & M agreement<sup>/14/</sup> that the actual O&M cost for the proposed project activity (12x2.1 MW) is 18.90 million INR from 3<sup>rd</sup> year onwards with an annual escalation of 5 % and same will be free for the first 2 years of operation. Thus, the O& M cost is remain almost same as considered at the time of decision making; hence the scenarios mentioned in the above table are not likely to occur.

**(d) Tariff rate**

The project participant has also conducted sensitivity analysis for Tariff to an extent of +/- 10% in line with the guidance on the assessment of investment analysis (EB62, annex 5)

Location	% Variation in Tariff		
	-10%	0%	10%
Equity IRR- Gujarat	3.01	7.65%	12.25

It is noted that equity IRR only crosses benchmark (15.59%) if tariff for the proposed project activity increases by 17.23%.

It is worthwhile to note that the tariff considered is INR 3.56/kWh as per the GERC tariff order dated 30/01/2010<sup>/32/</sup>, which was available at the time of investment decision and the validation team has cross-checked the electricity tariff applicable for the project activity against the power purchase agreement signed on 03/08/2011 with GUVNL<sup>/15/</sup>. Thus the considered tariff of 3.56 INR/kWh is appropriate for the project activity; hence any increase in tariff rate during crediting period is apparently unlikely.

Validation team has also validated threshold limit of tariff increase at which equity IRR crosses benchmark and results summarized below:

Location	Threshold limit at which equity IRR crossing benchmark	Validation Opinion
Gujarat	17.23%	This is absolutely unlikely as the long term PPA is already signed <sup>15/</sup> . Detailed explanation provided above.

Considering the above discussion, the equity IRR is very conservatively calculated and it is highly unlikely that the equity IRR may cross the benchmark due to a possible variation in the input parameters. Thus, it has been clearly demonstrated through the sensitivity analysis that the proposed CDM project activity is not financially attractive and hence, it is found additional. The financial spreadsheet<sup>3.1/4.1/</sup> has been checked and verified by the assessment team including the Financial expert as well as by the Sectoral expert and was found to be satisfactory. Hence, it was concluded by the assessment team that the project is financially unattractive and hence, project is **Additional**.

#### Discussion of CARs/CLs

**CL 08 (#01)** was raised to justify how the PLF considered for the investment analysis as per EB 48 Annex 11 and as per paragraph 6 of EB 62 annex 5. In response the PP has clarified that the PLF of 22.95% is assumed based on the third party determination contracted by the project participant prior to the investment decision. This is found in conformance with EB 48 Annex 11. It is checked based on the verification of the document that, PLF is based on third party estimation i.e. "25.2MW Gujarat Wind Farm Wind Resource and Energy Yield Assessment" performed by Parsons Brinckerhoff I India Pvt. Limited. Estimation of PLF by third party organization confirms the guidelines for the reporting and validation of Plant Load Factors. Further validation team has checked the Tariff Order issued by state of Gujarat (available at the time of investment decision) which shows the PLF value of 23%. The sensitivity analysis shows that the benchmark will be crossed if the PLF increases by 28% (PLF=29.37%). It is most likely that this won't happen as this on one hand is one of the highest PLFs in this region as checked from the published records. Thus the value applied is deemed as reasonable and acceptable and found in line with EB 48 Annex 11 and as per paragraph 6 of EB 62 annex 5. Hence, **CL08 (#01) is closed**.

**CL 08 (#02)** was raised to submit the documentary evidence in support of conceptualizing the project based on GBI incentive. In response, the PP has submitted the Letter of Intent dated 24/09/2010 from IDFC for financial assistance clearly mentions that GBI has been considered in the loan processing and the same is further confirmed from the Letter from IREDA Limited dated 21/11/2011 regarding registration of proposed wind farm for availing Generation Based Incentives (GBI) and allotment of unique identification no. to WTGs by IREDA. Hence, based on the submitted documentary evidences, the **CL08 (#02) is closed**.

**CL 08 (#03)** was raised to substantiate the considered interest rate, Moratorium, disbursement Schedule, repayment schedule and availability of such information at the time of decision making in line with Para 16 of EB62 Annex5 and Para 6 of EB62 Annex 5. In response, the PP has included the verifiable sources in the investment analysis spreadsheet. All the web link of the sources are checked by the validation team and found correctly used in the investment analysis and all the references of the input parameters are found in conformance with Para 16 of EB62 Annex5 and Para 6 of EB62 Annex 5. Hence, the **CL08 (#03) is closed**.

**CL 08 (#04)** was raised to explain and substantiate the considered Land cost and Land lease chargers in the investment analysis as per Para 111a of VVM. ver 1.2. In response, the PP has justify that the land cost and the land lease has been removed from the revised financial sheet and the depreciation of asset life has been made as per the GERC tariff order which is found appropriate. Also, validation team has checked the project capital cost and confirmed that the capital cost sourced from the quotation by Suzlon Energy Limited does not includes the Land cost and Land lease chargers. Hence, the **CL08 (#04) is closed**.

**CL 08 (#05)** was raised to justify the considered residual value in investment analysis as per Para 4 of EB62 annex 5. In response, the PP has justified that the considered residual value for the project is 10% of plant

and machinery cost based on GERC tariff order dated 2010. The land for the project activity has been taken under lease and hence not added as part of salvage value at the last year. This is in conformance with para 4 of EB 62 annex 5. Hence, the **CL 08(#05) is closed.**

**CL 08 (#06)** was raised to justify why the tax benefit arising from allowed income tax depreciation has not been considered in Equity IRR calculation as per 111(d) of VVMver1.2. In response, the PP has clarified that the core business for the PP is wind power project only and hence the loss arising out of this project cannot be offset as the PP is not involved in other business. The information is validated based on Balance sheet of FY 2010-2011, dated 31 March 2011, it is confirmed that the core business for the Mytrah Energy (India) Limited (MEIL) is wind power project and hence the loss arising out of this project cannot be offset as the PP is not involved in other business. The PP has included the tax holiday for ten consecutive years out of fifteen years as per Section 80IA of Income Tax act. The validation team validated the assumptions as above and observed that they are correct. The financial expert also verified the IRR calculations and observed them to be correct. The input values are as per para 110 of VVM ver 1.2 and in line with Guidelines on the Assessment of Investment Analysis (EB 62 Annex 5). Hence, the **CL 08(#06) is closed.**

**CAR 12** was raised on the assessment of benchmark calculation sheet:

**CAR 12 (#01)** was raised to justify the risk free rate in the decision making context. In response, the PP has revised the used risk free rate in conformance with para 5 of EB 62 Annex 05. The yield to maturity of the government securities data for term of maturity of 20 years published on 12/10/2010 has been used. Validation team confirms that the returns on Central Government securities as verified from the official website of the Reserve Bank of India are appropriate and the source is found to be latest available at the time of investment decision. Thus found in conformance with the para 06 of EB 62 Annex 05. Hence, **CAR 12 (#01) is closed.**

**CAR 12 (#02)** was raised to justify the choice of index to calculate return on equity and time period considered to calculate the same. In the final PDD<sup>1.7/</sup>, the PP has also calculated the market return considering BSE 500, BSE 100 and BSE 200 index. Since the base year for BSE 500 is 01st February 1999 with an index value of 1000, the PP has considered the time period and the index values from the base year to arrive at market returns. However BSE 500 is available only for eleven years, hence, the PP has considered other indices viz., BSE 100, BSE 200 and BSE Sensex which are available for longer time period to arrive at the market return. Thus, the PP have used BSE 100, BSE 200 and BSE Sensex which is available for 20 years to calculate market return and conservative value among the three indices has been chosen as market return. The validation team has validated the data used for the calculation for the market return from the BSE (<http://beta.bseindia.com/indices/IndexArchiveData.aspx?expandable=3>). Hence the market return is been concluded to 16.58% which is CAGR of BSE SENSEX for the time period of twenty years till decision making time. The market return has been arrived based on compounded annual growth rate (CAGR) during this period. Market return works out to 16.58%. The assessment team is able to confirm that the vintage years used to calculate market return and consequently benchmark is appropriate and comparable with the investment horizon and project activity life time. Hence, **CAR 12 (#02) is closed.**

**CAR 12 (#03)** was raised to justify the rationale behind choice of companies to calculate beta. In response, the PP has justify that the companies i.e. Reliance Infra, Tata Power, NTPC, NLC, BF utilities, CESC, Jaiprakash Power, which are listed in BSE 500 and are listed for over five years have been considered for arriving at the benchmark. Which is found appropriate with consideration of five years of trading history data to be reasonable for beta estimates for the project activity which is also found in-line with the book "Corporate Finance Theory and Practice" written by Dr. Aswath Damodaran of Stern School of Business, New York University. Since this is a wind energy generation project, the risk estimate for the project is on the basis of beta values of all listed power generating companies in India. It is understood that risky businesses are likely to have higher cost of equity than safer businesses; projects in riskier businesses will have to cover these higher costs. Hence, investors demand a higher return from renewable energy projects than from conventional energy ones, given the higher risks in renewable, including risks of technology, risks from significantly varying and unpredictable resource availability (e.g. wind), and a lower established support base for such projects relative to that for conventional power (e.g. grid connections, bank finance, suppliers, etc.).

For this proposed CDM project activity, the beta values are calculated for 07 power generating companies in India which were listed on stock exchange at the time of conceptualization of the project activity with trading

history more than 5 years. The appropriateness of the same has been checked and confirmed with the financial expert involved in the project activity. This is found to be appropriate and it is accepted. Hence, **CAR 12 (#03) is closed.**

**CAR 14 (#03)** was raised to request the PP to include the information on the maturity period of the Risk free rate as the same was not transparently mentioned in section B.5 of the PDD, In response, the PP has submitted the revised PDD. The information on the maturity period of the Risk free rate is found transparently mentioned in section B.5 of the revised PDD, It is clearly mentioned that an average government bond rate (risk free rate) applicable at the time of investment decision for long term investment (for 20 years) has been considered. Verification team has found it appropriate as the Maturation period of 20 years (term of maturity) is found in-line with the life time of the project activity as twenty (20) years as per the expectations of investors for compensating the long term investments over the economic life of the asset. Hence, **CAR 14 (#03) is closed.**

**CAR 14 (#04)** was raised to ask include the justification of the considered index in the market return and Beta calculation. In response, the PP has submitted the revised PDD which includes the information on the chosen index for market return and Beta calculation. Independent assessment on the same is done by financial expert and considering conservative approach is found appropriate. For details, please refer closure of CAR 14 (#04) under Annex-03. Thus, **CAR 14 (#04) is closed.**

**Opinion:**

The PP has conducted the investment analysis in accordance with the relevant guidelines and the project activity opinion is that it would be financially unattractive without CDM revenue as compared to at least of it the alternative. The compliance with the relevant guidelines is depicted as below.

Guidelines on the Assessment of Investment analysis, version 05 EB62, Annex 5		
Para	Guidance	DOE Assessment and Opinion
3	The period of assessment should not be limited to the proposed crediting period of the CDM project activity. Both project IRR and equity IRR calculations shall as a preference reflect the period of expected operation of the underlying project activity (technical lifetime), or - if a shorter period is chosen - include the fair value of the project activity assets at the end of the assessment period. In general a minimum period of 10 years and a maximum of 20 years will be appropriate. The IRR calculation may include the cost of major maintenance and/or rehabilitation if these are expected to be incurred during the period of assessment. Project Participants are requested to justify and DOEs are requested to validate the appropriateness of the period of assessment in the context of the underlying project activity, without reference to the proposed CDM crediting period.	The Project activity financial analysis has been performed over the period of 20 years, which is the lifetime as provided by the technology & equipments supplier and thus is justified.  The requirement of the Para has been met.
4	The fair value of any project activity assets at the end of the assessment period should be included as a cash inflow in the final year. The fair value should be calculated in accordance with local accounting regulations where available, or international best practice. It is expected that such fair value calculations will include both the book value of the asset and the reasonable expectation of the potential profit or loss on the realization of the assets.	The fair value of the asset is considered by the PP in accordance with the Para. The book value of the asset in accordance with the Indian Income tax laws comes to 5% at the end of lifetime of the project. The PP has considered the 10% of the project cost as fair value considering the book value as well as expectation profit or loss on the realization of the assets which is found in line with the applicable GERC tariff order <sup>/32/</sup> .

		<p>The same is added back to the last year cash flow in the IRR calculation and thus is conservative approach.</p> <p>The requirement of the Para has been met.</p>
5	<p>Depreciation, and other non-cash items related to the project activity, which have been deducted in estimating gross profits on which tax is calculated, should be added back to net profits for the purpose of calculating the financial indicator (e.g. IRR, NPV). Taxation should only be included as an expense in the IRR/NPV calculation in cases where the benchmark or other financial indicator is intended for post-tax comparisons.</p>	<p>The PP has added back the depreciation while calculating the net profit in the analysis and further the tax is considered only as an expense while calculating the IRR.</p> <p>The requirement of the Para has been met.</p>
6	<p>Input values used in all investment analysis should be valid and applicable at the time of the investment decision taken by the Project Participant. The DOE is therefore expected to validate the timing of the investment decision and the consistency and appropriateness of the input values with this timing. The DOE should also validate that the listed input values have been consistently applied in all calculations.</p>	<p>As discussed in the section above, all the input parameters as considered by the PP were available and applicable at the time of investment decision and are validated with regards to the same.</p> <p>The requirement of the Para has been met.</p>
7	<p>In the case of project activities for which implementation ceases after the commencement and where implementation is recommenced due to consideration of the CDM the investment analysis should reflect the economic decision making context at point of the decision to recommence the project. Therefore capital costs incurred prior to the revised project activity start date can be reflected as the recoverable value of the assets, which are limited to the potential reuse/resale of tangible assets.</p>	<p>The Para is not applicable to the proposed project activity being new installation and it is not the case of the recommencement.</p>
8	<p>Project Participants should supply spreadsheet versions of all investment analysis. All formulas used in this analysis be readable and all relevant cells be viewable and unprotected. The spreadsheet will be made available to the Executive Board, UNFCCC secretariat and others contracted to assess the request for registration on behalf of the Board including assigned members of the Registration and Issuance Team. In cases where the Project Participant does not wish to make such a spreadsheet available to the public an exact read-only or PDF copy shall be provided for general publication. In case the PP wishes to black-out certain elements of the publicly available version, a clear justification for this shall be provided to the UNFCCC secretariat by the DOE when requesting registration.</p>	<p>The financial analysis sheets for IRR and Benchmark calculation as submitted by the PP and being submitted to the UNFCCC are readable, viewable and in unprotected format. There is no confidential content kept in the financial sheets and user can use and reproduce the results in the provided sheets to check the accuracy of the calculations.</p> <p>The requirement of the Para has been met.</p>
9	<p>The cost of financing expenditures (i.e. loan repayments and interest) should not be included in the calculation of project IRR.</p>	<p>The PP has chosen the equity IRR for the project activity financial indicator and thus Para is not applicable.</p>
10	<p>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, the portion of</p>	<p>The PP has considered only the portion of investment cost as financed by the equity in the net cash outflow for the equity IRR</p>

	the investment costs which is financed by debt should not be considered a cash outflow.	calculation. The requirement of the Para has been met.
11	Due to the impact of loan interest on income tax calculations it is recommended that when a project IRR is calculated to demonstrate additionality a pre-tax benchmark be applied. In cases where a post-tax benchmark is applied the DOE shall ensure that actual interest payable is taken into account in the calculation of income tax.	The PP has chosen the equity IRR for the project activity financial indicator and thus Para is not applicable.
12	In cases where a benchmark approach is used the applied benchmark shall be appropriate to the type of IRR calculated. Local commercial lending rates or weighted average costs of capital (WACC) are appropriate benchmarks for a project IRR. Required/expected returns on equity are appropriate benchmarks for equity IRR. Benchmarks supplied by relevant national authorities are also appropriate if the DOE can validate that they are applicable to the project activity and the type of IRR calculation presented.	As demonstrated the PP has chosen the required/expected returns on equity as a benchmark and compared with the equity IRR, which is appropriate approach. The requirement of the Para has been met.
13	In the cases of projects which 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 DOE's validation of the benchmark shall also include its opinion on whether a company-specific benchmark or a benchmark based on parameters that are standard in the market is suitable in the context of the underlying project activity.	The proposed project activity can be developed by the other developers also and thus, the PP has calculated the benchmark as return on equity based on the parameters those are standard in market and publically available to all. The requirement of the Para has been met.
14	Internal company benchmarks/expected returns (including those used as the expected return on equity in the calculation of a weighted average cost of capital - WACC), should only be applied in cases where there is only one possible project developer and should be demonstrated to have been used for similar projects with similar risks, developed by the same company or, if the company is brand new, would have been used for similar projects in the same sector in the country/region. This shall require as a minimum clear evidence of the resolution by the company's Board and/or shareholders and will require the validating DOE to undertake a thorough assessment of the financial statements of the project developer - including the proposed WACC - to assess the past financial behaviour of the entity during at least the last 3 years in relation to similar projects.	The PP has not used the internal company benchmark and thus the Para is not applicable to the project activity.
15	If the benchmark is based on parameters that are standard in the market, the cost of equity should be determined either by: (a) selecting the values provided in Appendix A; or by (b) calculating the cost of equity using best financial practices, based on data sources which can be clearly validated by the DOE, while properly justifying all underlying factors. The values in the table in Appendix A may also be used, as a simple default option, if a	The benchmark as calculated by the PP is based on the parameters which are standard in the market and independently validated by the validation team. The PP has selected the option (b) calculating the cost of equity using best financial practices in the analysis as the guidelines under option (a) was not available at the time of

	<p>company internal benchmark is used.</p>	<p>investment decision.</p> <p>Further, the assessment team has cross checked the cost of equity as considered by the PP with values provided under Appendix A for the host country and the PP has considered the comparably conservative value.</p> <p>The requirement of the Para has been met.</p>
<p>16</p>	<p>If a company's internal benchmark is used for the expected return on equity, the cost of debt should be based on the weighted average cost of debt financing of the legal entity owning the CDM project activity. For loans, use the weighted average cost of outstanding long-term debt. For bonds, use the weighted average yield of the bonds during the last three months prior to the submission of the CDM-PDD for validation or prior to the investment decision, whichever is earlier. The use of bonds to determine the cost of debt is only appropriate for corporate bonds issued in the host country of the CDM project. In cases where the debt finance structure of the project is not yet available (e.g. a letter of intent for debt funding is not available), the cost of debt can be assumed as the commercial lending rate in the country or the yield of a 10 year bond issued by the government of the host country or, if this is not available, the bond with the maturity which is closest to 10 years. The following should be documented in the CDM-PDD: (a) for bonds: the key parameters of the bond including the time of maturity, yield, registration issuance in the financial system and set-up in the market; (b) for loans from a financial institution: the contract of lending between the financial institution and the legal entity owning the assets of the project activity, or, in absence of the contract, a letter from the bank stating its intention to award the loan and the key terms for the loan; (c) for debt financing from a parent company: the transfer of capital to the legal entity, documented with the contract of lending between the parent company and the legal entity owning the assets of the project activity and/or the parameters of the corporate bonds as mentioned above. This latter option is only valid for corporate bonds issued in the host country of the CDM project activity. If the benchmark is based on parameters that are standard in the market, the cost of debt should be calculated as the cost of financing in the capital markets (e.g. commercial lending rates and guarantees required for the country and the type of project activity concerned), based on documented evidence from financial institutions with regard to the cost of debt financing of comparable projects. In cases where this data is not available, use the commercial lending rate in the host country to calculate the cost of debt.</p>	<p>The company's internal benchmark has not been used. Hence, this Para is not applicable.</p>

17	<p>If a company's internal benchmark is used for the expected return on equity, then the percentage of debt financing and equity financing should reflect the long-term debt/equity finance structure of the legal entity owning the assets of the project activity. The percentage should be determined based on the latest balance sheet provided under local fiscal/accounting standards and rules if: (a) the legal entity owning the assets of the project activity has balance sheets audited by a third party within two years prior to the submission of the CDM-PDD for validation; and (b) the accounting books of the legal entity reflect at least the total value of all the assets needed for the project activity. If the debt/equity finance structure is not yet available, 50% debt and 50% equity financing may be assumed as a default.</p>	<p>The Para is not applicable to the project activity as no internal benchmark is used by the PP.</p>
18	<p>If the benchmark is based on parameters that are standard in the market, then the typical debt/equity finance structure observed in the sector of the country should be used. If such information is not readily available, 50% debt and 50% equity financing may be assumed as a default.</p>	<p>The PP has used the typical Debt/equity ratio observed in the power sector in the host country in line with applicable the GERC tariff order<sup>32/</sup>.</p>
19	<p>If the proposed baseline scenario leaves the Project Participant no other choice than to make an investment to supply the same (or substitute) products or services, a benchmark analysis is not appropriate and an investment comparison analysis shall be used. If the alternative to the project activity is the supply of electricity from a grid this is not to be considered an investment and a benchmark approach is considered appropriate.</p>	<p>The proposed project activity is not a must investment and proposed baseline scenario does not leave the no other choice than to make an investment. Thus, the PP has correctly chosen the benchmark analysis for the project activity.</p> <p>The requirement of the Para is met.</p>
20	<p>Only variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues should be subjected to reasonable variation (all parameters varied need not necessarily be subjected to both negative and positive variations of the same magnitude), and the results of this variation should be presented in the PDD and be reproducible in the associated spreadsheets. Where a DOE considers that a variable which constitute less than 20% has a material impact on the analysis they shall raise a corrective action request to include this variable in the sensitivity analysis.</p>	<p>The PP has correctly considered all the parameters which can have significant impact on IRR calculation and parameters those constitute more than 20% of the project in the sensitivity analysis. The PP has provided the results for the analysis for <math>\pm 10\%</math> and the same are found appropriate.</p> <p>The requirement of the Para is met.</p>
21	<p>The DOE should assess in detail whether the range of variations is reasonable in the project context. Past trends may be a guide to determine the reasonable range. As a general point of departure variations in the sensitivity analysis should at least cover a range of +10% and -10%, unless this is not deemed appropriate in the context of the specific project circumstances. In cases where a scenario will result in the project activity passing the benchmark or becoming the most financially attractive alternative the DOE shall provide an assessment of the probability of the occurrence of</p>	<p>The PP has provided the analysis with <math>\pm 10\%</math>. However, the DOE has analyzed the possible scenario for each parameter that makes equity IRR to cross the benchmark. None of these scenarios seemed realistic to happen and same is described in upper section of this report.</p> <p>The requirement of the Para is met.</p>

	<p>this scenario in comparison to the likelihood of the assumptions in the presented investment analysis, taking into consideration correlations between the variables as well as the specific socio-economic and policy context of the project activity.</p>	
<p><b>Validation and verification Manual, version 01.2</b></p>		
<p><b>Requirements to be validated for Investment analysis in additionality demonstration</b></p>	<p><b>Means of validation conducted by the DOE and reporting of the same.</b></p>	
<p><b>Para 108:</b>          If investment analysis has been used to demonstrate the additionality of the proposed CDM project activity, the PDD shall provide evidence that the proposed CDM project activity would not be:          (a) The most economically or financially attractive alternative; or          (b) Economically or financially feasible, without the revenue from the sale of certified emission reductions (CERs).</p> <p><b>Para 109:</b> Project Participants can show this through one of the following approaches, by demonstrating that:          (a) The proposed CDM project activity would produce no financial or economic benefits other than CDM-related income. Document the costs associated with the proposed CDM project activity and the alternatives identified and demonstrate that there is at least one alternative which is less costly than the proposed CDM project activity;          (b) The proposed CDM project activity is less economically or financially attractive than at least one other credible and realistic alternative;          (c) The financial returns of the proposed CDM project activity would be insufficient to justify the required investment.</p> <p><b>Para 110:</b>          The DOE shall comply with the latest version of the. "Guidance on the Assessment of Investment Analysis" As provided by the CDM Executive Board and with other relevant guidance including the latest "guidelines on plant load factors .guidelines for the reporting and validation of plant load factors".</p> <p><b>Para 112,(a),(b) &amp; (c):</b>          To confirm the suitability of any benchmark applied in the investment analysis, the DOE shall:          (a) Determine whether the type of benchmark applied is suitable for the type of financial indicator presented;          (b) Ensure that any risk premiums applied in determining the benchmark reflect the risks associated with the project type or activity;          (c) Determine whether it is reasonable to assume that no investment would be made at a rate of return lower than the benchmark by, for example, assessing previous investment decisions by the project participants involved and determining whether the same benchmark has been applied or if there are verifiable circumstances that have led to a change in the benchmark</p>	<p>The Assessment team has conducted a thorough assessment of all input parameters and assumptions used in calculation of the Equity IRR calculation and the same are opinioned to be accurate and suitable based on availability at the time of investment decision.</p> <p>Further all the input parameters are cross checked using the available evidence like third-party or publicly available sources, such as government regulations (tariff orders), other registered projects of the region and other information available in the public domain wherever applicable.</p> <p>The assessment team including the financial expert involved in the team has checked the correctness of computations of the equity IRR as well as benchmark by the PP.</p> <p>The sensitivity analysis as presented by the PP is checked and found to be covering all the major input parameters, further the thresholds for these parameters have been checked when the IRR can cross the benchmark and the likelihood of occurrence of such scenarios are also validated.</p> <p>The PP has chosen the return of equity as benchmark and the same is suitable for the type of financial indicator presented;</p> <p>The risk premiums applied in determining the benchmark reflects the risks associated with the project type or activity and widely observed as same practice for other registered projects.</p> <p>Thus, the input parameters in financial calculation are clearly validated and described in details in the above section of the report, the benchmark has considered by the PP is valid and suitable for the project activity, underlying assumptions are appropriate and the financial calculations are correct for the project activity. The</p>	

	<p>investment analysis assessment is carried out in line with the latest version of the. "Guidance on the Assessment of Investment Analysis", version 05, EB62, Annex 5 and complies the requirement of using latest guidance.</p>
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#### 4.6.5 Barrier analysis

***The project activity has not applied the barrier analysis for the project activity. As per the "Tool for the demonstration and assessment of additionality"<sup>9.5/</sup> version 06.0.0, the PP has selected the investment analysis and common practice analysis has been carried out to demonstrate additionality. There is not any requirement to apply the barrier analysis. Same is checked by the assessment team and found correct.***

#### 4.6.6 Common practice analysis

The Project Participant has carried out the common practice analysis for the project activity to demonstrate the additionality of project activity. The project participant has carried out the common practice analysis as per the "guideline on common practice" Version 02 published in EB 69 Annex 08<sup>9.7/</sup> as mentioned below:

1. The applicable geographical area to demonstrate the common practice analysis has been considered as the entire Host Country (India). This is in line with paragraph 01 of EB 69 Annex 08.
2. The measure for the project activity is considered as Switch of technology with or without change of energy source including energy efficiency improvement as well as use of renewable energies. This is in line with paragraph 2(b) of EB 69 Annex 08.
3. The electric power is considered as output (goods or services with comparable quality) of project activity. This is in line with paragraph 3 of EB 69 Annex 08.
4. The proposed project activity uses wind energy for the generation of power and hence as per the paragraph 4(a) of EB 69 Annex 08, the technology which use energy source/ fuel other than wind i.e. energy generation by different energy sources or the technologies uses different type of fuels other than wind energy will be considered as the different technology.

In line with section II of EB 69 Annex 08, stepwise approach for common practice analysis is followed as described below:

#### **Step 1 Calculate applicable output range as +/-50% of the design output or capacity of the proposed project activity**

As the total installed capacity of the project activity is 25.20 MW. Thus, +/- 50 % of the designed range would 12.6 MW to 37.8 MW. This has been checked by the assessment team and found correct.

#### **Step 2: identify similar projects (both CDM and non-CDM) which fulfil all of the following conditions:**

- a. The projects are located in the applicable geographical area
- b. The projects apply the same measure as the proposed project activity
- c. The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity
- d. The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas (e.g. clinker) as the proposed project plant

- e. The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1
- f. The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity

As outlined in the definition above the 'electric power' is considered as 'output'. Hence, all the technologies in the host country which delivers electric power within the applicable output range (i.e. 12.6 MW to 37.8 MW) and have started commercial operation before the **start date of the project** (18/01/2011 as the date of webhosting of the proposed PDD for global stakeholder consultation process is 24/02/2012, which is later than the project start date) and after the enforcement of the major electricity reform in India (**The Electricity Act 2003**) are considered for the assessment.

The Indian government has enacted the Electricity Act, 2003 which seeks a paradigm shift in India. The Electricity Act, 2003 (enforced in 10 June 2003) mandates licensee-free thermal generation, non-discriminatory open access of the transmission system and gradual implementation of open access in the distribution system which will pave way for creation of power market in India. This Act is aimed at providing an investor friendly environment for potential developers in the power sector by removing administrative hurdles in the development of power projects and shall provide impetus to distribution reform to be undertaken in India. Provisions like de-licensing of thermal generation, open access and multiple licensing; no surcharge for captive generation shall be the basis for a competitive environment in the Indian power sector. Provisions of open access would be instrumental in the development of competitive power markets, and multiyear tariffs shall bring in necessary incentives for performance improvement and to reduce regulatory risk<sup>45/</sup>. On the whole, the Electricity Act 2003 is expected to usher a new era in the Indian power sector. Thus, in India, power sale tariff and power purchase agreements for all states are based upon the guidelines of this Act only. Accordingly, PP has considered all prospective project developers since June 2003 (i.e., State-wise power sale tariff orders) during taking investment decision. As discussed above, the open access and multiple licensing options were not available to project owners prior to 2003 and hence, in accordance with the EB 69 Annex 08 (Para 4(d)), it is considered that power projects installed after June 2003 have a "similar regulatory frameworks and investment climate". Thus, all power plants in the applicable output range of 12.6 MW to 37.8 MW effectively commercialized between 10/06/2003 (date of enforcement of the Electricity Act 2003) and start date of the project (18/01/2011) in India are as mentioned below:

**Wind:** Projects commissioned before the start date of the project activity within the applicable capacity range have been taken from "Directory, Indian Wind power 2011" Complied & Published by "Consolidated Energy Consultants Ltd". The CDM registered projects and projects under validation have been identified from the UNFCCC<sup>20/</sup> site <http://cdm.unfccc.int/Projects/projsearch.html>.

**Hydro:** Projects commissioned before the start date of the project activity within the applicable capacity range have been taken from "Baseline carbon dioxide Emission database, Version-07" published by "Central Electricity Authority (CEA), Ministry of power, Government of India". It is noted that CEA "Baseline carbon dioxide Emission database, Version-07 provides the information about the hydro projects started commercial operation before the start date of the project.

The list published by CEA<sup>20/</sup> does not include CDM registered Projects. The projects under validation are identified from the UNFCCC<sup>20/</sup> site <http://cdm.unfccc.int/Projects/projsearch.html>.

**Thermal:** Projects commissioned before the start date of the project activity within the applicable capacity range have been taken from "Baseline carbon dioxide Emission database, Version-07" published by "Central Electricity Authority (CEA)<sup>20/</sup>, Ministry of power, Government of India". It is noted that CEA "Baseline carbon dioxide Emission database, Version-07 provides the information about the Thermal projects started commercial operation before the start date of the project. Thus total 07 projects are identified in this category.

The list published by CEA does not include CDM registered Projects. The projects under validation are identified from the UNFCCC<sup>20/</sup> site <http://cdm.unfccc.int/Projects/projsearch.html>

**Nuclear:** Projects commissioned before the start date of the project activity within the applicable capacity range have been taken from “Baseline carbon dioxide Emission database, Version-07” published by “Central Electricity Authority (CEA)<sup>/20/</sup>, Ministry of power, Government of India”. It is noted that CEA “Baseline carbon dioxide Emission database, Version-07” provides the information about the Nuclear projects started commercial operation before the start date of the project.

The list published by CEA does not include CDM registered Projects. No projects identified within the applicable capacity range commissioned before the project start date<sup>/22/</sup>.  
[http://www.cea.nic.in/reports/planning/cdm\\_co2/cdm\\_co2.htm](http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm)

**Solar:** Projects commissioned before the start date of the project activity within the applicable capacity range have been taken from “MW scale Solar Power plants commissioned in India” published by Ministry of New and Renewable Energy, Government of India<sup>/20/</sup>. No solar projects commissioned before project start date in the applicable capacity range.

**Biomass:** the PP has listed the biomass projects from the Renewable Energy Corporation website of each and every state of India. Many of the renewable energy corporation sites do not contain a proper list of biomass projects along with their installed capacities. Hence, the PP has considered only those projects for which proper data is available in public domain, which is acceptable as there is no capacity specific information's are available in consolidated form at state level or at country level. Thus, as per the publically available information, there are six (06) projects identified in Maharashtra, Rajasthan and Chhattisgarh state. One of the projects by Birla Corporation Limited which has a capacity of 15 MW and located in Maharashtra, has not been considered as it is a captive power plant and same is found appropriate as per Para 4(d) of EB 69 Annex 08.

Further, validation team has checked the projects commissioned before the start date of the project activity within the applicable capacity range from “Annual report-2010-11 of Ministry of New and Renewable energy, Government of India<sup>/20/</sup>”. Total number of biomass power generation projects is 130 till January 2011. There is no data available on individual unit size. The validation team has checked the results of analysis considering all biomass projects under applicable capacity range and confirmed that proposed project is still not a common practice in host country. Hence, on conservative grounds, validation team has accepted the approach.

**Tidal-Mechanical & Thermal:** Projects commissioned before the start date of the project activity within the applicable capacity range have been taken from “Wave and Tidal energy Report” published by Energy Alternatives India (EAI)<sup>/20/</sup>. No projects have been identified within applicable capacity range.  
<http://www.eai.in/ref/ae/oce/oce.html>

**Geothermal:** Projects commissioned before the start date of the project activity within the applicable capacity range have been taken from “India Geo-thermal energy” published by Energy Alternatives India (EAI)<sup>/22/</sup>. There is no operational geothermal plants in India and hence considered as “zero”.  
<http://www.eai.in/ref/ae/geo/geo.html>.

Further, as verified from the information available at Ministry of New and Renewable Energy, Government of India, it is found that power plant/technologies based on the biogas, MSW are not included in the list of either the grid connected power plants or Off grid power plants and further, validation team has not found any publically available consolidated list of biogas based power plant in India, hence same are not considered in the common practice analysis.

All the sources have been confirmed by the assessment team and found that all the projects considered to calculate the  $N_{all}$  having the start date prior to the start date of project activity and never applied for CDM.

**Step 3: within the projects identified in Step 2, identify those that are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation.**  
**Note their number  $N_{all}$**

For  $N_{all}$ . The list of technology and their number are presented below:

Technology Area <sup>/22/</sup>	Projects excluding CDM projects in applicable cap range, N(all)
Wind	02
Hydro	07
Thermal	07
Nuclear	0
Solar	0
Biomass	0
Tidal-Mechanical & Thermal	0
Geothermal	0
<b>N<sub>all</sub></b>	<b>16</b>

**Step 4: Within plants identified in Step 3, identify those that apply technologies different that the technology applied in the proposed project activity. Note their number N<sub>diff</sub>.**

All the different technology N<sub>diff</sub> has been identified as mentioned below the same is confirmed by the assessment team and found correct.

Technology Area	N <sub>diff</sub>	Remarks
Hydro	07	The technology which uses energy source/ fuel other than wind is considered as the different technology.
Thermal	07	The technology which uses energy source/ fuel other than wind is considered as the different technology.
Nuclear	0	The technology which uses energy source/ fuel other than wind is considered as the different technology.
Solar	0	The technology which uses energy source/ fuel other than wind is considered as the different technology.
Biomass	0	The technology which uses energy source/ fuel other than wind is considered as the different technology.
Tidal-Mechanical & Thermal	0	The technology which uses energy source/ fuel other than wind is considered as the different technology.
Geothermal	0	The technology which uses energy source/ fuel other than wind is considered as the different technology.
<b>N<sub>diff</sub></b>	<b>14</b>	

**Step 5: Calculate factor  $F=1-N_{diff}/N_{all}$  representing the share of plants using technology similar to the technology used in the proposed project activity in all plants that deliver the same output or capacity as the proposed project activity.**

As per the formula the Factor; F comes 0.125 and  $N_{all}-N_{diff}=2$  the calculation has been checked by the validation team and found correct.

The Factor; F is less than 0.2 and the  $N_{all}-N_{diff}$  is also less than 3. Thus, the proposed project activity is not a common practice within a sector in the applicable geographical area. Same is checked by the assessment team and found in line with the paragraph 10 of EB 69 Annex 08<sup>/9.8/</sup>.

## Discussion of CARs/CLs

**CAR 09** was raised to demonstrate “**Step 4: Common Practise analysis**” with verifiable evidences and also justify the chosen applicable geographical area in the common practice analysis. In response, the PP has submitted the revised PDD in which all the web links and sources provided in the section B.5 and the same have been checked by validation team. The Project Participant had analyzed all wind power projects in the state of Gujarat with capacity more than 15 MW sourced from Directory – Indian Wind power 2011 and UNFCCC. The information source for the common practice analysis is publicly available and checked by the validation team. The information used is evaluated to be credible. Further, in line with EB 69 Annex 08, The common practice analysis is revised in section B.5 of the PDD. Validation team has evaluated each steps of the EB 69 Annex 08 and validated the information provided by the PP based on the third party published evidences. Based on the same, it is found that the proposed project activity is not a common practice within a sector in the applicable geographical area. Same is checked by the assessment team and found in line with the para 10 of EB 69 Annex 08. Hence, **CAR 09 is closed**. For details, please refer to Annex-3 below.

### **4.7 Application of Baseline Methodology and Calculation of Emission Factors**

The project has applied baseline methodology as mentioned in the approved consolidated methodology ACM0002<sup>/8/</sup>, version 12.3.0. As per methodology, the baseline emission sources considered are CO<sub>2</sub> emissions from electricity generation in fossil fuel fired power plants that is displaced due to the project activity as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system” version 2.2.1<sup>/9.1/</sup>.

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<sup>/9.1/</sup>.

As per the identified baseline scenario of applied methodology ACM0002<sup>/8/</sup>, version 12.3.0 is applicable for the project activity, so the project participant 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 CO<sub>2</sub> emission factor are used for the purpose. Value has been used from the CEA data base version 07, which is published by the Ministry of Power, Government of India<sup>/34/</sup>. 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.

The Project Participant has clearly demonstrated the calculation of baseline emission factor in the final PDD<sup>/1.7/</sup>. The steps involves in the baseline emission factor calculation are:

#### **Step 1) Identifying the relevant electric systems**

As per CEA data base/version 07<sup>/34/</sup>, 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)**

The PP has not opted for this step. The 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 Participant 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 17.68% which is based on five most recent years (2006-2007 to 2010-2011). 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 07<sup>/34/</sup>.

With regards to data vintage, the project participant 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 the PP has done the calculation of the OM according to the Simple OM method which is calculated as the generation-weighted average CO<sub>2</sub> emissions per unit net electricity generation (tCO<sub>2</sub>/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: CO<sub>2</sub> Baseline Database, Version 07, which is the latest available official data at the time of submission of the 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 2008-09, 2009-10 and 2010-11) and will remain fixed throughout the crediting period.

The CO<sub>2</sub> emission factor for simple OM and build margin BM have been directly taken for CEA data base version 07 (calculation of OM and BM are based on latest version of “Tool to calculate the emission factor for an electricity system” is version 02.2.1) Hence, the approach is acceptable.

Year	2008-09	2009-10	2010-11
CO <sub>2</sub> emission factor for simple OM (tCO <sub>2</sub> /MWh) (incl. Imports)	1.0066	0.9777	0.9706
Net Electricity Generation in OM (GWh)	421802.63	458043.08	476986.72
Net Imports (GWh)	0	4284.01	0
<b>Generation weighted Operating Margin (OM) (tCO<sub>2</sub>/MWh)</b>	0.9842		

**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 CO<sub>2</sub> emission factor in build margin (BM) has been directly taken for CEA data base version 07 which excludes the CDM registered projects in the analysis (calculation of OM and BM are based on latest version

of “Tool to calculate the emission factor for an electricity system” is version 02.2.1). Hence, the approach is acceptable.

The build margin emission factor which has been calculated by the generation-weighted average emission factor (tCO<sub>2</sub>/MWh) of all power units during the most recent year for which power generation data is available and follows the calculation as per the applied tool.

Based on the CEA data base version 07, the value of BM (for the year 2010-11; most recent) works out **0.8588** tCO<sub>2</sub>/ MWh. Therefore,

$$BM = 0.8588 \text{ tCO}_2/\text{MWh}$$

**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<sub>grid,BM,y</sub> = Build margin CO<sub>2</sub> emission factor in year y (tCO<sub>2</sub>/MWh)
- EF<sub>grid,OM,y</sub> = Operating margin CO<sub>2</sub> emission factor in year y (tCO<sub>2</sub>/MWh)
- w<sub>OM</sub> = Weighting of operating margin emissions factor (%)
- w<sub>BM</sub> = 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:

$$\begin{aligned} EF &= w_{OM} * OM + w_{BM} * BM \\ &= 0.75 * 0.9842 + 0.25 * 0.8588 \\ &= \mathbf{0.9528} \text{ t CO}_2/\text{MWh} \end{aligned}$$

Corresponding calculations were carried out based on excel spreadsheets. The parameters and equations presented in Annex 3 of the PDD and further documentation have been compared with the information and requirements presented in the methodology and respective tools. The equation comparison has been made explicitly following all the formulae presented in the calculation records submitted by the Project Participant.

The calculation of the baseline emissions followed the procedures described in the methodology ACM0002 Version 12.3.0. The NEWNE grid and southern regional grid of India is considered to be the project boundary.

The operating margin emission factor (EF<sub>OM</sub>) was determined based on the simple OM method. The ex-ante option was chosen for this calculation. The CO<sub>2</sub> Baseline Database for the Indian Power Sector version 07<sup>/34/</sup> published in March 2012 was used to calculate combined margin emission factor and the assessment team confirms that it was the most recent data available at the start of the validation. Also values of OM and BM was referred from CEA CO<sub>2</sub> Baseline Database for the Indian Power Sector version 07<sup>/34/</sup> subsequently used for combined margin calculation.

Hence in line with paragraph 91 of VVM version 1.2<sup>7/</sup>, the assessment team is able to confirm that the data source is appropriate and calculations are correct, applicable to the proposed CDM project activity and will result in a conservative estimate of the emission reductions.

Validation team is in agreement to this emission factor since it is based on the official and publically available data published by CEA<sup>34/</sup>. The validation team further notes that the emission factor is not provided by host country DNA but by the competent authority.

Baseline emissions (**BE<sub>y</sub>**) – The combined margin emission factor, baseline emissions and emission reductions calculations have been mentioned in the emission reduction excel sheet<sup>2.1/</sup> and the final PDD<sup>1.7/</sup>. The baseline emissions equivalent to tCO<sub>2</sub> 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 ACM0002 Version 12.3.0 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 ACM0002 Version 12.3.0. 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 48273 tCO<sub>2</sub>e per annum.

Project emissions (**PE<sub>y</sub>**) – The project activity involves the generation of electricity using wind energy. Hence, there are no project emissions associated with this project activity as per ACM0002 Version 12.3.0.

Leakage (**LE<sub>y</sub>**) – Leakage has not been considered for the project activity in line with ACM0002 Version 12.3.0.

Emission Reductions (**ER<sub>y</sub>**) – The emission reductions for the project activity have been calculated as per ACM0002 Version 12.3.0 as follows: **ER<sub>y</sub> = BE<sub>y</sub> – PE<sub>y</sub>**

The equations and assumptions used to calculate the emission reduction are in compliance with the approved methodology ACM0002 version 12.3.0.

Based on the values of baseline emissions, project emissions and leakage the annual emission reductions have been calculated as 48273 tCO<sub>2</sub>e per annum.

## Discussion of CARs/CLs

**CAR 13** was raised as the calculation of simple operating margin emission factor was not found in compliance with the EB 63 Annex 19 Page 10 and CEA data base version 07. In response, the PP has submitted the revised ER calculation sheet and revised PDD. In the revised PDD, the PP has updated the version 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. The approach of the calculation of the Simple OM has been verified from the tool and found to be correct. 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 2008-09, 2009-10 and 2010-11) and will remain fixed throughout the crediting period. Further, the PP was asked to correct the calculation of simple OM considering the import electricity data as per Page 10 of EB 63 Annex 19. In response, the PP has submitted revised calculation of emission factor. The approach adopted in the calculation of 3-year generation-weighted average is checked and found that the PP has also considered import electricity data in the net energy generation in line with the requirement of 63 Annex 19. Hence, **CAR 13 is closed.**

## Opinion

Based on the above discussion and the requirements of paragraphs 89-93 of the VVM version 01.2<sup>7/</sup> (EB 55 Annex 1), the validation team confirms that:

1. All assumptions and data used by the PP are listed in the PDD, 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
3. All values used in the PDD are reasonable in the context of the proposed CDM project activity
4. The baseline methodology ACM0002 Version 12.3.0 has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions

All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.

#### **4.8 Application of Monitoring Methodology and Monitoring Plan**

Leakage accounting has not been considered for the project since the proposed project activity is renewable energy generation technology and leakage emissions need not to be considered as per the methodology ACM0002 version12.3.0.

The project activity applies the approved consolidated monitoring methodology ACM0002 version12.3.0<sup>8/</sup>. The applicability conditions of the methodology have been discussed in section 4.4 above. The PP has defined the monitoring parameters as per the requirements of section III of the methodology ACM0002 version12.3.0 and taking into consideration the actual procedure followed on the site. In line with this, the PP has defined the monitoring parameter, in section B.7.1 of the PDD. This confirms the requirement of paragraph 122 of VVM version 01.2.

The validation team applied a two-step process to assessing compliance with the requirements of monitoring plan as per paragraph 123 of VVM ver. 01.2 as follows:

1. Compliance of the monitoring plan with the approved methodology:

The validation team confirmed that the monitoring plan contains all necessary parameters, 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 each monitoring variable by the presented table is sufficient to ensure the verification of a proper implementation of the monitoring plan.

In section B.7.1 of the final PDD<sup>1.7/</sup>, the PP has defined following monitoring parameters relevant to the project type as per the requirements of section III of the methodology ACM0002 version12.3.0. As the proposed project activity is the new installation and involves electricity generation through the wind power hence the required parameter as per methodology ACM0002 version12.3.0 is  $EG_{\text{facility},y}$  (Quantity of net electricity generation supplied by the project plant/unit to the grid in year y) which shall be continuously monitored, accordingly the PP has developed the monitoring plan which is in compliance with the requirement of the methodology ACM0002 version12.3.0. The following parameters have been included in section B.7.1 of the PDD:

##### **1. Quantity of net electricity exported to the grid during the year y ( $EG_{P,J,y}$ )**

As per the actual monitoring procedures followed on-site, the WTGs of the project activity and as well WTGs of other project developers are connected to the substation. The common metering point comprises one main meter & check meter (jointly certified by GETCO and the service provider i.e. Suzlon/ its representative every month) and one ABT meter (ABT meter readings are not certified jointly, although GETCO consider this reading as the total energy for billing purpose and used for the calculation of sharing of the energy of the individual developers). Since, the substation energy meter is connected with the WEGs of multiple project developers; an apportioning procedure is applied by the GETCO to determine the electricity generated by the WEGs of an individual Project Participant. The apportioning procedure is basically the distribution of the transmission losses among all the WEGs 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 GETCO. Apportioning is under the jurisdiction of GETCO and the PP is not involved (directly or indirectly) in it. This apportioning procedure is predominant and well accepted in the state.

Sharing plan for calculating net electricity exported to the grid is given in section B.7.2 and same is validated as per the PPA.

$$\text{Share of net electricity generation of the individual WTGs} = \frac{C \times Y}{C + C_1 + C_2 + C_3 + \dots + C_n}$$

Where:

**C** = Net generation of project activity WTGs owned by PP (**E<sub>exp</sub>** - **E<sub>imp</sub>**; reading of each Individual WTG Meter as explained below)

**C+C<sub>1</sub>+C<sub>2</sub>+C<sub>3</sub>.....C<sub>n</sub>** = Total net energy generated from the Wind farm from different company at individual energy meter.

**Y**= The Meter reading by GETCO at the sent out metering point of substation

Taking all of the above parameters into consideration the authorized state agency (GETCO) releases a monthly Share Certificate for the net energy exports. This certificate will be used for determining the emission reductions and also for the billing and payment of net sale of electricity from the project.

Thus, the parameter **EG<sub>P,J,y</sub>** is being apportioned based on the reading of the continuously monitored parameters i.e. **E<sub>exp</sub>**, **E<sub>imp</sub>** and **Y** (The ABT Meter reading by GETCO at the substation metering point) and provision of the cross checking the results of the apportioned value of net electricity supplied to the grid by project activity WTGs (**EG<sub>P,J,y</sub>**) with records for sold electricity (invoices raised by the PP to GETCO) is included in section B.7.1. Hence, the monitoring plan is found in conformance with the requirement of the applied methodology ACM0002 version12.3.0.

Other parameters mentioned in the section B.7.2 includes the electricity export, import from non project WEGs, and **Y** (The ABT Meter reading by GETCO at the substation metering point) and the monitoring of the same is beyond the PP's control and hence the same are not mentioned as monitoring parameter in the section B.7.1 of the PDD.

Further, the apportioning procedures as described in section B.7.2 of final PDD<sup>1.7/</sup> is assessed as correct based on the on-site interviews with Mr. Dharmendra Agrawat (Senior Manager (MEIL)- Project site), Mr. Hari Krishnan (Site In charge (Suzlon Energy Limited), Mr. K.R.Sreenivas (General Manager-Power Marketing (MEIL)) etc. and also validating the model calculation of the net electricity supplied to the grid by the proposed project activity in accordance with apportioning procedures adopted by GETCO for the month of August 2012 and the Certificate of Share of electricity generated by wind farm at Bhojapuri (Mahidad) for the month August 2012 issued by GETCO dated 17/09/2012<sup>28/</sup>. Based on above, the assessment team is of the opinion that the monitoring plan is in compliance with the requirements of the methodology ACM0002 version12.3.0. It is also confirmed that monitoring arrangement described in the monitoring plan are feasible within the project design.

**2. Electricity exported from each WEG of the project activity during the year y (E<sub>exp</sub>) and 3. Electricity imported from each WEG of the project activity during the year y (E<sub>imp</sub>).**

This parameter is for the monitoring of the electricity exported and imported by the project activity wind turbines which is measured by their respective energy meters installed at each WTGs. The data monitoring will be done continuous by the energy meter and monthly generation report is being prepared by O&M service provider which is also endorsed by GEDA.

The value of this parameter will be used for the apportioning procedure. The same will also be used as crosscheck for the value of the net electricity supplied by the Project activity WEGs. 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 WEGs and transmission & transformer losses. The provision of the calibration of energy meters at the individual WTGs is provided which is as per the requirement of the PPA<sup>15/</sup>.

The above mentioned parameters are monitored as per the methodological requirements and the description of measurement methods for each parameter has been validated to be correct and feasible within the project design.

- 1) The Project Participant has revealed that all the monitored data would be archived electronically and on paper regularly throughout the crediting period. Also, data will be archived for a minimum of 2 years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later. This is stated in section B.7.1 of the final PDD<sup>1.7/</sup>.
- 2) The monitoring plan includes requirements for calibration of all the measuring equipments (energy meters) used for monitoring of the parameters for project activity. The electronic meters used for monthly recording are calibrated by the GETCO in Gujarat. Also, the meters at the WTG panel (i.e. Controller meter) are self calibrated and the readings from these meters will be cross checked with the power credit certificates issued by respective authorities in the states.
- 3) The monitoring frequency for  $EG_{\text{facility, y}}$  matches with that of the methodology, viz. continuous measurement, and monthly recording. The cross checking is provided through the use of the power credit reports.
- 4) Under section B.7.2 of the final PDD<sup>1.7/</sup>, the Project Participant has provided additional procedures to deal with data uncertainty, problems with meters, etc.

#### QA/QC, Calibration & recording:

- The Project Participant has revealed that all the monitored data would be archived electronically and on paper regularly throughout the crediting period. Also, data will be archived for a minimum of 2 years after the end of the crediting period. This is stated in section B.7.1 of the PDD.
- The monitoring plan includes requirements of calibration of all the measuring equipments used for monitoring of the parameters for project activity and the same is defined as once in three years. The electronic meters used for monthly recording are calibrated by GETCO. The net electricity generation supplied by the project to the grid can also be cross verified with records for sale of electricity.
- The monitoring frequency for parameter matches with that of the methodology, viz. continuous measurement and monthly recording.
- Under section B.7.1 of the PDD, the Project Participant has provided additional procedures to deal with data uncertainty, problems with meters, QA/QC measures etc. The monitored data for the project can also be cross checked with the individual energy meter at each WTG and LCS data recording.

The PP has also defined the monitoring procedures, authority, responsibility and management structure for the implementation of the monitoring plan and the same is provided under section B.7.2 of the final PDD<sup>1.7/</sup>. This has been checked and is found appropriate. The type of metering equipment, procedure of meter reading, meter testing, and calibration has been described in section B.7.1 and section B.7.2 of the PDD and is consistent with the PPA signed specifically for this project activity.

The validation team confirms that the description in the PDD correctly represents the metering system available at the project activity site and that the defined monitoring plan can be implemented in the context of the project activity.

The PP has described the monitoring plan in the section B.7.2 of the PDD and has been validated and found in line in terms methodological and project scenario's requirement:

- Data collection and record keeping arrangements
- Data Quality Control and Quality Assurance
- Maintenance and Calibration of monitoring equipment
- Staff training
- CDM monitoring organisation and management

Thus assessment team has verified that the monitoring plan and the Quality Management System as defined for implementation of monitoring plan and corresponding procedures for the parameters has been implemented as per section III of the applied methodology and complies with the requirements of VVM version 1.2.

#### 2. Implementation of the plan:

The assessment has been conducted by the validation team by means of reviewing of the documented procedures, interviewing with relevant personnels (as listed in section 6), project plans and physical

inspections of the proposed CDM project activity site. During the on-site assessment, validation team confirmed following actual monitoring procedures are in-place and feasible.

The validation team physically verified the metering system installed at the substation of the project activity. Project participant has described the metering system in details in revised section B.7.2 of the final PDD<sup>1.7/</sup>. The monitoring plan presented by the project participant has been assessed by applying two-step process as per para 123 of VVM<sup>7/</sup>. Monitoring plan mentioned in section B.7.1 of the final PDD<sup>1.7/</sup> is fully in compliance with applied methodology ACM0002 version 12.3.0<sup>8/</sup>. Also after discussion with consultant and project participant and actual site inspection, it has been concluded that project participant has got sufficient ability to implement monitoring plan described in section B.7.1 of the final PDD<sup>1.7/</sup>. This is in line with para 123 of VVM (version 1.2)<sup>7/</sup>.

The validation team physically verified the metering system installed at the substation and at each WTGs of the project activity and confirms that the description correctly represents the metering system available at the project activity site. The validation team hereby confirms that the defined monitoring plan can be implemented in the context of the project activity. The validation team also interacted with the O&M service provider, M/s. Suzlon Energy Limited who is the windmill supplier itself. The agency is experienced in the monitoring system and is managing O&M of numerous other wind farm CDM projects. The validation team therefore is of the opinion that the project participant through the O&M agency is capable of implementing the monitoring plan in the context of the project activity.

The PP has mentioned the operational and management structure for data monitoring in the PDD, along with the responsibilities at each level. The PP has mentioned that that all the monitored data would be archived on paper (Certificate for share of electricity generated by Wind Farm issued by GETCO and Monthly Generation Report prepared by O&M service provider and endorsed by GEDA) regularly throughout the crediting period. Also, data will be archived for 2 years after the end of the crediting period. This is stated in section B.7.1 of the PDD.

Further, host country DNA (NCDMA) mandates to monitor the action plan and utilization for 2% CER revenues in the sustainable development activities. In order to compliance with the same, The PP has provided the Performa of the action plan of 2% utilization of CER's<sup>32/</sup> value in the prescribed format of NCDMA as Appendix A of the PDD. As the applied methodology ACM0002 version 12.3.0 does not mentions to monitor this parameter hence same is not included in section B.7.1 of PDD.

### Discussion of CARs/CLs

**CAR 10** was raised in the form of consolidated findings in which the PP was asked to revised section B.7 in a transparent manner as per the actual on-site procedures and to improve the measurement methods and procedures in line with CDM-PDD guideline, version 07. In the final PDD<sup>1.7/</sup>, it is checked that the monitoring plan described in section B.7.1 and B.7.2 of the PDD is in accordance with the monitoring methodology (ACM0002 version 12.3.0). The validation team has checked all the parameters presented in the monitoring plan against the requirements of the methodology; no deviations relevant to the project activity have been found in the plan. The validation team confirms that the monitoring arrangements described in the monitoring plan is as per actual on-site procedures and feasible within the project design and the means of implementation of the monitoring plan are sufficient to ensure the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex-post and verified. Further, the apportioning procedures as described in section B.7.2 of the final PDD<sup>1.7/</sup> is assessed as correct based on the on-site interviews (as listed in section 6) and also validating the model calculation of the net electricity supplied to the grid by the proposed project activity in accordance with apportioning procedures adopted by GETCO for the month of August 2012 and the certificate of Share of electricity generated by wind farm at Bhojapuri (Mahidad) for the month August 2012 issued by GETCO dated 17/09/2012. Based on above, **CAR 10 is closed.**

**CAR 11** was raised as section B.7.1 of the webhosted PDD/version 01 did not indicate that the data monitored and required for verification and issuance are to be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later. In response, section B.7.1 of the PDD is revised and provision of the data archiving is clearly indicate that the monitored data will be archived for two years after the end of the last crediting period or till the last issuance of CERs for the project activity, whichever is later. The same is found in compliance with EB 41/Annex 12. Thus, **CAR 11 is closed.**

## Opinion

Based on the above discussion and the requirements of paragraphs 122-124 of the VVM version 01.2<sup>7/</sup> (EB 55 Annex 1), the validation team confirms that:

1. The monitoring plan included in the PDD is based on the approved methodology ACM0002, version 12.3.0 which has been applied to the proposed CDM project activity
2. The monitoring plan is in compliance with the applied methodology ACM0002, version 12.3.0
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.

### 4.9 Environmental Impacts

As per the Ministry of Environment and Forests (MoEF), India Environment Impact Notification S.O. 1533<sup>35/</sup> (<http://envfor.nic.in/legis/eia/so1533.pdf>) dated 14 September 2006 and further Notification No. S.O. 3067 dated 1<sup>st</sup> November 2009 (<http://moef.nic.in/downloads/rules-and-regulations/3067.pdf>), wind power projects are not covered under any schedule and thus Environmental Impact Assessment is not required for the project activity. Further, validation team has checked the requirement of next amendment S.O. 695(E) (Amendment in EIA notification S.O.1533 (E) and released on dated 04/04/2011)<sup>35/</sup> and confirmed that EIA is not mandatory for project type. The same is also verified through Ministry of Environment and Forest notification<sup>35/</sup> dated Dec 01, 2009 (ref: <http://moef.nic.in/downloads/rules-and-regulations/3067.pdf>). Please note that the notification in the English language is available at later part of document.

The validation team is of the opinion that the project complies with environmental regulations in India and the local stakeholder consultation carried out adequately. Thus the adequacy of analysis carried out by the project participant for impact of the implementation of the project activity on environment has been validated as per para 129, 130 and 131 of VVM (version 1.2)<sup>7/</sup>.

## Opinion

Thus, as per the requirements of paragraphs 131-133 of the VVM version 01.2<sup>7/</sup> (EB 55 Annex 1), the validation team confirms that the proposed wind energy based power generation project does not require prior environmental clearance or EIA and hence, complies with environmental regulations in India.

### 4.10 Local Stakeholder Comments

The local stakeholder's consultation meeting to discuss the stakeholders concern on the proposed Clean Development Mechanism (CDM) Wind power project by Mytrah Energy (India) Limited (MEIL) was conducted at nearby village of the project site in Gujarat. The summary presented below:

Project Site	State	Date of Invitation	Stakeholder consultation date
Bhojapara village in Surendranagar District	Gujarat	30/04/2011	07/05/2011

The records related to the stakeholders consultation viz. List of participant, questionnaires duly filled by the local stakeholders and MoMs<sup>18/</sup> are maintained by the project participant. The project participant has provided sufficient and transparent information on the process of local stakeholder consultation in the PDD. The information indicates that the Project Participant provided sufficient time to stakeholders for providing comments. The validation team interviewed a few of the local personnel (as listed in section 6) in the villages. The stakeholders viewed 25.20 MW Wind Power Project in Gujarat as contributing to local environmental benefits and socio-economy. Overall, there was agreement that the project activity was a beneficial project from the local sustainable development. The local stakeholders interviewed during the site visit of the validation activity endorsed these views. The stakeholders also confirmed the process of invitation as described in the PDD. The local stakeholders stated the following benefits of the project activity during the interview by the validation team:

- Education and Medical facilities for villagers
- School children get plates, books and uniform

- Employment for local persons
- Transport facilities/Roads are improved due to the project activities

They also confirmed that no persons were residing on the land where WTGs are installed. It is also confirmed that local stakeholders were invited by the PPs to comment on the proposed CDM project activity prior to the publication of the PDD on the UNFCCC website. The validation team is of the opinion that the local stakeholder consultation carried out satisfactorily (VVM paragraph 126)<sup>7/</sup>.

### **Opinion**

According to the requirements of the paragraphs 128-130 of the VVM version 01.2<sup>7/</sup> (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 (<http://cdm.unfccc.int/Projects/Validation/DB/51ZY4MG9TEBV9RBFH5JNQTB13XTIWL/view.html>) and was open for comments from 24/02/2012 to 24/03/2012. Comments were invited through the UNFCCC CDM homepage. Three (03) comments were received but one was a defamatory, non project specific comment. The exact same comment was received on several projects but was not project specific and was more about CDM. An email was sent to the person who posted the comment on 26/03/2012 asking them to provide project specific comments by 30/03/2012 but no comments were received. The validation team however, takes the opportunity to clarify this point in the validation report.

### 5.2 Compilation of all comments received

Comment Number	Date Received	Submitter	Comment
1	24/02/2012 – 23/03/2012	Mr. Benedict, E-mail: <a href="mailto:benedictcdm@gmail.com">benedictcdm@gmail.com</a>	<ol style="list-style-type: none"> <li>1. Purpose of the project and how the proposed project activity reduces greenhouse gas emissions are not briefed in the PDD. Refer section A.2.</li> <li>2. How environmentally safe and sound technology is used for the project and details of technology transfer is not demonstrated adequately. Refer A.4.2</li> <li>3. Non- debundling nature of the project activity is not adequately justified as per EB54 Annex 13 (Debundling tool). Refer A.4.5.</li> <li>4. Please check the project boundary of the project activity is not based on the guidance of the applicable project category.</li> <li>5. Why has option A (Combined margin) been chosen for calculating emission factor is not justified. Refer B.6</li> <li>6. The justification of choosing IRR as financial indicator is not adequately justified. Whether it is equity or project IRR, pre-tax or post tax is not mentioned in the PDD.</li> <li>7. The emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants.</li> <li>8. Basis of choosing PLR as benchmark is not adequately demonstrated in the PDD</li> <li>9. All the issues of investment analysis guidelines are not discussed in the PDD. Refer B.5.</li> <li>10. Justification of parameters including</li> </ol>

Comment Number	Date Received	Submitter	Comment
			<p>O&amp;M, insurance, loan, derating, escalation, and tariff are not demonstrated with justification. Refer B.5.</p> <p>11. Please provide a proof for proposed debt to equity taken at the investment decision. Refer B.5</p> <p>12. Proof for PLF is not justified.</p> <p>13. Date of offer is not provided</p> <p>14. Project cost is not as per state norms. Refer B.5.</p> <p>15. O&amp;M charges and its escalation is not as per norms</p> <p>16. IT rate assumed is not as per standard practice.</p> <p>17. The application of MAT which is based on tax holiday while calculating WACC is not appropriate.</p> <p>18. The PP has not explained and justified the key assumptions and rationale.</p> <p>19. The PP and consultant has not illustrate in a transparent manner all data used to determine the baseline emissions.</p> <p>20. Not demonstrated that the proposed project activity is additional as per options provided under attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities.</p> <p>21. National policies and circumstances relevant to the baseline of the proposed project activity are not being summarized clarify.</p> <p>22. Explain and justify all relevant methodological choices for the proposed project activity</p> <p>23. Data that is calculated with equations provided in the approved category or default values specified in the category should not be included in the compilation.</p> <p>24. CER revenue assumed is not consistently applied</p> <p>25. Project cost is not as per norms, DOE has to check and clarify.</p> <p>26. The project cost of the project should be based on offer and not on purchase order or tariff order.</p> <p>27. O&amp;M charges considered are on higher side. Pls. clarify.</p> <p>28. Benchmark calculation is not as per WACC tool (EB53 Annex 8)</p> <p>29. Whether pre-tax or post tax IRR is selected is not demonstrated in the PDD.</p>

Comment Number	Date Received	Submitter	Comment
			<p>30. The basis of calculation of benchmark is not documented in the section B.5. PLR is not acceptable benchmark for the project. WACC based on Government bonds, risk premiums should be taken.</p> <p>31. Prior consideration of CDM which is important for the determination of additionality is not documented in the section B.5 of the PDD.</p> <p>32. Date of PPA is not mentioned in the prior consideration of CDM</p> <p>33. The selection of simple OM based on low cost/must run resources is not adequately justified. Refer B.6.1</p> <p>34. PP has not provided for each parameter the chosen value or, where relevant, the qualitative information.</p> <p>35. Please Provide the actual value applied. Where time series of data is used, where several measurements are undertaken or where surveys have been conducted, provide detailed information.</p> <p>36. Explain and justify the choice for the source of data.</p> <p>37. Ex-ante option of calculating OM is not adequately demonstrated. Step 3 of Refer B.6.1</p> <p>38. Power plants registered as CDM project activities should be included in the sample group that is used to calculate the operating margin if the criteria for including the power source in the sample group apply. This argument is not demonstrated. B.6.1</p> <p>39. The selection of option (out of two) for calculating OM is not adequately documented with justification. CEA calculation is based on net electricity generation, the average efficiency of each power unit and the fuel types used in each power unit. Step 4 of B.6.1</p> <p>40. The argument that CEA data for build margin is calculated as per Emission factor tool is not documented. B.6.1</p> <p>41. Spread sheet is not provided. The data should be presented in a manner that enables reproducing of the calculation of OM, BM, and CM.</p> <p>42. The justification of negligible project emissions for wind project is not as per AMS. I. D ver 16.0 EB 54).</p> <p>43. The emission factor value (Southern grid) for calculating baseline emission is wrong. Refer B.6.3</p>

Comment Number	Date Received	Submitter	Comment
			<p>44. Net electricity should be continuously monitored, hourly measured and at least monthly recorded. Refer B.7.1</p> <p>45. Metering regulations as per CEA norms is not adequately followed in monitoring plan. Refer B.7.2.</p> <p>46. Where the values have been measured, include a description of the measurement methods and procedures that comply with the guidance provided under general guidance.</p> <p>47. Provide a detailed description of the monitoring plan, including an identification of the data to be monitored and the procedures that will be applied during monitoring.</p> <p>48. The PP should include sources of data that will be actually used for the proposed project activity (e.g. which exact national statistics, actual measurement etc. ).</p> <p>49. Where the parameters are to be measured in accordance with the guidance of the approved project category or the general guidance to the indicative methodologies, specify the measurement methods and procedures including accepted industry standards or national or international standards which will be applied, which measurement equipment is used, how the measurement is undertaken.</p> <p>50. Which calibration procedures are applied, what is the accuracy of the measurement method, who is the responsible person / entity that should undertake the measurements and what is the measurement interval?</p> <p>51. Please provide a detailed description of the monitoring plan. Describe the operational and management structure that the project operator will implement in order to monitor emission reductions.</p> <p>52. Clearly indicate the responsibilities for and institutional arrangements for data collection and archiving.</p> <p>53. The monitoring plan should reflect good monitoring practice appropriate to the type of project activity. Provide any relevant further background information.</p> <p>54. Please describe the process by which comments by local stakeholders have been invited and compiled. An invitation for comments by local stakeholders shall be made in an open and transparent manner, in a way that</p>

Comment Number	Date Received	Submitter	Comment
			facilities comments to be received from local stakeholders and allows for a reasonable time for comments to be submitted. 55. Project participants shall describe a project activity in a manner which allows the local stakeholders to understand the project activity.
2	24/02/2012 – 23/03/2012	Mahesh Pandya Environmental Engineer Paryavaran mitra 502, Raj Avenue, Bhaikakanagar road Thaltej, Ahmedabad – 380059 India Telefax - 079- 26851321/1801  Submitted by: paryavaranmitra, <a href="mailto:paryavaranmitra@yahoo.com">paryavaranmitra@yahoo.com</a>	1. Please explain location selection criteria 2. Does project owner had any kind of wind based energy business experience? 3. How many skilled/unskilled people from surrounding area were employed at this project during commissioning and operation as mentioned in social well being section? 4. List of stakeholders and minutes of stakeholder meeting is not attached with PDD. 5. What would be impact of negative environmental conditions of area upon project? What would be alternatives in that case?

A defamatory, non project specific comment was also received during the commenting period. The comment received was defamatory and identical in content to ones received on several other projects (different in scope); the comment was not project specific and was about CDM validation process in general. This comment is accessible in full by the UN team for transparency through the interface but was not published as it is non project specific.

To verify the authenticity of the comment, an email was sent on 26/03/2012, to the person who posted the comment, asking them to provide the name and contact details of the individual or organization on whose behalf they have submitted the comment and with another opportunity to submit a project specific comment by 30/03/2012; no response was ever received. The team however, takes the opportunity to clarify this point in the validation report.

### 5.3 Explanation of how comments have been taken into account

The comments received were issued as findings **ISHC Comment 1** & **ISHC Comment 2** to the PP for their response. All the comments received were accounted and assessed appropriately with the responses from the clients and supporting documents as described below and the **ISHC Comment 1** & **ISHC Comment 2** were **closed** appropriately.

No	ISHC Comments-1	DOE Assessment & Conclusion
1	Purpose of the project and how the proposed project activity reduces greenhouse gas emissions are not briefed in the PDD. Refer section A.2.	The PP has already mentioned the above mentioned details in section A.2 of the web hosted PDD is found appropriate.
2	How environmentally safe and sound technology is used for the project and details of technology transfer is not demonstrated adequately. Refer	Section A.4.3 of the revised PDD mentions that the used technology is environmentally safe and there are no emissions associated with the project activity. As per the Schedule of the EIA notification (EIA notification, S.O. 1533 dated 14th September, 2006) and subsequent amendment

	A.4.2	S.O. 3067(E) dated 01/12/2009 and S.O.695(E), dated 4/04/2011 given by the Ministry of Environment and Forests (Government of India) EIA is not a regulatory requirement in India for wind energy projects. Thus the project activity doesn't require EIA. The project activity does not involve any negative environmental impacts, as the Wind Turbine Generator's are installed for generation of power using wind which is a clean source of energy. Latest available notification of Ministry of Environment and Forests with regard to requirement of EIA is referred in section D.1 of revised PDD. Further, it is checked that technology transfer is not involved in the proposed project.
3	Non- debundling nature of the project activity is not adequately justified as per EB54 Annex 13 (Debundling tool). Refer A.4.5.	This is a large scale project activity and hence EB54 Annex 13 (Debundling tool) is not applicable to the project activity.
4	Please check the project boundary of the project activity is not based on the guidance of the applicable project category.	<p>The spatial extent of the project boundary is assessed through the description in the PDD and the grid structure in India as known from the official data available from the Central Electricity Authority (CEA).</p> <p>The project activity boundary therefore includes the project activity WTG and all power plants connected physically to the NEWNE electricity grid of India that the CDM project power plant is connected to.</p> <p>The validation team confirms that the only greenhouse gas relevant to the project activity is CO<sub>2</sub>. This gas is addressed by the applied methodology. Based on the above assessment, the validation team hereby confirms that the identified boundary and the selected sources and gases are justified for the project activity and in compliance with applied methodology ACM0002 version 12.3.0.</p>
5	Why has option A (Combined margin) been chosen for calculating emission factor is not justified. Refer B.6	<p>The PP has justified choice of option A (combined margin) in calculation of emission factor in the final PDD<sup>1.7/</sup> and the same is found appropriate thus accepted.</p> <p>The applied methodology viz; ACM0002, version 12.3.0 describes the combined margin to be calculated as per one of the 2 options provided. The project participant has chosen the option A to calculate the emission factor using the Tool to calculate the emission factor Version 2.2.1.</p>
6	The justification of choosing IRR as financial indicator is not adequately justified. Whether it is equity or project IRR, pre-tax or post tax is not mentioned in the PDD.	<p>As per the Version 06.0.0 of "Tool for the demonstration and assessment of additionality", If the CDM project activity and the alternatives identified in Step 1 generate no financial or economic benefits other than CDM related income, then apply the simple cost analysis (Option I). Otherwise, use the investment comparison analysis (Option II) or the benchmark analysis (Option III). Since the proposed project activity generates revenues through sales of electricity, benchmark analysis has been selected. Hence for the benchmark analysis, Equity Internal Rate Return been used as financial indicator and return on equity (RoE) has been used as benchmark.</p> <p>The PP has justified identification of the post tax equity IRR as most suitable financial indicator as per Para 28 of additionality tool, version 06.0.0, The same is also mentioned</p>

		in the final PDD <sup>1.7/</sup> .
7	The emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants.	The PP has considered the grid power plants only, and not included the off-grid power plants while computing the emission factor for the project activity. The same is mentioned in step 2, section B.6.1 of the PDD and is in line with the applied version of the tool.
8	Basis of choosing PLR as benchmark is not adequately demonstrated in the PDD	Return on Equity (ROE) has been used as benchmark and justification for the same has been provided in the PDD This is found to be appropriate and it is accepted.  The PP has not chosen the PLR as the benchmark for the project activity. Comment is not applicable.
9	All the issues of investment analysis guidelines are not discussed in the PDD. Refer B.5.	PP has discussed all the issues of investment analysis as per relevant guidelines in the final PDD <sup>1.7/</sup> and the same are validated.  All the applicable guidelines under the investment analysis guidelines (EB 62, annex 05) have been discussed in section B.5. This is found to be appropriate and it is accepted
10	Justification of parameters including O&M, insurance, loan, derating, escalation, and tariff are not demonstrated with justification. Refer B.5.	All the input values such as O&M, insurance, interest rate, debt-equity ratio, escalation and tariff rate are checked and confirmed from quotations/publically available data available at the time of investment decision. Input values like project cost, O&M cost, escalation etc are further crosschecked from purchase order issue to the technology supplier.  Justifications for all parameters have been adequately demonstrated in section B.5 of the final PDD <sup>1.7/</sup> . Further, the PP has provided evidences for these parameters for validation and checked by the assessment team as discussed in above section of the report. This is found to be appropriate and it is accepted.
11	Please provide a proof for proposed debt to equity taken at the investment decision. Refer B.5	The debt to equity structure is as per GERC tariff order dated 31/03/2010, which is based on standard practice. This is found to be appropriate and it is accepted.
12	Proof for PLF is not justified.	The PP has justified the consideration of PLF in the final PDD <sup>1.7/</sup> . The PLF of 22.95% assumed in the investment analysis is determined by the third party contracted by the project participant. This is compliance with EB 48 Annex 11. This is found to be appropriate and it is accepted
13	Date of offer is not provided	The PP has now mentioned date of Quotation/offer letter is provided in section B.5 of PDD.
14	Project cost is not as per state norms. Refer B.5.	The PP has considered the project cost on the basis of offer received from WTG supplier which is in line with para 6 of EB 62, annex 5. The same has been cross checked with actual project cost and other information available in public domain and is found appropriate.
15	O&M charges and its escalation is not as per norms	O&M cost and escalation have been considered on the basis of quotations received from Suzlon at the time of decision making same is cross checked from the original O & M

		agreement and other information available in public domain and is found appropriate
16	IT rate assumed is not as per standard practice.	The Income Tax Rates are considered by the PP as per the Income Tax Act, 1961 in India.  Income Tax rate considered is 33.99% which is Income tax rate for FY 2010-2011 and found correct.
17	The application of MAT which is based on tax holiday while calculating WACC is not appropriate.	The PP has used Return on Equity as benchmark and hence WACC has not been considered. However, the appropriateness of the application of RoE based on Appendix A of EB 62 Annex 5 is not justified in line with para 06 of EB 62 Annex 5.  PP has used expected return of equity as the benchmark. Hence, this question is not applicable
18	The PP has not explained and justified the key assumptions and rationale.	All the key assumptions have been clearly explained in final PDD <sup>1.7/</sup> . Further, the PP has provided appropriate justification for the same.
19	The PP and consultant has not illustrate in a transparent manner all data used to determine the baseline emissions.	The PP has explained the steps and calculation of emission reduction in section B.6, and annex 3 of the PDD.
20	Not demonstrated that the proposed project activity is additional as per options provided under attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities.	Since, project activity is a larger scale project. The additionality is demonstrated by PP following the tool "Tool for the demonstration and assessment of additionality" Version 6, hence, attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities is not applicable to the project activity.
21	National policies and circumstances relevant to the baseline of the proposed project activity are not being summarized clarify.	PP has considered relevant national and/or sectoral policies and circumstances. The same is summarised in section B.4 and B.5 of the PDD
22	Explain and justify all relevant methodological choices for the proposed project activity	PP has justified all relevant methodological choices for the proposed project activity in the final PDD <sup>1.7/</sup> .
23	Data that is calculated with equations provided in the approved category or default values specified in the category should not be included in the compilation.	PP has not included in compilation data that is calculated with equations provided in the methodology or default values specified in the methodology or applied tools.
24	CER revenue assumed is not consistently applied	The PP has calculated post tax-equity IRR without considering CDM benefit to demonstrate additionality as per the requirement of "Tool for the demonstration and assessment of additionality", Version 6.0.
25	Project cost is not as per norms, DOE has to check and clarify.	The PP has considered the project cost on the basis of offer received from WTG supplier which is in line with para 6 of EB 62, annex 5. The same has been cross checked with actual project cost and other information available in public domain and is found appropriate.
26	The project cost of the project should	Project cost has been considered on the basis of the

	be based on offer and not on purchase order or tariff order.	quotations received from Suzlon at the time of decision making and same is cross checked from the purchase order issued to technology supplier. This is found to be appropriate and it is accepted
27	O&M charges considered are on higher side. Pls. clarify.	O&M cost and escalation have been considered on the basis of quotations received from Suzlon at the time of decision making same is cross checked from the original O & M agreement. This is found to be appropriate, conservative and it is accepted
28	Benchmark calculation is not as per WACC tool (EB53 Annex 8)	The benchmark calculation is in line with EB62, annex 5. WACC tool is yet not compulsory to apply. Further, EB 53 Annex 8 is the Approved Consolidate Methodology ACM 0015 Version 03.
29	Whether pre-tax or post tax IRR is selected is not demonstrated in the PDD.	PP has selected post-tax equity IRR for demonstrating additionally. The same has already been mentioned in the webhosted PDD.
30	The basis of calculation of benchmark is not documented in the section B.5. PLR is not acceptable benchmark for the project. WACC based on Government bonds, risk premiums should be taken.	The PP has used Return on Equity as benchmark and hence WACC has not been considered. The basis for calculation of benchmark is documented in section B.5. The PLR has not been selected as benchmark by PP.
31	Prior consideration of CDM which is important for the determination of additionality is not documented in the section B.5 of the PDD.	PP has documented the information for prior consideration of CDM in section B.5 of the PDD.
32	Date of PPA is not mentioned in the prior consideration of CDM	In line with EB 62/Annex 13, date of PPA is not mandatory to be intimated to UNFCCC and DNA.
33	The selection of simple OM based on low cost/must run resources is not adequately justified. Refer B.6.1	Annex-4 of PDD transparently demonstrated that the average share of the low cost/ must run resources in the last 5 years is 17.68%, which is less than 50% of the total grid generation. The share of Must-Run (Hydro/Nuclear) (% of Net Generation) is verified from the CEA database version 07 available at the time of submission of PDD for validation. Thus, the use of simple OM based on low cost/must run resources has been adequately justified in the PDD
34	PP has not provided for each parameter the chosen value or, where relevant, the qualitative information.	PP has provided this information in section B.6 of the PDD. The quantitative information for each ex-ante fixed parameter has been found included in section B.6.1 of PDD
35	Please Provide the actual value applied. Where time series of data is used, where several measurements are undertaken or where surveys have been conducted, provide detailed information.	Actual value for each ex-ante fixed parameter has been found included in section B.6.1 of PDD.
36	Explain and justify the choice for the	Source of data used for simple OM and BM is Central

	source of data.	Electricity Authority: CO <sub>2</sub> Emission Database CEA CO <sub>2</sub> Baseline database Version 07, which is the latest available at the time of submission of PDD for validation and same is found in line with EB 63 Annex 19.
37	Ex-ante option of calculating OM is not adequately demonstrated. Step 3 of Refer B.6.1	The PP has demonstrated the choice of the ex-ante option for calculating OM in step 3 of section B.6.1 of the PDD.
38	Power plants registered as CDM project activities should be included in the sample group that is used to calculate the operating margin if the criteria for including the power source in the sample group apply. This argument is not demonstrated. B.6.1	The Simple OM emission factor has been published by CEA and same is calculated in line with EB 63 Annex 19. The CEA Database includes CDM projects while calculating OM
39	The selection of option (out of two) for calculating OM is not adequately documented with justification. CEA calculation is based on net electricity generation, the average efficiency of each power unit and the fuel types used in each power unit. Step 4 of B.6.1	PP has justified choice of option for calculating simple OM and the same is documented in step-4 of section B.6.1.  Project participant has calculated emission factor based on CEA database version 07 which was the latest available database available at the time of PDD submission for validation of the project activity. Approach used is found to be in line Tool to calculate the emission factor for an electricity system version 2.2.1. This is found to be appropriate and it is accepted.
40	The argument that CEA data for build margin is calculated as per Emission factor tool is not documented. B.6.1	This argument is discussed by PP in step 5 of section B.6.1 of the PDD.  Project participant has used the official published data on operating and build margin emission factors which is calculated as per the "Tool to calculate emission factor for an electricity system". The version of the CEA database used is Version 07, which was available on the start date of validation viz; webhosting date of the PDD. This data is published by Central Electricity Authority (CEA), who is the sole authority for the publication of such data in India.  This data is based on Version 2.2.1 of the 'Tool to calculate the emission factor for an electricity system'. Since the Indian Electricity system, wherein the proposed project activity is located in, is well defined and is not located partially or fully in any Annex 1 country, the Step 1 of the tool is still applicable to the project activity. Further since step 2 is optional, the project participant have not considered Step 2 in the estimation of the operating margin and build margin, since the CEA database version 07 calculates the values of operating margin and build margin considering data for grid power plants only. Hence CEA database can still be used. Project participant has applied weight factors for the OM and BM [75% & 25% respectively] as specified in the tool to arrive at the emission factor for the combined margin. The years considered for OM are 2008-09 to 2010-11 and for the BM it is 2010-11. Thus, the use of BM of year 2010-2011 in line with EB 63 Annex 19 is justified appropriately.
41	Spread sheet is not provided. The data should be presented in a manner that enables reproducing of	The calculation of OM, BM and CM has been duly detailed in Annex 3 of the PDD. A separate spread sheet for the calculation of base line emission factor has been provided

	the calculation of OM, BM, and CM.	and same is checked and found in line with the EB 63 Annex 19. All input values are sourced from the CEA data base version 07
42	The justification of negligible project emissions for wind project is not as per AMS. I. D ver 16.0 EB 54).	This is a large scale project activity and applicable methodology is ACM 002, Version 12.3.0 and not AMS 1 D Version 16.0 EB 54. Hence, not applicable to this proposed project.
43	The emission factor value (Southern grid) for calculating baseline emission is wrong. Refer B.6.3	The project activity will supply electricity to the NEWNE Grid (project boundary) and hence, PP has calculated emission factor value of NEWNE Grid.
44	Net electricity should be continuously monitored, hourly measured and at least monthly recorded. Refer B.7.1	The electricity is continuously measured through all the meters as prescribed in section B.7.1. and is recorded on monthly basis through the procedure specified in Section B.7.1. The same is verified during site visit and has been updated in the revised PDD. The same is in compliance with requirement of ACM 002, Version 12.3.0.
45	Metering regulations as per CEA norms is not adequately followed in monitoring plan. Refer B.7.2.	The metering system has been detailed in section B.7.1 of the PDD. It has been verified during site visit that the Meters located at the sub – station and the energy meters at each WTGs are sealed and calibrated by the Gujarat Electricity Transmission Corporation Limited (GETCO) authorities and the system followed is as per the metering regulations of the CEA
46	Where the values have been measured, include a description of the measurement methods and procedures that comply with the guidance provided under general guidance.	The PP has provided description measurement methods and procedures for measured values in section B.7.1 of the PDD.
47	Provide a detailed description of the monitoring plan, including an identification of the data to be monitored and the procedures that will be applied during monitoring.	The PP has provided this information in section B.7.2 and Annex 4 of the PDD.
48	The PP should include sources of data that will be actually used for the proposed project activity (e.g. which exact national statistics, actual measurement etc. ).	The PP has mentioned sources for data used in proposed project activity in the relevant sections of the PDD.
49	Where the parameters are to be measured in accordance with the guidance of the approved project category or the general guidance to the indicative methodologies, specify the measurement methods and procedures including accepted industry standards or national or international standards which will be applied, which measurement equipment is used, how the measurement is undertaken.	The PP has mentioned required details for measurement in section B.7.1 of the PDD.
50	Which calibration procedures are applied, what is the accuracy of the	PP has provided this information in section B.7.1, section B.7.2 and Annex 4 of the PDD. The same is verified during

	measurement method, who is the responsible person / entity that should undertake the measurements and what is the measurement interval?	validation site visit.
51	Please provide a detailed description of the monitoring plan. Describe the operational and management structure that the project operator will implement in order to monitor emission reductions.	The PP has provided detailed description of the monitoring plan in section B.7.2 of the PDD. The same is verified during validation site visit.
52	Clearly indicate the responsibilities for and institutional arrangements for data collection and archiving.	PP has detailed this information in section B.7.2 of the PDD.
53	The monitoring plan should reflect good monitoring practice appropriate to the type of project activity. Provide any relevant further background information.	Monitoring plan reflects good monitoring practice appropriate to the type of project activity. PP has detailed this information in section B.7.2 of the PDD.
54	Please describe the process by which comments by local stakeholders have been invited and compiled. An invitation for comments by local stakeholders shall be made in an open and transparent manner, in a way that facilitates comments to be received from local stakeholders and allows for a reasonable time for comments to be submitted.	PP has described these details in section E of the PDD. The local stakeholders were invited through personal invitations. Invitations letters were sent to village sarpanch, contractors, local villagers etc. Copy of personal invitations sent, filled questionnaire, attendance records of local stakeholder meeting and minutes of the meeting of the local stakeholder consultation have been verified by Validation team. The validation team believe that the time provided to the local stakeholders for providing comments on the Project Activity is adequate.
55	Project Participants shall describe a project activity in a manner which allows the local stakeholders to understand the project activity.	Project participant have informed the local stakeholders about the project activity during the local stakeholder meeting and relevant questions were asked to stakeholders to make aware them about the project activity. The same was verified by the validation team during the personal interaction with some of the local stakeholders during the validation site visit. Thus, adequacy of the local stakeholder consultation process is checked and found satisfactory.
<b>No</b>	<b>ISHC Comments-2</b>	<b>DOE Assessment &amp; Conclusion</b>
1	Please explain location selection criteria	The PP has selected locations based on locations offered by supplier (Suzlon Energy Limited). The WTG supplier offers locations considering technical feasibility and wind potential available at site. The same was discussed along with EPC contractor during the site visit. The specification location of WEG installations has been selected in consultation with the technology supplier and found appropriate.
2.	Does project owner had any kind of wind based energy business experience?	As per interviews with the PP and based on information available at company webpage ( <a href="http://www.mytrah.com/">http://www.mytrah.com/</a> ), The Mytrah Energy (India) Limited (MEIL) (PP) is one of India's fastest growing Independent Power Producers with a focus on developing wind power to meet the increasing demand for power and till date around 194 MW wind power capacity is already under operation.

		Also, the proposed project is first wind power project by Mytrah Energy (India) Limited (MEIL). As checked from the Annual Report and balance sheet of FY 2010-11, Mytrah Energy (India) Limited (MEIL) is only involved in the wind power development sector.
2	How many skilled/unskilled people from surrounding area were employed at this project during commissioning and operation as mentioned in social well being section?	During site visit interview (as listed in section 6) validation team could confirm that local people have been employed for various activities related to the project. Further, it is checked from the action plan of 2% utilization of CERs submitted to District collector and further submitted to host country DNA, on the basis of which letter of approval is granted to the proposed project activity and confirmed that PP is committed in the development of the sustainable development activities.
3	List of stakeholders in stakeholder meeting is not attached with PDD.	The PP has already provided the identified stakeholders and type of attendees for the meeting the PDD. The attendance list for the meeting has been provided by the PP <sup>18/</sup> as a separate document and is checked.  Validation team evidenced the attendance sheet of the stakeholder meeting, minutes of meeting and find that all stakeholders have been represented including the elected people's representative of the village Panchayat. The information provided in the PDD is consistent with the same
4	What would be impact of negative environmental conditions of area upon project? What would be alternatives in that case?	This is wind power project and there are no negative impacts envisaged from the project activity on environment or any grounds found.  Further, there is no negative impact of WEG installation or its operation. Also, as per the Schedule 1 of the EIA notification dated 14th September 2006 and subsequent amendment S.O. 3067(E) dated 01/12/2009 and S.O.695(E), dated 4/04/2011, given by the Ministry of Environment and Forests (Government of India) under the Environment (Protection) Act 1986, environmental impact assessment is not a regulatory requirement in India for wind energy projects.

## 6. List of Persons Interviewed

Date	Name	Position	Short Description of Subject Discussed
12/04/2012 & 13/04/2012	Mr. Dharmendra Agrawat	Senior Manager (MEIL)- Project site	<ul style="list-style-type: none"> <li>• Project Description</li> <li>• Technical specifications</li> <li>• Implementation of the project activity</li> <li>• Monitoring plan</li> <li>• Project financing etc.</li> <li>• Project Boundary,</li> </ul>
12/04/2012	Mr. Harikrishnan	Site In charge (SEL)	<ul style="list-style-type: none"> <li>• On-site monitoring procedures</li> <li>• QA/QC in the data monitoring</li> <li>• Training requirements</li> </ul>
12/04/2012	Mr. Janak Suriya	Junior Engineer (SEL)	On-site monitoring procedures
12/04/2012	Mr. Dhansuyna Raman	Village Panchayat-Sarpanch	Local Stakeholder consultation process, sustainable development initiatives, Land allotment etc.
12/04/2012	Mr. Girish Lal	Villager	Local Stakeholder consultation process, sustainable development initiatives, Land allotment etc.
Telephonic T: +91 80 3098 9022, M: +91 99000 66523,	K.S.K.Singaravelan	DGM – Projects (MEIL)	<ul style="list-style-type: none"> <li>• Management approval</li> <li>• Project Description</li> <li>• Project Cost</li> <li>• Baseline Selection and Additionality,</li> </ul>
Telephonic M: +91 9900066529 T: +91 8030989020	Mr. Tanmay Pramanik	Manager – Power Marketing (MEIL)	<ul style="list-style-type: none"> <li>• On-site monitoring procedures</li> <li>• Apportioning procedures for the calculation of net electricity supplied by the project activity WTGs</li> <li>• Calculation of Emission Factor, Application of Monitoring Methodology and Monitoring Plan</li> </ul>
Telephonic M: +91 9900066529	Mr. K.R.Sreenivas	General Manager – Power Marketing (MEIL)	<ul style="list-style-type: none"> <li>• On-site monitoring procedures</li> <li>• Apportioning procedures for the calculation of net electricity supplied by the project activity WTGs</li> </ul>

## 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):

Name of document
/1.1/ PDD version 01 dated 17/01/2012 (Published for International Stakeholders Consultation)
/1.2/ PDD version 02 dated 25/04/2012
/1.3/ PDD version 03 dated 12/07/2012
/1.4/ PDD version 04 dated 30/08/2012
/1.5/ PDD version 05 dated 20/10/2012
/1.6/ PDD version 06 dated 28/11/2012
/1.7/ PDD version 07 dated 13/12/2012 (Final CDM PDD)
/2.1/ Emission reduction calculation spread sheet
/3.1/ Final Equity IRR calculation sheet
/4.1/ Final Benchmark Analysis Excel spreadsheet
/5/ Modalities of Communication (F-CDM-MoC) between PPs and CDM EB, dated 11/10/2012
/6/ Host country approval issued to proposed CDM project activity "Wind Power Project in Gujarat" by Indian DNA (National CDM Authority, Ministry of Environment and Forests, Government of India) dated 10/09/2012 (4/10/2012-CCC)

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/	<u>Clean Development Mechanism Validation and Verification Manual</u> Version 1.2												
/8/	Approved consolidated baseline and monitoring methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources, (EB 66, Annex 35, dated 02/03/2012, Valid from 17/09/2010 to 10/05/2012 and request for registration can be submitted until 11/01/2013)												
/9/	<ol style="list-style-type: none"> <li>1. Methodological Tool "Tool to Calculate Emission Factor of an Electricity System", version 2.2.1, EB 63 Annex 19</li> <li>2. Guidelines on the demonstration and assessment of prior consideration of the CDM, Version 04, EB 62 Annex 13</li> <li>3. Guidelines on the assessment of Investment analysis, Version 05, EB 62 Annex 5.</li> <li>4. Guidelines for the reporting and validation of plant load factors, Version 01.0 EB48 Annex11</li> <li>5. Tool for the demonstration and assessment of additionality, Version 6.0.0</li> <li>6. Glossary of CDM terms, Version 07.0, EB 70 Annex 04</li> <li>7. Guideline on Common Practice (EB 69 Annex 08)</li> </ol>												
/10/	<p><b>Commissioning Detail:</b>            Certificate of commissioning issued by Gujarat Energy Development Agency</p> <table border="1"> <thead> <tr> <th>No of WTGs</th> <th>Reference Number</th> <th>Capacity of each (kW)</th> <th>Total Capacity (MW)</th> <th>Location</th> <th>Commissioning dated</th> </tr> </thead> <tbody> <tr> <td>6</td> <td>GEDA/PWF/SGWPL-CEIL/Mahidad/11-12/1759</td> <td>2100</td> <td>12.60</td> <td>Gujarat (connected at Bhojpari Substation)</td> <td>30/08/2011</td> </tr> </tbody> </table>	No of WTGs	Reference Number	Capacity of each (kW)	Total Capacity (MW)	Location	Commissioning dated	6	GEDA/PWF/SGWPL-CEIL/Mahidad/11-12/1759	2100	12.60	Gujarat (connected at Bhojpari Substation)	30/08/2011
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	3	GEDA/PWF/SGWPL-CEIL/Mahidad/11-12/2310	2100	6.30	Gujarat (connected at Bhojpari Substation)	19/10/2011
	3	GEDA/PWF/SGWPL-CEIL/Mahidad/11-12/1158	2100	6.30	Gujarat (connected at Bhojpari Substation)	22/09/2011
/11/	<b>Management decision:</b> 1. Extract of the minutes of meeting of Board of Directors of M/s Mytrah Energy (India) Limited (formerly known as M/s Caparo Energy (India) Limited) held on 13/10/2010 regarding approval for the wind power project having total capacity of 25.20 MW in the state of Gujarat considering CDM revenue					
/12/	Land Lease agreement for each location					
/13/	<b>Suzlon Energy Limited (SEL) offer for investment in Wind power:</b> Quotation (Quotation No.:Suzlon/Caparo/Guj/10-11/01) for supply of 25.2 MW (12 Nos.x 2.10 MW) (S-88 Model) at Mahidad site in state of Gujarat, dated 02/06/2010					
/14/	<b>Purchase Order:</b> Purchase agreements between M/s Caparo Energy (India) Limited (presently known as M/s Mytrah Energy (India) Limited (MEIL) dated 18/01/2011 for supply of WTGs (S-88 Model; 12 x 2.10 MW), tubular towers, transformers, civil works, electrical works, erection, installation commissioning of WTGs					
/15/	<b>Power Purchase Agreement:</b> Purchase agreements between M/s Caparo Energy (India) Limited (presently known as M/s Mytrah Energy (India) Limited (MEIL) dated 03/08/2011 for selling power of GUVNL from the 25.20 MW wind farm generation.					
/16/	<b>ISO certificates of EPC contractor (Suzlon Energy Limited, Suzlon Group)</b> ISO 9001:2008 Quality Management System certificate issued by DNV issued on 20/04/2012 ( <a href="http://www.suzlon.com/manufacturing/l3.aspx?l1=5&amp;l2=21&amp;l3=34">http://www.suzlon.com/manufacturing/l3.aspx?l1=5&amp;l2=21&amp;l3=34</a> )					
/17/	<b>Prior Consideration of CDM</b>  1. Prior consideration of CDM form sent to UNFCCC and NCDMA (Host country DNA) through E-mail on 16/08/2010  2. Extract of the minutes of meeting of Board of Directors of M/s Mytrah Energy (India) Limited (MEIL) (formerly known as M/s Caparo Energy (India) Limited) held on 13/10/2010 regarding approval for the wind power project having total capacity of 25.20 MW in the state of Gujarat considering CDM revenue  3. Evidence of the acknowledgement email received from host party DNA i.e. NCDMA on dated 17/08/2010  4. Resubmission of Prior CDM Consideration form to intimate the UNFCCC Secretariat regarding the proposed CDM project activity and submission of <b>F-CDM-PC</b> (Prior Consideration of the CDM Form) through E-mail on 07/03/2011.  5. Evidence of the acknowledgement email received from UNFCCC Secretariat on dated 07/04/2011  6. Prior CDM consideration of the proposed CDM project at CDM UNFCCC webpage ( <a href="http://cdm.unfccc.int/Projects/PriorCDM/notifications/index.html">http://cdm.unfccc.int/Projects/PriorCDM/notifications/index.html</a> ) and screenshot of the same					
/18/	<b>Local Stake holders Consultation</b> <b>Public Invitation</b> Personnel invitation sent to Sarpanch and other villagers (Nearby Villages of the project site: Bhojapara and Mahidad) dated 30/04/2011  <b>Minutes of Meeting</b> Minutes of meeting of the local stakeholder consultation process held at Bhojapara Village in Surendranagar District of Gujarat State on 07/05/2011					

	<p><b>Attendance sheet</b> Attendance sheet of all the attendee of the local stakeholder consultation process duly signed by all the stakeholders dated 07/05//2011</p> <p><b>Questionnaires</b> Filled questionnaires by No. of local stakeholders during the consultation process providing their feedback on the wind power projects</p>
/19/	<p><b>PLF Evidences:</b></p> <ol style="list-style-type: none"> <li>25.2MW Gujarat Wind Farm Wind Resource and Energy Yield Assessment prepared by Parsons Brinckerhoff India Pvt. Limited (a third party engineering company contracting by PP) dated 15/07/2011</li> <li>GERC tariff order No. 1 dated 30/01/2010 (latest available at the time of investment decision)</li> <li>Certificate of Share of electricity generated by wind farm at Bhojapuri (Mahidad) for the period November 2011 to October 2012 issued by GETCO</li> </ol>
/20/	<p><b>Project Common Practice Analysis</b></p> <ol style="list-style-type: none"> <li>UNFCCC project List (Ref: <a href="http://cdm.unfccc.int/Projects/projsearch.html">http://cdm.unfccc.int/Projects/projsearch.html</a>)</li> <li>Central Electricity Authority (CEA) database version 07 (Ref: <a href="http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm">http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm</a>) Report published by Ministry of New and Renewable Energy, Government of India for</li> <li>MW scale Grid Solar Power Plants Commissioned in India as Compilation based on information from NVVN, IREDA, State Agencies and Project Developers etc., as of 24 November 2011</li> <li>Energy Alternative India (EAI) (Ref: <a href="http://www.eai.in/ref/ae/oce/oce.html">http://www.eai.in/ref/ae/oce/oce.html</a>)</li> <li>Energy Alternative India (EAI) (Ref: <a href="http://www.eai.in/ref/ae/geo/geo.html">http://www.eai.in/ref/ae/geo/geo.html</a>)</li> <li>Annual report-2010-11 of Ministry of New and Renewable energy, Government of India (Ref: <a href="http://mnre.gov.in/file-manager/annual-report/2010-2011/EN/index.htm">http://mnre.gov.in/file-manager/annual-report/2010-2011/EN/index.htm</a> )</li> <li>The Ministry of New and Renewable Energy (MNRE), Government of India (<a href="http://www.mnre.gov.in/schemes/new-technologies/">http://www.mnre.gov.in/schemes/new-technologies/</a>)</li> </ol>
/21/	Project activity WTGs Coordinates & Details (Record No:WRD/F/FMX/GJ/12-13/101/007) Issued by Suzlon Energy Limited
/22/	"Fresh certificate of Incorporation consequent upon change of name" document issued by Registrar of Companies, Andhra Pradesh change in the name of company from Caparo Energy (India) Limited to Mytrah Energy (India) Limited (MEIL) on 27/09/2011 (Corporate identity number U40108AP2009PLC065804)
/23/	Technical specification of S-88 Model WTG (2.1 MW, 50 Hz, V3A) issued by Suzlon Energy Limited (Document no.: TSG_TSM_TS_04_032, Revision 04 dated 27/08/2010)
/24/	33 kV Line Layout Drawing For 50.4 MW For Wind Power Project At site Mahidad Dist. Rajkot, State-Gujarat submitted by the O&M operator of the project activity wind farm (Suzlon Infrastructure Services Limited) dated 28/01/2011
/25/	<p>Various regulatory clearances:</p> <ol style="list-style-type: none"> <li>Permission for setting up of 25.20 MW wind farm to the PP i.e. M/s Mytrah Energy (India) Limited (MEIL) (formerly known as Caparo Energy (India) Limited at district Surendranagar and Rajkot (Gujarat) by GEDA dated 30/07/2011</li> <li>Office letter issued by Office of the Chief Electrical Inspector dated 02/08/2011 to the PP regarding initial inspection of the 1x2100 kW 690 V Wind Turbine Generator, 1x2500KVA 690 V/33 KV Transformer and 33 KV internal overhead lines with associated equipments for M/s. Caparo Energy (India) Limited developed by Suzlon Power Infrastructure Limited</li> </ol>
/26/	Balance sheet of M/s. Caparo Energy (India) Limited (Presently known as M/s Mytrah Energy (India) Limited

	(MEIL) for FY 2010-2011 as on 31/03/2011
/27/	<p><b>GBI Scheme:</b></p> <p>1. MNRE Scheme for Implementation of Generation Based Incentives (GBI) for Grid Interactive Wind Power Projects(ref: <a href="http://www.ireda.gov.in/Wind.asp">http://www.ireda.gov.in/Wind.asp</a>)</p> <p>2. Letter received from IREDA stating the registration of the wind farm project having capacity of 25.20 MW at Rajkot and Surendranagar District of Gujarat for availing the Generation based incentives (GBI) with unique identification number to WTGs by IREDA-592, dated 21/11/2011, Reference No.:223/39/WE/2010IREDA/592/4418.</p> <p>3. Scheme for Implementation of Generation Based Incentives (GBI) for Grid Interactive Wind Power Projects vide File no 53/1/2008-WE as issued by Ministry of New and Renewable Energy, Government of India by letter dated 17/12/2009. The same is available at the link of <a href="http://www.mnre.gov.in/file-manager/grid-wind/gbi-scheme.pdf">http://www.mnre.gov.in/file-manager/grid-wind/gbi-scheme.pdf</a></p>
/28/	<p><b>Apportioning approach:</b></p> <p>1. Model calculation of the net electricity supplied to the grid by the proposed project activity in accordance with apportioning procedures adopted by GETCO for the month of August 2012</p> <p>2. Certificate of Share of electricity generated by wind farm at Bhojapuri (Mahidad) for the month August 2012 issued by GETCO dated 17/09/2012, Reference No:GETCO/SLDC/COM/WEG/12-131754.</p> <p>3. Certificate of Share of electricity generated by wind farm at Bhojapuri (Mahidad) for the period November 2011 to October 2012 issued by GETCO</p>
/29/	CDM Validation contract of the proposed CDM project (CDM.VAL3548) with SGS dated 25/10/2011 and validation contract was signed by the PP i.e. M/s Mytrah Energy (India) Limited (MEIL) on dated 19/11/2011.
/30/	Action plan for utilization of 2% CER revenue in the sustainable development activity submitted to the host country DNA (NCDMA) and district collector on dated 09/08/2012. Based on the action plan, HCA was granted to the proposed CDM project activity.
/31/	<p><b>Risk Free Return</b></p> <p>Government Securities Market (RBI Monthly Bulletin October 2010): No. 26 C: Month-end Yield to Maturity of SGL Transactions in Central Government Dated Securities for Various Residual Maturities (<a href="http://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/26CT_BL091010.pdf">http://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/26CT_BL091010.pdf</a>)</p> <p>RBI Official website(Ref:<a href="http://rbi.org.in/scripts/BS_ViewBulletin.aspx">http://rbi.org.in/scripts/BS_ViewBulletin.aspx</a>)</p>
/32/	<p>1. GERC Tariff Order dated 30/01/2010</p> <p>In the matter of : Determination of the tariff for Procurement of Power by Distribution Licensees from Wind Energy Generators and other commercial issues, Gujarat Electricity Regulatory Commission, Ahmedabad Order No.1 of 2010</p> <p>2. GERC Order No. 2 of 2012 dated 08/08/2012</p>
/33/	<p>1. Corporate Tax Rate and Minimum Alternative Tax rate</p> <p><b>The India Budget of 2010 – 2011 (<a href="http://indiabudget.nic.in/ub2010-11/download_index.htm">http://indiabudget.nic.in/ub2010-11/download_index.htm</a>)</b></p> <p>Fiscal Policy Strategy Statement- The India Budget of 2010 – 2011 (Page 40, Para 15 (iii))</p> <p>2. Corporate and Indirect Tax Survey 2011, KPMG International</p>
/34/	Central Electricity Authority (CEA) database version 07, published in January 2012 <a href="http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm">http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm</a>
/35/	<p>1. The Ministry of Environment &amp; Forest (MoEF), Government of India, vide Notification No. SO. 1533 dated 14<sup>th</sup> September, 2006 <a href="http://envfor.nic.in/legis/eia/so1533.doc">http://envfor.nic.in/legis/eia/so1533.doc</a></p> <p>2. S.O. 695(E): Amendment in EIA notification S.O.1533 (E) and released on dated 04/04/2011</p>
/36/	BSE India (Start date of stock price and closing price of Power Generation Companies) <a href="http://www.bseindia.com/stockinfo/indices.aspx">http://www.bseindia.com/stockinfo/indices.aspx</a>

/37/	Interest Rate for Loan/Debt rate (Local commercial lending rate published by SBI in September 2010, latest available at the time of investment decision).
/38/	Service Tax as per IT Act. ( <a href="http://www.servicetax.gov.in/st-proc-home.htm">http://www.servicetax.gov.in/st-proc-home.htm</a> )
/39/	Company's act 1956 <a href="http://www.fastfacts.co.in/resources/DepCoAct.rtf">www.fastfacts.co.in/resources/DepCoAct.rtf</a>
/40/	Evidence for no ODA involvement in the form of the self undertaking by PP dated 26/12/2011 and stating that the proposed project activity was funded through equity participation and long term debt from IDFC bank Ltd.
/41/	Letter of Intent issued by IDFC to M/s. Caparo Energy (India) Limited regarding sanction of financial assistance for the development of the wind farm at different location in India, dated 24/09/2010
/42/	Corporate Finance Theory by Ashwath Damodaran (ref: <a href="http://pages.stern.nyu.edu/~adamodar/New_Home_Page/AppldCF/derivn/ch4deriv.html#ch4.6">http://pages.stern.nyu.edu/~adamodar/New_Home_Page/AppldCF/derivn/ch4deriv.html#ch4.6</a> )
/43/	E-mail communication with Deputy Secretary, Climate Change and Member Secretary, NCDMA ('rajiv.kumar1975@nic.in'; assistant.ncdma@nic.in') regarding the confirmation on the Host Country Approval ( Ref No. 4/10/2012-CCC ) dated 10/09/2012 to "Wind Power Project in Gujarat"
/44/	Additional benchmark calculation spreadsheet for the calculation of unlevered beta, considering the BSE Sensex data
/45/	Central Electricity Regulatory Commission (CERC) Terms & Conditions of Tariff Regulations, 2009 dated 19/01/2009 available at the link of <a href="http://cercind.gov.in/Regulations/Terms-and-Conditions-of-Tariff-Regulations_2009-2014.pdf">http://cercind.gov.in/Regulations/Terms-and-Conditions-of-Tariff-Regulations_2009-2014.pdf</a>
/46/	1. Published research paper: " <b>Power Sector Reforms in India</b> " by Harbans L. Bajaj and Deepak Sharma 2. Electricity Reforms and Regulations- A Critical Review of Last 10 Years Experience, Ajay Pandey and Sebastian Morris, Indian Institute of Management, Ahmedabad, 25/03/2009

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## 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 Power Project in Gujarat.

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?
Host Country Approval letter ensuring the participation requirements being met by the project activity.	<b>CAR 01</b> HCA was not available during the site visit. PP was asked to submit the same once it is received from the Indian DNA. CAR 01 was raised.	HCA received	HCA received. CAR 01 closed.
Evidence to prove that no public funding has been taken in the project activity	<b>CAR 03</b> Proof of no use of public funding was not provided during the document review process during the site visit. Hence PP was requested to provide documentary evidence for non-involvement of public funding in the project activity.	Self declaration by PP to certify that no ODA was involved in developing the project is checked. Also, funding arrangement in the proposed CDM project activity was also discussed during interviews with the representative of PP	Acceptable
Purchase order for each wind mill (Evidence for start date of project activity)	Purchase order for project activity WTGs have been checked	Purchase Order <sup>714/</sup>	Appropriate and accepted
Location of all monitoring points i.e. energy meters for each wind mill should be checked during site visit.	Location of all energy meters have been checked during the site visit	Site Visit	Appropriate and accepted
The copy of acknowledgement from UNFCCC and email to	Mail communication to UNFCCC & Indian DNA within 6 months	Prior intimation UNFCCC and NCDMA (Host country DNA)	Appropriate and accepted

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
Indian DNA (regarding prior intimation within six months of start date)	from the start date of the project activity has been submitted.	<p>through E-mail on 16/08/2010<sup>/17/</sup></p> <p>Evidence of the acknowledgement email received from host party DNA i.e. NCDMA on dated 17/08/2010<sup>/17/</sup></p> <p>Resubmission of Prior CDM Consideration form to intimate the UNFCCC Secretariat regarding the proposed CDM project activity and submission of <b>F-CDM-PC</b> (Prior Consideration of the CDM Form) through E-mail on 07/03/2011 and Evidence of the acknowledgement email received from UNFCCC Secretariat on dated 07/04/2011<sup>/17/</sup></p>	
The appropriate Modalities of Communication for the project activity have to be submitted by the Project participant before submitting a request for registration.	The letter on the Modalities of Communication with the Executive Board and the UNFCCC Secretariat signed by the project participant has been provided by the PP	Modalities of Communication (F-CDM-MOC) form <sup>/5/</sup> dated 11/10/2012	Appropriate and accepted
Commissioning certificate for each wind mill	Commissioning certificates have been checked	Commissioning Certificates <sup>/10/</sup>	Appropriate and accepted

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
Power Purchase Agreement between wind mill owner and electricity board for each wind mill	Power Purchase Agreement between wind mill owner and electricity board for each wind mill have been submitted	Power Purchase Agreement <sup>/15/</sup>	Appropriate and accepted
QA/QC procedure for data monitoring or ISO certificates for the Company (if applicable) and personal training programme, Operation and maintenance procedure and contract	EPC contractor (Suzlon Energy Limited) certified for the followings: OHSAS 18001:1999, ISO 9001:2008 and ISO 14001:2004 Relevant document submitted.	ISO certificates for EPC contractor <sup>/16/</sup>	Appropriate and accepted
Public Notification for Local Stake Holder consultation. Due account of stakeholder comments received required to be verified. Discussions with the Local Stakeholders	The copies of the personnel invitation letters to village Panchayat Sarpanch and various villagers to invite the local stake holders have been submitted. The Minutes of meeting along with the attendance sheet of the stakeholder meeting have been submitted. The on-site interviews conducted with the local stake holders and views of stakeholders towards the proposed CDM project activity found satisfactory.	Personnel invitation sent to Sarpanch and other villagers (Nearby Villages of the project site: Bhojapara and Mahidad) dated 30/04/2011 and other Local Stake holders Consultation documents i.e. Minutes of Meeting, Attendance sheet etc. <sup>/18/</sup>	Appropriate and accepted

**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	Reference Criteria	SGS Assessment	Conclusion/CA Rs/ 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> <ul style="list-style-type: none"> <li>a) The country is a Party to the Kyoto Protocol</li> <li>b) Participation is Voluntary</li> <li>c) 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</li> <li>d) It refers to the precise proposed CDM project activity title in the PDD being submitted for registration</li> </ul> <p>1.2. Whether the LoA is unconditional with respect to (a)-(d) above?</p> <p>1.3. Is the LoA from the project participant or directly from the DNA, indicate the means of validation employed to assess the authenticity with DNA if the team doubt the authentic of LoAs.</p>	<p>Clean Development Mechanism, Validation and Verification Manual, Version 01.2 (from this point forwarded referenced as VVM) -- Para 44-50 and 128-129</p> <p>Paragraph 37 CDM Modalities and procedures</p>	<p>The Host Party involved is India, the Party has ratified the Kyoto Protocol on 26/08/2002 as checked at <a href="http://maindb.unfccc.int/public/country.pl?country=IN">http://maindb.unfccc.int/public/country.pl?country=IN</a> and the Party has nominated a DNA 'National Clean Development Mechanism Authority'</p> <p>As per section A.3 and Annex-1 of PDD<sup>1.8/</sup>, "Mytrah Energy (India) Limited (MEIL)" is the project participant and only Government of India is involved as party (host) in the proposed project activity and no other parties are involved in the proposed CDM project activity.</p> <p>CAR 01 was raised:</p> <p>In line with paragraph 44-50 of VVM/version 1.2, Project Participant is requested to submit Host Country Approval received for the project activity and justify how proposed CDM project activity qualifies the participation requirement of CDM project activities.</p> <p>In response,</p> <p>The project Participant has submitted the scanned copy of Host Country Approval (HCA) Letter issued by Indian DNA, Reference no. 4/10/2012-CCC dated 10/09/2012<sup>06/</sup>. The same was verified from the original copy issued by host country DNA.</p>	<p>CAR#01 Closed. OK</p>

2. Please state the project participants listed in the PDD and check with which of these project participants does SGS have a contract for the projects validation	Para 37 CDM M & P Para 7 EB 50 Annex 48	Project participant (Mytrah Energy (India) Limited (MEIL)) listed in the PDD has a contractual relationship with SGS for the purpose of this validation activity.	Y
2.1. If the project participant(s) listed in the PDD published at international stakeholder <sup>2</sup> 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 withdrawal from the proposed project activity.	EB 30 Para. 41. EB50 Annex 48 Para. 8	Not Applicable	Y
2.2. Confirm while submitting a request for registration – all of the project participants with a contractual relationship are still listed in the PDD.	EB50 Annex 48 Para.7-9	Project participant listed in PDD <sup>1.1/</sup> published for ISHC is still listed in the final PDD <sup>1.7/</sup> .	Y
2.3. Project participants who are listed in the PDD (submitted for global stakeholder consultation) but who do not have a contractual relationship with SGS for the purposes of the validation activity may be removed from the PDD which is submitted for registration	EB50 Annex 48 Para.7-9	There is only one Project Participant and Project participant (Mytrah Energy (India) Limited (MEIL)) listed in the PDD has a contractual relationship with SGS for the purpose of this validation activity.	Y
2.4. SGS may restart the validation activity through the new or revised contract with a different set of project participants by; a. Indicating that the first validation contract has been terminated and; b. Republishing the PDD or revised PDD for global stakeholder consultation.	EB50 Annex 48 Para.7-9 (If applicable)	Not Applicable	Not Applicable
2.5. The letter/s of approval are unconditional with respect to 1.1.a) to 1.1.d) above	VVM Para. 49/54	Pending closure of CAR#1	Pending closure of CAR#1 Closed Y

<sup>2</sup> 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

<p>3. The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof, and be entered into voluntarily</p>	<p>VVM Para. 54   Marrakech Accords, CDM Modalities §29 and §30  Kyoto Protocol Art. 12.2, Marrakech Accords, CDM Modalities §40a</p>	<p>Pending closure of CAR#1</p>	<p>Pending closure of CAR#1  Closed  Y</p>
<p>4. 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</p>	<p>VVM Para. 40-42   Marrakech Accords, CDM Modalities, §40</p>	<p>The project was listed on UNFCCC website form 24/02/2012 to 24/03/2012 at <a href="http://cdm.unfccc.int/Projects/Validation/DB/51ZY4MG9TEBV9RBFH5JNQTBI3XTIWL/view.html">http://cdm.unfccc.int/Projects/Validation/DB/51ZY4MG9TEBV9RBFH5JNQTBI3XTIWL/view.html</a></p> <p>Two comments were received and same were raised to in the form of PP ISHC Comment-1 and ISHC comment 2:</p> <p>1. Comments raised on the proposed CDM project activity during webhosting of PDD for ISHC (24 Feb. 2012- 23 March 2012); Mr. Benedict, E-mail: <a href="mailto:benedictcdm@gmail.com">benedictcdm@gmail.com</a></p> <p>2. Comments raised on the proposed CDM project activity during webhosting of PDD for ISHC (24 Feb. 2012- 23 March 2012); Mr. Mahesh Pandya, Environmental Engineer, Paryavaran mitra, E-mail: <a href="mailto:paryavaranmitra@yahoo.com">paryavaranmitra@yahoo.com</a></p> <p>All the ISHC comments are addressed by PP and same were assessed properly by the validation team.</p>	<p>ISHC Comment-1 and ISHC comment 2 were Closed  Y</p>
<p>5. The project design document is in accordance with the applicable CDM requirements for completing PDDs.</p>	<p>VVM Para. 55 - 57   Marrakech Accords, CDM</p>	<p>The PDD is as per the form CDM-PDD Version 03. The headings, logo, format &amp; fonts are in accordance with that used in the PDD template.</p>	<p>CAR 15 closed.  Y</p>

	<p>Modalities, Appendix B, EB Decisions</p> <p>EB 25 Annex 15          EB 41 Annex 12</p>	<p>CAR 15 was raised:</p> <ol style="list-style-type: none"> <li>1. In Section A.4.1.4, the coordinates representing the location of each WTGs is not found correct. Kindly correct the same.</li> <li>2. In section A.4.2 of PDD, the nomenclature of the applied methodology has been noted down incorrectly as ACM002. Kindly correct the same.</li> <li>3. Many of the web-links in the PDD (i.e. Page 19, 20, 28, 29, 30, 31 etc.) are not executable. PP is requested to correct and update all the web-links in the PDD.</li> <li>4. In section B.7.2 of PDD, The formulae for the parameter “share of PP’s net electricity supplied to grid” is not appearing in the .pdf format of PDD. PP is requested to rectify the formatting error in the PDD.</li> <li>5. The formatting and font used in section B.7.2 of PDD is found inconsistent with the guidelines for completing the project design document (CDM-PDD), EB 41 Annex 12. Kindly correct the same. In doing so, kindly refer Para 13 of EB 41 Annex 12.</li> </ol> <p>All above findings are resolved based on the corrections made by PP in the form of PDD version 07. Hence, CAR 15 is closed.</p>	
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**Table 2 - PDD**

Checklist Question	Reference Criteria	MoV*	SGS Assessment	Conclusion/ CARs/CLs
<b>A. General Description of Project Activity</b>				
<b>A.1. Project Title</b>				
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		The title of the project activity mentioned is “Wind Power Project in Gujarat” This is unique. PDD is in accordance with the guidelines for completing the project design document (CDM-PDD), version 07.The title of the project will be further checked with the LoA from Host Country. Pending closure of CAR#1 PP has submitted the LoA from the host Party. The project title was found to be consistent in the PDD, LoA and the UNFCCC website.	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		The version number and date of version has been mentioned in section A.1 of the PDD as Version: 01 and Date: 17/01/2012  The version number and date of revision has been mentioned in section A.1 of the final PDD <sup>1.7/</sup> as well Version: 07 and Date: 12/12/2012	Y
<b>A.2. Description of the Project Activity</b>				
A.2.1. Does the proposed CDM project activities in existing facilities or utilizing existing equipments? Does a site inspection carried out by the assessment team?	VVM Para 60 Guidelines for completing a CDM-PDD (PDD) section A.2		Section A.2 of the PDD mentions the purpose of the project, type of technology used & the contribution to sustainable development in the region under the headings of social, economic, environmental & technological well being. The proposed project activity is green field project activity, involves the installation of 25.20 MW wind power project in three different states and the generated electricity will be supplied to the NEWNE grid and southern regional grid of India. The project activity is the new installation and large scale project activity. Same has been checked with the Purchase Order and during the site visit and found in line with the VVM Para 60. Validation team confirms that the description of proposed project activity as contained in the PDD sufficiently covers all relevant elements, is accurate and this is also verified during site visit.	Y

\* MoV = Means of Verification, DR= Document Review, I= Interview

<p>A.2.2. Does the description of the proposed CDM project activity as contained in the PDD sufficiently cover all relevant elements accurately and provide the reader with a clear understanding of the nature of the proposed CDM project activity?</p>	<p>VVM Para.58-59          VVM Para. 64(a)          PDD section A.2          see also A.4, A.4.3          and B.3</p>		<p>The proposed project activity is a large project which involves setting up of 14 WTGs within an installed capacity of 25.20 MW in the state of Gujarat. The generated electricity from the project activity will be supplied to NEWNE grid of India.</p> <p>However, based on the web-hosted PDD version 01, CAR 05 is raised:</p> <ol style="list-style-type: none"> <li>1. In section A.4.1.4 of PDD, the GPS coordinates of the location of WEGs installed is not mentioned correctly, Pls. correct the same and submit the evidence of specific location of each WEG's.</li> <li>2. Section A.4.3 of PDD should include a description of how environmentally safe and sound technology and know-how to be used, is transferred to the Host Party as per CDM-PDD guideline, version 07.</li> <li>3. The reference of the applied methodology ACM0002 version 12.2.0 in section B.1 &amp; B.3 of webhosted PDD is not found as per CDM-PDD guideline, version 07.</li> <li>4. In section B.6.4 of webhosted PDD/version 01, Table is not as per the CDM-PDD guideline, version 07. Pls. Correct</li> <li>5. The notations i.e. <math>EG_{facility,y}</math> are found inconsistent with the applied methodology ACM0002 version 12.2.0. Pls. correct the same throughout the PDD</li> <li>6. In section D.1 of webhosted PDD/version 01, kindly refer the latest available notification of Ministry of Environment and Forests with regard to requirement of EIA.</li> <li>7. Web-link provided for the source of data for <math>EF_{grid CM,y}</math> in section B.6.2 is not executable. Needs correction.</li> <li>8. PP shall substantiate the expected operational lifetime of the project activity.</li> <li>9. Pls. clarify, how appropriate is the media used to invite comments by local stakeholders.</li> </ol>	<p>CAR#05          Closed          Y</p>

			PP has submitted revised corrected PDD version 02 and other supportive documents related to the local stakeholder consultation process, GPS coordinates of the each of the project WTGs etc and based on the assessment of the revised PDD and the provided evidences, CAR 05 is closed.	
A.2.3. If the project activity involves the alternation of an existing installation or process, does the project de-scription clearly state the differences resulting from the project activity compared to the pre-project situation?	VVM Para.63 PDD section A.2 see also A.4, A.4.3 and B.3		The proposed project activity is new installation and there is no alteration involved in existing project activity, it clearly described in section A.2, A.4, A.4.3 and B.3 of the final PDD <sup>1.7/</sup> . The same is checked by the assessment team with the Purchase Order and during the site visit and found in line with the VVM Para.63	Y
A.2.4. 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.4.3 and B.3		The proposed project activity is green field project activity, involves the installation of 25.20 MW wind power project in three different states and the generated electricity will be supplied to the NEWNE grid of India. All the information have been checked by the assessment team during the site visit and found in line with the description given in the PDD.  The project activity has estimated as emission reduction of 4,82,73 t of CO <sub>2</sub> over a 10 year of crediting period.  However, Pending closure of CAR#05	Pending closure of CAR#05 Closed Y
A.2.5. Is all information with respect to project description deemed accurate and complete?	VVM Para.64(b) PDD section A.2		The proposed project activity is green field project activity, involves the installation of 25.20 MW wind power project in three different states and the generated electricity will be supplied to the NEWNE grid of India. All the information have been checked by the assessment team during the site visit and found in line with the description given in the PDD. However, Pending closure of CAR#05	Pending closure of CAR#05 Closed Y

A.3. Project Participants				
<p>A.3.1. Is the table required for the indication of project participants correctly applied?</p>	<p>VVM Para. 51-54 PDD section A.3</p>	<p>DR</p>	<p>The table required for the indication of the project participants in Section A.3 of the final PDD<sup>1.7/</sup> has been correctly applied as per the guidelines for completing the CDM-PDD. The detail furnished in this section is consistent with the contact details provided in annex 1 of the final PDD<sup>1.7/</sup>.</p> <p>CAR 03 is raised:          Section A.3 of the PDD/version 01 states Mytrah Energy (India) Limited (MEIL) and in-line with para 7-9 of EB 50/Annex 48, DoE (SGS) has direct contractual relationship with Mytrah Energy (India) Limited (MEIL). However, all the supportive documents i.e. PPA, Purchase agreements for WEGs, O &amp; M Contracts etc. show the name of project developer as Caparo Energy (India) Limited. PP is requested to clarify the same.</p> <p>The PP has submitted "Fresh certificate of Incorporation consequent upon change of name" document issued by Registrar of Companies, Andhra Pradesh. (dated 27/09/2011 with Corporate identity number U40108AP2009PLC065804) document. The referred document (dated 27/09/2011) has been provided by PP indicating the details of name change from Caparo Energy (India) Limited to Mytrah Energy (India) Limited (MEIL). Thus, CAR#03 is <b>closed</b>.</p>	<p>Pending closure of CAR#03</p> <p>Closed. Y</p>
<p>A.3.2. Whether the participation of each project participant has been approved by at least one Party involved, either in a letter of approval or in a separate letter specifically to approve?</p>	<p>VVM Para. 52</p>	<p>DR</p>	<p>The PP i.e. Mytrah Energy (India) Limited (MEIL) is the only project participant and the same has been approved by the Party (India) involved in the project activity. The letter of Approval has been checked by the assessment team and found correct</p>	<p>Y</p>
<p>A.3.3. Is all information provided in consistency with details provided by further chapters of the PDD (in particular Annex 1)?</p>	<p>VVM Para. 51 PDD section A.3/Annex 1</p>	<p>DR</p>	<p>The information provided in Section A.3 of the final PDD<sup>1.7/</sup> is consistent with the details provided in Annex 1.</p>	<p>Y</p>

<p>A.3.4. Has the MoC been completed as per the latest Procedures for MoC between the project participants and the Executive Board?</p>	<p>EB 48 Annex 60 EB 45 Annex 59</p>	<p>DR</p>	<p>The same will be sought on closer of all the issues.</p> <p>CAR #02 is raised: PP shall submit a complete “F-CDM-MOC - Modalities of Communication statement” for the project activity in the format prescribed in F_CDM_MOC, version 1.4 form.</p> <p>MoC for the project activity dated 11/10/2012 has been checked by the assessment team and found correct.</p> <p>The completed modalities of communication form dated 11/10/2012 is submitted by the PP and is as per latest F-CDM-MoC which is available on UNFCCC website.</p>	<p>CAR #02 is raised and closed</p> <p>Y</p>
<p><b>A.4. Technical Description of the Project Activity</b></p>				
<p>A.4.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)?</p> <p>A.4.2. Are the latitude and longitude of the site indicated (decimal points)</p>	<p>VVM Para.64 PDD section A.4</p>	<p>DR</p>	<p>The information provided on the location of the project activity in section A.4 of the PDD allow for a clear identification of the site.</p> <p>CAR#05 is raised: In section A.4.1.4 of PDD, the GPS coordinates of the location of WEGs installed is not mentioned correctly, Pls. correct the same and submit the evidence of specific location of each WEG's.</p> <p>CAR#05 is closed based on the revised PDD and details of the exact GPS coordinates by O&amp; M operator.</p>	<p>Pending closure of CAR#05</p> <p>Closed</p> <p>Y</p>
<p>A.4.3. Does the proposed CDM project activity involve the alteration of existing installations or process?</p>	<p>VVM Para.64 PDD section A.4</p>	<p>DR</p>	<p>The proposed project activity is a new installation &amp; does not involve the alteration of existing installations or processes. This is verified through the purchase orders</p> <p>Project activity involves installation of windmills to generate electricity and provide it to NEWNE Regional Grid. Thus project activity does not involve any alteration of the existing installations or the process.</p>	<p>Y</p>

<p>A.4.4. Is the category(ies) of the project activity correctly identified?</p>	<p>VVM Para.64 PDD section A.4</p>	<p>DR</p>	<p>Yes; the category of the project activity is identified correctly. <i>Sectoral Scope: 1, "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".</i></p> <p>The proposed project activity involves the setting up of 12 WTGs with an installed capacity of 25.20 MW and the generated power from the project activity will be supplied to NEWNE grid of India. Hence, Section A.4.2 of the PDD correctly identifies the sectoral scope as Category: 1 Energy Industries (renewable &amp; non-renewable sources)</p>	<p>Y</p>
<p>A.4.5. Is all information provided in compliance with actual situation or planning as available by the project participants?</p>	<p>VVM Para.64 PDD section A.4 Guidelines for completing a CDM-PDD (PDD)</p>	<p>DR SV</p>	<p>The technical specifications and Purchase orders for all equipments used in the project activity needs to be submitted by the project participant.</p> <p>To be checked during the site visit.</p> <p>Information provided for the project activity is clear to understand &amp; in compliance with actual situation of the project activity. All information provided are crosschecked and found to be consistent.</p>	<p>Y</p>
<p>A.4.6. Is the projected emission reductions in consistency with the ex-ante estimation in Section B.6.4?</p>	<p>VVM Para.64 PDD section A.4.4</p>	<p>DR</p>	<p>Yes, the projected emission reductions in consistency with the ex-ante estimation in Section B.6.4.</p> <p>The table used for the indication of project emission reduction has been correctly applied in section A.4 of the PDD as per the guidelines for completion of CDM-PDD.</p>	<p>Y</p>
<p><b>A.5. Public Funding</b></p>				
<p>A.5.1. Does the information on public funding provided conform to the actual situation or planning as presented by the project participants?</p>	<p>PDD section A.4.5</p>	<p>DR</p>	<p>The PP needs to justify the same.</p> <p>CAR 07 (#02) was raised:</p> <p>As per section A.4.5 &amp; Annex 2 of PDD, PP is requested to submit supporting document to demonstrate that no diversion of ODA fund from the Annex I party has been used for the project activity.</p>	<p>Issue 2 in CAR#07 Closed</p> <p>Y</p>

			Information on public funding is provided in PDD section A.4.5 and Annex 2. It is observed that no public funding is received for the project activity. The same has been checked and confirmed from letter of declaration dated 25/07/2012 from the PP.	
A.5.2. Is all information provided consistent with details provided by further chapters of the PDD (in particular annex 2)?	PDD section A.4.5	DR	Yes, all information provided is consistent with details provided by further chapters of the PDD.	OK
A.5.3. 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.4.5	DR	Not applicable since there is no public funding for the project activity.	OK
<b>B. Baseline and Monitoring Methodology</b>				
<b>B.1. Title and reference of the approved baseline and monitoring methodology applied of the project activity</b>				
B.1.1. Is the baseline methodology previously approved by the CDM Methodology Panel?	VVM Para.65 VVM Para 68 PDD section B.1	DR	Yes, the PDD under the section B.1 refers to the approved consolidated methodology ACM0002 version 12.3.0 valid from 17 <sup>th</sup> September 2010. This is found to be appropriate and it is accepted.	OK
B.1.2. Is there any specific guidance (including the Tools) provided by EB and has these guidance been applied?	VVM Para.68-69 PDD section B (B.1-B.2)	DR	The PDD has applied following tools.  Tool to calculate the emission factor for an electricity system version 02.2.1 (latest version) and Tool for the demonstration and assessment of additionality version 06.0.0 The applied tools are latest version available on the UNFCCC website. The request for registration through methodology ACM0002 version 12.3.0 can be submitted till 11 <sup>th</sup> January 2013.	OK

B.2. Choice and Applicability of methodology				
<p>B.2.1. Is the selected approved methodology applicable to the project activity in the PDD?</p>	<p>VVM Para. 66a/68/73/75 PDD section B (B.1-B.2)</p>	<p>DR</p>	<p>CAR 04 is raised:</p> <p>The applied methodology i.e. ACM0002 version 12.2.0 is superseded by ACM0002 version 12.3.0, which is active and Valid from 17 Sep 2010 onwards. Thus, PP is requested to update the whole PDD with the latest version of the methodology used.</p> <p>The selected approved methodology is applicable to the project activity as mentioned in the PDD. The latest version of the methodology viz; ACM0002, version 12.3.0 has been applied by the project participant in the revised version of the PDD. Hence the CAR is <b>closed</b>.</p>	<p>CAR 04 closed.</p> <p>Y</p>
<p>B.2.2. Is the discussion in the PDD in conformance with all applicability criteria of the applied methodology?</p>	<p>VVM Para.70-76 PDD section B (B.1-B.2)</p>	<p>DR</p>	<p>Section B.2 of the PDD discussed the conformance of the proposed project activity with the applicability criteria of the methodology ACM0002 version 12.3.0. The selected methodology is applicable to the project activity; same has been checked by the assessment team and found in line with ACM0002 version 12.3.0.</p> <p>CAR 04 is raised and closed above.</p> <p>The justification provided in the PDD is in conformance with the applicability criteria of the applied methodology.</p>	<p>CAR 04 closed.</p>
<p>B.2.3. Is there any GHG emissions occurring within the project boundary as a result of the implementation of the proposed project which are expected to contribute more than 1% of the overall expected average annual ERs, which are not addressed by the applied methodology.</p>	<p>VVM Para 77</p>	<p>DR</p>	<p>Yes, project boundary gives clear understanding of emission sources related to the baseline scenario. No project emissions involved as project activity involve electricity generation through windmills. Also no leakage emissions involved as equipment isn't transferred from another activity or to another activity. Section B.3 of PDD clearly indicates pictorial representation of the project boundary.</p> <p>There is no GHG emission occurring within the project boundary as a result of implementation of the proposed project which is expected to contribute more than 1 % of the overall expected annual ERs. it has been discussed during the site visit with the PP and found in line with the para 77 of VVM</p>	<p>Y</p>

B.2.4. Is the applicability of the selected methodology satisfied?	VVM Para.76	DR	All the applicability criteria mentioned in the PDD have been checked by the assessment team with the methodology ACM0002 version 12.3.0 and found correct.	Y
<b>B.3. Project Boundary</b>				
B.3.1. Does the project boundary include the physical delineation of the proposed CDM project activity?	VVM Para. 78-80 PDD section B.3 also see section A.4.3	DR	The project boundary involves the WTGs involved in project activity, transformer, metering system, substation and NEWNE national grid. Same has been described under section B.3 of the PDD. Same is checked by the assessment team with the methodology and found correct.  The project boundary includes the physical delineation of the proposed CDM project activity.	CAR#3 OK CAR #3 closed out.
B.3.2. 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?	VVM Para.79-80 PDD section B.3	DR	The table in Section B.3 of the PDD mentions the sources and gases included in the boundary for the baseline as well as project scenario. Suitable justifications have also been provided for the same which are found to be in line with the approved methodology ACM0002 version 12.3.0.  All emission sources and gases related to the baseline scenario, project scenario and leakage are clearly identified and described in a complete and transparent manner. There is no 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.	Y
B.3.3. In case of grid connected electricity projects: Is the relevant grid correctly identified in accordance with the latest version of tool to calculate emission factor of electricity system (wherever applicable) and the underlying methodology?	VVM Para.79 PDD section B.3 EB 50 Annex 14	DR	CAR#13 is raised: The calculation of simple operating margin emission factor in not found non-compliance with the EB 63 Annex 19 Page 10 and CEA data base version 07.  The project activity generates electricity and supplied the same to NEWNE grid and southern regional grid of India. The grid selected is as per the CEA database version 07, which provides the reference of "tool to calculate emission factor of electricity system" version 2.2.1. Final PDD and ER calculation spreadsheet is checked and confirmed that the calculation of combined margin emission factor is found correct in line with "tool to	CAR 13 raised and closed. Y

			calculate emission factor of electricity system” version 2.2.1. CAR # 13 is closed.	
B.3.4. 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.4.3	DR	All sources & GHGs required by the methodology ACM002 version 12.3.0 have been mentioned in section B.3 of the PDD. Same is checked by the assessment team and found correct.	Y
<b>B.4. Identification of the Baseline Scenario</b>				
B.4.1. 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/tool and has the application of the tools as per methodology been consulted, if the Tool(s) are required by the methodology?	VVM Para. 82/86 PDD Section B.4/B.5	DR	<p>Identification of the most likely baseline has been done properly i.e. baseline scenario as arrives at fossil fuel based electrical energy generation at grid and is in line with the methodology ACM002 version 12.3.0 and as described in “Tool to calculate the emission factor for an electricity system”.</p> <p>This has been discussed in section B.4 and B.5 of the PDD as per steps 1 and 2 of the tool for demonstration and assessment of additionality.</p>	Y
B.4.2. Have all applicable CDM requirements been taken into account in the identification of the baseline scenario, including “relevant national and/or sectoral policies and circumstances?	VVM Para.85/87(d) EB 22 Annex 3 EB 53 Annex 32	DR	<p>The identified baseline scenario includes technologies and practices that include outputs or services comparable with the CDM project activity. Also the additionality confirms relevant financial national policies and circumstances are considered in the PDD.</p> <p>CAR 06 was raised:</p> <p>National policies and circumstances relevant to the baseline of the proposed project activity were not summarized in section B.4 of the web hosted PDD as per the requirement of paragraph 85 of VVM/version 1.2. Please include the same.</p> <p>All the applicable CDM requirements to identify of baseline scenario have included</p>	<p>CAR 06 closed.</p> <p>Y</p>

			in the project activity. All national and sectoral policies are applied to in the determination and assessment of input values used in the investment analysis. All the national and sectoral policies are considered in the project activity and it is clearly referenced in the PDD. Same has been checked by the assessment team and found in line with the VVM para 85/87 (d) and EB 53 Annex 32	
B.4.3. Are all potential realistic and credible alternative scenarios listed in the methodology are considered in identification of the most reasonable baseline scenario? Are all scenarios are reasonable in the con-text of the proposed CDM project and no reasonable alternative scenario has been excluded?	VVM Para. 81-84 PDD Section B.4/B.5	DR	Since the project activity does not modify or retrofit an existing facility, the applicable baseline shall be the electricity delivered to the grid by the project would have otherwise been generated by the operation of grid-connected power plants. Thus, continuation of current practice is taken as the most possible baseline. All the alternatives are in compliance with mandatory laws and regulatory requirements at both at national and local level. Same has been checked by the assessment team and found in line with the methodology requirement.	Y
B.4.4. Is conservativeness addressed in the way of identifying the baseline?	VVM Para.90 PDD Section B.4/B.5	DR	Yes. Project Participant has considered all the parameters in a conservative manner and published data of Central Electricity Authority itself has considered conservativeness while identifying the baseline emission factor.  Since the project activity does not modify or retrofit an existing facility, the applicable baseline shall be the electricity delivered to the grid by the project would have otherwise been generated by the operation of grid-connected power plants. Thus, continuation of current practice is taken as the most possible baseline. All the alternatives are in compliance with mandatory laws and regulatory requirements at both at national and local level. All the equations and parameters have been correctly applied. Same is checked by the assessment team and found in line with para 90 of VVM.	Y
B.4.5. Is there a verifiable description of the baseline	VVM Para.86 PDD Section	DR	The baseline scenario has been identified as per steps 1 and 2 of the tool for demonstration and assessment of additionality. Section B.4 & B.5 of the PDD	Y

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?	B.4/B.5		mentions the possible alternatives to the project activity that could be implemented in the absence of the proposed project activity.	
B.4.6. Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	VVM Para.92 a-e PDD Section B.4/B.5	DR	As per applied methodology ACM0002, if the project activity is the installation of a new grid connected renewable power plant/unit, the baseline scenario is the following:  Electricity delivered to the grid by the project activity would have otherwise been generated but the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculation described in the "Tool to calculate the emission factor for an electricity system".  Thus, the PDD identifies the most likely baseline scenario as fossil fuel based electrical energy generation. This has been discussed in section B.4 and B.5 of the PDD as per steps 1 and 2 of the tool for demonstration and assessment of additionality.	Y
<b>B.5. Additionality</b>				
B.5.1. Does the PDD clearly demonstrate the additionality using the approach as specified in the methodology and by following all the required steps?	VVM Para. 94-97 PDD Section B.1/B.4/B.5	DR	Yes, Section B.5 of the PDD demonstrates additionality using steps 1, 2 & 4 of the tool for demonstration and assessment of additionality version 6.0.0 which is in line with the approach specified in the methodology ACM0002 version 12.3.0.	Y
B.5.2. 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	PDD Section B.1/B.4/B.5	DR	"Tool for the demonstration and assessment of additionality" version 6.0.0 has been used in the project activity to demonstrate additionality. This is the latest version available on UNFCCC website; same is checked by the assessment team and found correct.  CL 08 was raised:	CL#08 Closed.  Y

<p>changes impact the discussion in the PDD? Are all steps followed in a transparent manner?</p>			<ol style="list-style-type: none"> <li>1. PP is requested to justify how the PLF and Effective PLF considered for the investment analysis is as per EB 48 Annex 11 and as per paragraph 6 of EB 62 annex 5.</li> <li>2. Please provide documentary evidence in support of conceptualizing the project based on GBI incentive, in doing so please refer Para 111a of VVM. ver 1.2</li> <li>3. Please justify and substantiate with verifiable documentary evidence the considered interest rate, Moratorium, disbursement Schedule, repayment schedule and availability of such information at the time of decision making in doing so please refer Para 16 of EB62 Annex5 and Para 6 of EB62 Annex 5.</li> <li>4. Please explain and substantiate the considered Land cost and Land lease chargers in doing so please refer Para 111a of VVM. ver 1.2</li> <li>5. PP needs to justify the considered residual value in investment analysis, in doing so please refer Para 4 of EB62 annex 5.</li> <li>6. Please justify why tax benefit arising from allowed income tax depreciation has not been considered in Equity IRR calculation. Please consider the same and correct Income tax calculation accordingly in doing so please refer 111(d) of VVMver1.2.</li> </ol> <p>CL#08 is closed based on satisfactory response by PP along with supportive evidences.</p>	
<p>B.5.3. 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</p>	<p>Project participant needs to submit evidence for each value used in the financial calculation. Considering this issue CL 08 is raised during the course of validation.</p> <p>Project Participant submitted references and sources for all input values used in the IRR and benchmark calculation for the project activity. This is found to be appropriate and it is accepted.</p>	<p>CL 08 Closed Y</p>

<p>B.5.4. 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</p>	<p>VVM Para.98-99          VVM Para.103-104          PDD Section B.5</p>	<p>DR</p>	<p>The starting date of project activity is 18/01/2011, which is prior to the date of publication of PDD for stakeholder consultation. The start date is considered as the date of purchase order issued by the PP for WTGs. This is the real action taken by the PP to invest in the project activity.</p> <p>The purchase order has been checked by the assessment team and found in line with Glossary of CDM terms. As the star date of the project activity is after 2<sup>nd</sup> August 2008, The PP is requested to provide the communication provided to the UNFCCC and host country DNA for serious CDM consideration as per para 2 of EB 62 annex 13 guidelines. Also as per para 4 of the same guideline the PP is requested a proof of acknowledgement of the same from UNFCC.</p> <p>Considering this issue CAR#7 is raised during the course of validation:</p> <ol style="list-style-type: none"> <li>1. PP is requested to demonstrate the prior consideration of the CDM in line with EB 62 annex 13.</li> </ol> <p>CAR#7 closed based on the verification of all the evidences.</p>	<p>CAR#7          Closed          Y</p>
<p>B.5.5. Is the project activity a new project activity or existing project activity? How is the early consideration demonstrated?</p>	<p>VVM Para.100-102          PDD Section B.5</p>	<p>DR</p>	<p>As the star date of the project activity is after 2<sup>nd</sup> August 2008, The PP is requested to provide the communication provided to the UNFCCC and host country DNA for serious CDM consideration as per para 2 of EB 62 annex 13 guidelines. Also as per para 4 of the same guideline the PP is requested a proof of acknowledgement of the same from UNFCC. Considering this issue CAR#7 is raised during the course of validation.</p> <p>The project activity start date is 18/01/2011 which falls under new project activity. PP has informed in writing to UNFCCC and host DNA regarding their intention to seek CDM status using the F-CDM-Prior Consideration form dated 16/08/2011 and resubmission of F-CDM-Prior Consideration form on 07/03/2011. This is checked on UNFCCC and also acknowledgement from DNA is validated and thus confirmed that notification related to CDM considerations were submitted to NCDMA and UNFCCC within six months of project start date and hence accepted</p> <p>CAR#7 closed based on the verification of all the evidences.</p>	<p>Pending closure of CAR#7          Closed          Y</p>

<p>B.5.6. For an existing project activity with a start date before 2 August 2008, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation, is the real documented evidence for an assessment of real and continuing actions available for validation and is this evidence authentic?</p>	<p>EB 62, annex13</p>	<p>DR</p>	<p>As the start date of the project activity is after 2nd August 2008 (new project activity). Thus, this not applicable as per EB 62 annex 13.</p> <p>This is a new project activity.</p>	<p>NA</p>
<p>B.5.7. Are all credible and plausible alternatives correctly identified? Do the identified baseline scenarios include technologies and practices that include outputs or services comparable with the proposed CDM project activity? Do they also abide by the same applicable laws and legislations?</p>	<p>VVM Para.105-107</p>	<p>DR</p>	<p>As per the approved methodology ACM0002 version 12.3.0, no project scenario can be considered as credible alternative to said project activity and the generated equivalent amount of electricity; it would be done through existing and future additions to the respective grid which are dominated by fossil fuel based power station. Thus, the continuation of current practice is taken as the most possible alternative. Same is checked by the assessment team and found correct.</p> <p>The discussion on additionality is consistent with the identification of all plausible and credible baseline scenarios as per “Tool for the demonstration and assessment of additionality” version 06.0.0.</p>	<p>Y</p>
<p>B.5.8. If an investment analysis has been used, has it been demonstrated that the proposed project activity is not the most economically or financially attractive alternative, or is not economically or financially feasible, without</p>	<p>VVM Para. 108-109  PDD Section B.5</p>	<p>DR</p>	<p>The project participant has considered investment analysis to demonstrate additionality of project activity, benchmark analysis has been considered for the investment analysis and the equity IRR has been considered as financial indicator as per the EB62 annex 5. CAPM is used which is well accepted methodology FOR RoE calculation.</p> <p>However, CL #08 is raised during the course of validation.</p>	<p>CL#08  Closed  Y</p>

the revenue from the sale of CERs.				
B.5.9. Is the investment analysis carried out in accordance with specific guidance from EB?	VVM Para. 110 EB 62 Annex 5 EB 48 Annex 11	DR	Guideline on the assessment of Investment analysis, version 5, EB 62 Annex 5 has been considered for investment analysis. This is the latest version available on UNFCCC website; same has been checked by the assessment team and found in correct. However, Pending closure of CL#08	Pending closure of CL#08 Closed Y
B.5.10. Is the investment analysis complete and accurate? (Important)	VVM Para. 111 PDD Section B.5 EB 62 Annex 5 EB 54 Para 53 EB 53 Annex 32	DR	The PP has considered Guideline on the assessment of Investment analysis, version 5, EB 62 Annex 5 for investment analysis. This is the latest version available on UNFCCC website. However, the assessment team has conducted a thorough analysis against VVM para 111 and found some inconsistencies as described under CL#08.	Pending closure of CL#08 Closed Y
B.5.11. Does the investment analysis rely on the values from Feasibility Study Reports (FSR) that approved by national authorities for proposed CDM project activity?	VVM Para. 113 PDD Section B.5	DR	The values used in the investment analysis have not been considered from the FSR, all the values considered for investment analysis has been clearly referenced in the PDD and the investment analysis spreadsheet. However, Pending closure of CL#08	Pending closure of CL#08 CL#08 Closed.
B.5.12. 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 project developer).	VVM Para. 112 PDD Section B.5 EB 62 Annex 5 EB 51 Annex 59	DR	The project participant has considered investment analysis to demonstrate additionality of project activity, benchmark analysis has been considered for the investment analysis and the equity IRR has been considered as financial indicator as per the EB62 annex 5. CAPM is used which is well accepted methodology for estimating the RoE (return on equity as benchmark).  However, CAR#12 is raised during the course of validation:  Based on the assessment of benchmark calculation approach, Please address following points:	CAR#12 Closed Y

			<p>1. Please justify the risk free rate in the decision making context.</p> <p>2. Please justify the choice of index to calculate return on equity and time period considered to calculate the same.</p> <p>3. Please justify the rationale behind choice of companies to calculate beta.</p> <p>CAR #12 is closed satisfactorily based on the response and corrective action taken by PP.</p>	
B.5.13. 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. 115/118 PDD Section B.5	DR	Not applicable since barrier analysis has not been used	Y
B.5.14. Is the discussion on additionality consistent with the identification of all plausible and credible baseline scenarios?	VVM Para. 105 PDD Section B.5	DR	Not applicable since barrier analysis has not been used	Y
B.5.15. Has the barriers correctly identified and they prevent the implementation of the project activity but not the implementation of at least one of the possible alternatives.	VVM Para. 116-117	DR	Not applicable since barrier analysis has not been used	Y

<p>B.5.16. 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?</p>	<p>VVM Para 116-117          EB 50 Annex 13</p>	<p>DR</p>	<p>Not applicable since barrier analysis has not been used</p>	<p>Y</p>
<p>B.5.17. Do the identified baseline scenarios include technologies and practices that include outputs or services comparable with the proposed CDM project activity? Do they also abide by the same applicable laws and legislations?</p>	<p>VVM Para. 105          PDD Section A.4.3/B.5</p>	<p>DR</p>	<p>Since the project activity does not modify or retrofit an existing facility, the applicable baseline shall be the electricity delivered to the grid by the project would have otherwise been generated by the operation of grid-connected power plants. Thus, continuation of current practice is taken as the most possible baseline. All the alternatives are in compliance with mandatory laws and regulatory requirements at both at national and local level. Same has been checked by the assessment team and found in line with the methodology requirement.</p>	<p>Y</p>
<p>B.5.18. Is the proposed project type justified as first-of-its kind?</p>	<p>VVM Para. 119          EB69 Annex 7          PDD Section B.5</p>	<p>DR</p>	<p>The PP has demonstrated the common practice analysis as per the requirement of tool for the demonstration and assessment of additionality version 6.0.0.</p> <p>However, PP is requested to justify how the common practice analysis carried out for project activity is in line with the Guideline on Common practice published in EB 69 Annex 08. Considering this issue CAR#9 is raised during the course of validation.</p> <p>In response, PP has submitted revised PDD with step wise discussions of the common practice analysis in line with EB 69 Annex 08. Validation team has independently reviewed all the steps of the common practice analysis based on the third party published evidences and confirmed that the proposed CDM project is not a common practice in host country (considered geographical area). Hence, CAR#9 is closed</p>	<p>CAR#9          Closed          Y</p>

<p>B.5.19. Is the project activity not common practice?</p>	<p>VVM Para. 120-121          PDD Section B.5          EB 69 Annex 08</p>	<p>DR</p>	<p>The PP has demonstrated the common practice analysis as per the requirement of tool for the demonstration and assessment of additionality version 6.0.0</p> <p>However, PP is requested to justify how the common practice analysis carried out for project activity is in line with the Guideline on Common practice published in EB 69 Annex 08. Considering this issue CAR#9 is raised during the course of validation.</p> <p>In response, PP has submitted revised PDD with step wise discussions of the common practice analysis in line with EB 69 Annex 08. Validation team has independently reviewed all the steps of the common practice analysis based on the third party published evidences and confirmed that the proposed CDM project is not a common practice in host country (considered geographical area). Hence, CAR#9 is closed</p>	<p>CAR#9          Closed          Y</p>
<p>B.5.20. What are the key distinctions between the project activity and any similar projects that are widely used as common practice?</p>	<p>VVM Para. 118, 119c/d          PDD Section B.5          EB 69 Annex 8          EB69 Annex 7</p>	<p>DR</p>	<p>The PP has demonstrated the common practice analysis as per the requirement of tool for the demonstration and assessment of additionality version 6.0.0.</p> <p>CAR#9 is raised during the course of validation and same is closed.</p>	<p>CAR#9          Closed          Y</p>
<p>B.5.21. Is the proposed project activity additional?</p>	<p>PDD Section B.5</p>	<p>DR</p>	<p>The PP has carried out the additionality assessment as per the requirement of tool for the assessment and demonstration of additionality version 6.0.0.</p> <p>To conclude the same, validation team has raised CAR 07, CL 08, CAR 08 and CAR 12. All findings are closed satisfactory.</p> <p>Based on the independent assessment, it is confirmed that proposed CDM project is additional.</p>	<p>CAR 07, CL 08, CAR 08 and CAR 12 are closed          Y</p>
<p><b>B.6. Algorithms and/or formulae used to determine emission reductions</b></p>				
<p>B.6.1. Are the steps and equations applied to calculate baseline</p>	<p>VVM Para. 67c</p>	<p>DR</p>	<p>All the steps and equations applied to calculate the baseline emission have been applied correctly under B.6.1 of the PDD. Same has been checked with the</p>	<p>Y</p>

emissions in compliance with the requirements of selected baseline and monitoring methodology?	VVM Para. 89-90 VVM Para. 93 PDD Section B.6.1		methodology by the assessment team and found correct.	
B.6.2. Are the steps and equations applied to calculate project emissions in compliance with the requirements of selected baseline and monitoring methodology?	VVM Para. 67c VVM Para. 89-90 VVM Para. 93 PDD Section B.6.1	DR	All the steps and equations applied to calculate the project emissions have been applied correctly. Same has been checked by the assessment team and found in line with the approved baseline and monitoring methodology ACM002 version 12.3.0.  No project emissions are involved in the project activity as project being electricity generation through wind power project (renewable energy generation)	Y
B.6.3. Are the steps and equations applied to calculate leakages in compliance with the requirements of selected baseline and monitoring methodology?	VVM Para. 67c VVM Para. 89-90 VVM Para. 93 PDD Section B.6.1	DR	No leakage are involved in the project activity as project being electricity generation through wind power project (renewable energy generation).  Further checked that there is no emission arising due to activities such as power plant construction and upstream emissions from the fossil fuel. Same is checked by the assessment team and found in line with the methodology requirement.	Y
B.6.4. Are the steps and equations applied to calculate emission reductions in compliance with the requirements of selected baseline and monitoring methodology?	VVM Para. 67c VVM Para. 89-90 VVM Para. 93 PDD Section B.6.1	DR	All the steps and equations applied to calculate the emission reduction have been checked by the assessment team and found in compliance with the methodology ACM002 version 12.3.0	Y

<p>B.6.5. 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?</p>	<p>VVM Para.89/90/91          PDD Section B (B.6.2 -B.71)</p>	<p>DR</p>	<p>To calculate emission reduction as per the “Tool to calculate the emission factor for an electricity system” PP has choose ex-ante emission factor (combined margin). Methodological choice is clearly explained in the PDD and is in compliance with the applicable methodology.          Same has been checked by the assessment team and found in compliance with the applicable baseline and monitoring methodology ACM0002 version 12.3.0</p>	<p>Y</p>
<p>B.6.6. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?</p>	<p>PDD Sections B.5-C</p>	<p>DR</p>	<p>There are no uncertainties found in the GHG emission estimates in this project activity. Same is checked by the assessment team and found in line with the methodology i.e. ACM0002 version 12.3.0</p>	<p>Y</p>
<p>B.6.7. Are the ex-ante fixed data provided in compliance with the methodology and/or relevant tools (if applicable)?</p>	<p>VVM Para. 67c          VVM Para. 91          VVM Para. 93          PDD Section B.6.3B.6.4</p>	<p>DR</p>	<p>The ex-ante fixed data provided to calculate emission reduction is in compliance of “Tool to calculate the emission factor for an electricity system”. This is as per the applicable methodology.          PP has considered the ex-ante emission factor for NEWNE grid of India. As per the “Tool to calculate the emission factor for an electricity system” version 2.2.1, the CEA database version 07 has been considered to calculate the emission factor. Same is checked by the assessment team and found in line with the tool and CEA database version 07.            However, during the course of validation, CAR 13 is raised:            The calculation of simple operating margin emission factor in not found in compliance with the EB 63 Annex 19 Page 10 and CEA data base version 07.  <b>Open</b>            In the revised PDD, PP has updated the version 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.            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</p>	<p>CAR 13 closed.            Y</p>

			<p>been verified from the tool and found to be inline.</p> <p>The Operating Margin (OM) is determined using <u>the ex-ante option</u> for data using 3-year generation-weighted average, based on the most recent data available at the time of submission (year 2008-09, 2009-10 and 2010-11) and will remain fixed throughout the crediting period. Closed.</p>	
B.6.8. Is all the data derived from official data sources or replicable records and have these been correctly quoted?	VVM Para. 92a/b PDD Section B.6.3/B.6.4	DR	<p>All the data for considered to calculate the emission factor has been considered from the CEA data base version 07 and it is clearly referenced in the PDD, which was valid at the time of PDD<sup>1.1/</sup> webhosting. Same is checked with the official website of CEA and found correct.</p> <p>Emission factor from “CO<sub>2</sub> Baseline Database for the Indian Power Sector” , version 07 published by Central Electricity Authority (CEA), Ministry of Power, Government of India is used for emission reduction calculations which is official published data.</p>	Y
B.6.9. Is the vintage of the baseline data correct?	PDD Section B.6.3/B.6.4	DR	<p>All the data for considered to calculate the emission factor has been considered from the CEA data base version 07 and it is clearly referenced in the PDD, which was valid at the time of PDD<sup>1.1/</sup> webhosting. Version 07 of the CEA database is the latest version available on CEA website. Same is checked with the official website of CEA and found correct.</p>	Y
B.6.10. Is all the data appropriate and correctly applied to the CDM project activity?	VVM Para. 92c PDD Section B.6.3/B.6.4	DR	<p>Emission factor for the NEWNE grid is the only parameters used in the project activity. Same has been checked by the assessment team and found correct.</p> <p>The baseline data is checked for accuracy &amp; conservativeness. These are found to be conservatively applied to the CDM project activity.</p>	Y
B.6.11. 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. 91 PDD Section B.6.3/B.6.4	DR	<p>Emission factor used in the calculation of emission reductions is Combined Margin Grid emission rate with ex-ante approach. This is fixed throughout crediting period hence need not to be monitored during the periodic verifications.</p>	Y
B.6.12. Are the ex-post monitored data estimated	VVM Para.	DR	<p>All the ex-post monitored data estimated for the ex-ante emission reductions are applied correctly and conservative manner.</p>	Y

appropriated for calculation of ex-ante emission reductions?	67c VVM Para. 92 VVM Para. 93 PDD Section B.6.3B.6.4			
B.6.13. Is sampling approach used for any parameters?	EB 50 Annex 30 Para. 30	DR	Sampling approach is not required for any parameter.	Not applicable
B.6.14. Are all the steps taken and equations applied to calculate project emissions, baseline emissions and leakage and emission reductions correct and appropriate?	VVM Para. 67c VVM Para. 92	DR	The steps taken and equations applied to calculate the project emission, baseline emission, leakage and emission reduction have been correctly. Same has been checked by the assessment team and found in compliance with the applicable baseline and monitoring methodology ACM0002 version 12.3.0  All the parameters used to calculate baseline emissions, project emissions, leakage and emission reductions in the PDD and ER sheet are as per the "Tool to calculate the emission factor for an electricity system". This is in compliance with the applicable methodology and results can be replicated using the parameter values provided in the PDD.	Y
B.6.15. Where applicable, 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	EB 48 Annex 11	DR	Yes, the PP has provided the third party assessment report for PLF determination in line with EB48, Annex 11.  Based on the webhosted PDD version 01: CL#08 was raised  1. PP is requested to justify how the PLF and Effective PLF considered for the investment analysis is as per EB 48 Annex 11 and as per paragraph 6 of EB 62 annex 5.  The PLF is based on third party estimation i.e. "25.2MW Gujarat Wind Farm Wind Resource and Energy Yield Assessment" performed by Parsons Brinckerhoff I India Pvt. Limited. Estimation of PLF by third party organization confirms the guidelines for the reporting and validation of Plant Load Factors. Further validation team has checked the Tariff Order issued by state of Gujarat (available at the time of	Pending closure of CL#08 Closed Y

<p>contracted by the project participants (e.g. an engineering company)</p>			<p>investment decision) which shows the PLF value of 23%. The sensitivity analysis shows that the benchmark will be crossed if the PLF increases by 28% (PLF=29.37%). It is most likely that this won't happen as this on one hand is one of the highest PLFs in this region as checked from the published records. Thus the value applied is deemed as reasonable and acceptable. Hence CL 08 (#1) <b>is closed.</b></p>	
<p><b>B.7. Monitoring methodology and Monitoring Plan</b></p>				
<p>B.7.1. Does the monitoring methodology provide a consistent approach in the context of all parameters to be monitored and further information provided by the PDD?</p> <p>Are all parameters and data that are available at validation consistent with the approved methodology. Has this data been interpreted and applied correctly?</p>	<p>VVM Para. 67e          PDD Section B.7-B.8 see also Annex 4          EB69 Annex 4          EB69 Annex 5</p>	<p>DR          SV</p>	<p>Yes, monitoring methodology provide a consistent approach in the context of all parameters to be monitored and further information provided by the PDD. Emission factor is used as an Ex-ante parameter used. All parameters and data those are available at validation consistent with the applicable methodology. These data have been interpreted and applied correctly.</p> <p>During site visit it is found that parameters to be monitored for all the project location i.e. Gujarat are assessed.</p> <p>A consolidated CAR10 was raised based on the webhosted PDD version 01:</p> <ol style="list-style-type: none"> <li>1. Section B.7.1 of PDD/version 01 does not provide a transparent description of the measurement methods and procedures in line with CDM-PDD guideline, version 07.</li> <li>2. Section B.7.1 of PDD/version 01 does not specify the accuracy level of energy measurement equipments in line with accepted industry standards or national or international standards and also this section shall describe the details of calibration procedures to apply in line with CDM-PDD guideline, version 07.</li> <li>3. PP shall justify the <b>monitoring/recording frequency</b> and <b>Measurement methods and procedures</b> for the monitoring of <math>E_{G_{facility,y}}</math> in-line with ACM 0002 Version 12.2.0.</li> <li>4. Source of data to be used for <math>EG_{PJ,y}</math> (<math>EG_{facility,y}</math>), <math>E_{exp}</math> and <math>E_{imp}</math> is not correct as per on-site assessment.</li> <li>5. In section B.7.1 of PDD, QA/QC procedures to be applied for <math>EG_{PJ,y}</math> (<math>EG_{facility,y}</math>) is</li> </ol>	<p>CAR#10          Closed          Y</p>

			<p>not found included as per the requirement of ACM 0002 Version 12.2.0.</p> <p>6. As per Annex-4 of PDD/version 01, both main and check meter are installed at the project site (at each WEG end) for the monitoring of export and import of electricity by each WEGs, however, as per on-site assessment, only main meter (Tri-vector meter referred as <b>EB meter</b>) is installed for the monitoring of export and import of electricity by each WEGs. Pls. correct the inconsistency.</p> <p>7. As per on-site assessment, an ABT energy meter is installed at the nearby substation which measures both import and export electricity by the Wind farm. However, Annex-4 of PDD/version 01 refers it as <b>bulk meter</b>. Kindly correct the inconsistency and also provide the transparent description on the use of ABT meter in relevant section of PDD.</p> <p>8. Calibration frequency for all energy meters involved in the monitoring as defined in section B.7.1 and Annex 4 of PDD/version 01 is not in-line with the submitted PPA with Gujarat Urja Vikas Nigam Limited (GUVNL). Pls. correct the inconsistency.</p> <p>9. PP is asked to identify procedures for training of monitoring personnel and for internal audits of GHG project compliance with operational requirements where applicable.</p> <p>PP has submitted revised PDD and The monitoring plan is in accordance with the monitoring methodology; the monitoring plan will give opportunity for real measurement of achieved emission reductions.</p> <p>Validation team has checked all the parameters presented in the monitoring plan against the requirements of the methodology; no deviations relevant to the project activity have been found in the plan. Validation team confirms that the monitoring arrangements described in the monitoring plan are feasible within the project design, and the means of implementation of the monitoring plan are sufficient to ensure the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex-post and verified. CAR 10 is <b>closed</b>.</p>	
<p>B.7.2. Is the monitoring plan compliant with the approved monitoring methodology and/or relevant tools (if</p>	<p>VVM Para. 123(a)  PDD Section B.7</p>	<p>DR  SV</p>	<p>Pending closure of CAR#10</p> <p>Yes, the monitoring plan completely describe all measures to be implemented for monitoring all parameters required, including measures to be implemented for</p>	<p>Pending closure of CAR#10  Closed</p>

applicable)?			ensuring data quality. This is in compliance with the applicable methodology.	Y
B.7.3. Is the implementation of monitoring plan feasible and verifiable.	VVM Para. 123(b) PDD Section B.7	DR SV	Pending closure of CAR#10  Yes, implementation of monitoring plan is completely feasible and verifiable as WTG supplier is involved in the O & M of the project activity.	Pending closure of CAR#10 Closed Y
B.7.4. Is it ensured that data provisions will be free of potential conflicts of interests resulting in a tendency of overestimating emission reductions?	VVM Para. 19	DR	No potential conflicts of interests as emission reductions are based on net electricity supplied to the grid. Same will be crosschecked against share certificate issued by GETCO (a regulatory body). Hence risk is nullified.	Y
B.7.5. Is the proposed monitoring plan compliance with the methodology/tools and feasible for implementation?	VVM Para. 124	DR	Pending closure of CAR#10  Yes, proposed monitoring plan is in compliance with the applicable methodology. WTG supplier is ISO certified organization and having established data management system. WTG supplier is involved in the O & M, online monitoring and preparation of electricity generation report with state electricity board for this project activity. Hence, this is completely feasible and verifiable for implementation.	Pending closure of CAR#10 Closed Y
B.7.6. Does the information contained in Annex 4 in consistency with the information in Section B.7 of PDD?	PDD Annex 4	DR	PP has not included any extra information's related to the monitoring plan of the proposed CDM project activity in Annex-4 of final PDD <sup>1.7/</sup> .	Y
B.7.7. Does the monitoring plan in the PDD comply with the approved methodology provided for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions	VVM Para. 92a/92d/123/79 PDD Section B.7-B.7.2	DR	All the monitoring data being archived on paper and electronically and the period of storage of data will be 2 years after the end of crediting period or till the last issuance of CERs for the project activity whichever occurs later. Same has been checked by the assessment team and found in line with the methodology.  Yes, the monitoring plan in the PDD is in compliance with the applicable methodology.	Y

	within the project boundary during the crediting period?				
B.7.8.	Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the approved methodology applied?	PDD Section B.7-B.7.2/B.6.2	DR	<p>Pending closure of CAR#10</p> <p>Yes, the choices of the GHG indicators are in conformance with the applicable methodology.</p>	<p>Pending closure of CAR#10</p> <p>Closed</p> <p>Y</p>
B.7.9.	Will it be possible to determine the specified project GHG indicators?	PDD Section B.6.2-B.8	DR	<p>Pending closure of CAR#10</p> <p>The net electricity supplied and the amount of electricity imported from the grid can be measured accurately. Although as a common monitoring system is involved at the substation and hence a, apportioning procedures is involved to determine the net electricity supplied by the project activity WTGs to the grid. Since the apportioning procedures are defined by GETCO (an regulatory body) and based on the same, PP raised the invoices to the GETCO. Further, the apportioning procedures were discussed with the representative of GETCO at the substation and apportioning approach is independently reviewed by the sectoral expert and found correct as it also evaluate the transmission and transformer losses as well, hence the procedures is acceptable. The emission reductions are being calculated based on the same</p>	<p>Pending closure of CAR#10</p> <p>Closed</p> <p>Y</p>
B.7.10.	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	DR	<p>Pending closure of CAR#10 &amp; CAR#11</p> <p>CAR#11 is raised:</p> <p>Section B.7.1 of the webhosted PDD did not indicate that the data monitored and required for verification and issuance are to be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later</p> <p>Section B.7.1 of PDD is revised and provision of the data archiving is clearly indicate that the monitored data will be archived for two years after the end of the last crediting period or till the last issuance of CERs for the project activity, whichever is later. The same is found in compliance with EB 41/Annex 12. Thus,</p>	<p>Pending closure of CAR#10 &amp; CAR#11</p> <p>Closed</p> <p>Y</p>

			CAR#11 is <b>closed</b> .	
			Yes, in the revised PDD, the information given for each monitoring variable by the presented table is sufficient to ensure the verification of a proper implementation of the monitoring plan.	
B.7.11. Is the monitoring approach in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?	PDD Section B.5-B.7.2	DR	Pending closure of CAR#10  Yes, the monitoring approaches in line with current good practice. It will deliver data in a reliable and reasonably acceptable accuracy.	Pending closure of CAR#10  Closed  Y
B.7.12. 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	No project emissions are involved in the project activity as project being electricity generation through wind power project.	Y
<b>B.8. Operational and Management Structure</b>				
B.8.1. Is the authority and responsibility of project management clearly described?	PDD Section B.7	DR	Section 7.2 of the PDD mentions the name of the person responsible for the project management	Y
B.8.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD Section B.8	DR	The authority and responsibility of project management has been clearly described in the Section 7.2 of PDD.	Y
B.8.3. Are procedures identified for training of monitoring personnel?	PDD Section B.7	DR	The O & M supplier has employed qualified personnel and they are imparted with routine trainings by the O & M supplier being ISO 9001:2008 certified. Training procedures are verified during site visit.	Y

B.9. Baseline Information					
B.9.1.	Is the information contained in Annex 3 consistent with the Section B.4, B.5 and B.6?	PDD Annex 3	DR	Yes, the information contained in Annex 3 has been checked by the assessment team and found consistent with the section B.4, B.5 and B.6 of the PDD.	Y
B.9.2.	Is there any indication of a date when determining the baseline?	PDD Section B.8/Annex 3	DR	The baseline has been determined on 22/09/2011, as mentioned in the section B.8 of the PDD.	Y
B.9.3.	Is this consistent with the time line of the PDD history?	PDD Section B.8	DR	The baseline has been determined on 22/09/2011, which is before the date of PDD publication.	Y
B.9.4.	Is all data required provided in a complete manner by annex 3 of the PDD?	PDD Annex 3	DR	Annex 3 provides a detailed approach for the calculation of baseline emission which contains the data used for determining the baseline in addition to that mentioned in section B.6.2 of the PDD.	Y
B.9.5.	What is the documented crediting period of the project? Is this in line with available data?			The start date of the crediting period 01/12/2012 or the date of submission of complete request for request for registration whichever is later, it is found consistent with the dates. The fixed crediting period is considered for this project activity.  Total 4, 82,740 CERs are expected over the 10 years crediting period.	Y
B.9.6.	In cases where the methodology specifies, has the ' <i>Tool to determine the remaining lifetime of equipment</i> ' been correctly applied?	EB 50 Annex 15	DR	The documented lifetime of the project activity is 20 years. This is provided by the WTG supplier.	Not Applicable
B.9.7.	In cases where the ' <i>Tool to determine the remaining lifetime of equipment</i> ' has been	EB 50 Annex 15	DR	Not applicable as documented lifetime of the project activity is exceeding current crediting period.	Not Applicable

<p>used the project participants may use one of the following options to determine the remaining lifetime of the equipment:</p> <p>i. Use manufacturer's information on the technical lifetime of equipment and compare to the date of first commissioning;</p> <p>ii. Obtain an expert evaluation;</p> <p>iii. Use default values.</p>				
<b>C. Duration of the Project / Crediting Period</b>				
<p>C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?</p>	<p>VVM Para. 99  PDD Section C.1.1/C.1.2</p>	<p>DR</p>	<p>The start date of the project activity is considered 18/01/2011, which is the date of purchase order issued by the PP to equipment supplier (Suzlon Energy Limited). It is in accordance with Glossary of CDM terms. The life time of the project activity is clearly mentioned in section C of the PDD.</p>	<p>Y</p>
<p>C.1.2. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?</p>	<p>VVM Para. 102a  PDD Section C.2/C.2.1/C.2.2</p>	<p>DR</p>	<p>Section C.2 of the PDD clearly defines a fixed crediting period of 10 years for the project activity which is reasonable considering the project has a life time of 20 years.</p>	<p>Y</p>
<p>C.1.3. Does the project's operational lifetime exceed the crediting period</p>	<p>VVM Para. 102a  PDD Section C.1.2/C.2.1.1/C.2</p>	<p>DR</p>	<p>The project operational lifetime of 20 years does not exceed the fixed crediting period of 10 years.</p>	<p>Y</p>

	.1.2			
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 is 18/01/2011, thus, this is new project activity. PP has started the validation after the start date of the project activity.	Y
<b>D. Environmental Impacts</b>				
D.1.1. Does the project comply with environmental legislation in the host country?	VVM Para. 131-133 PDD section D	DR	As per the Ministry of Environment and Forests (MoEF), India Environment Impact Notification S.O. 1533 <sup>/39/</sup> ( <a href="http://envfor.nic.in/legis/eia/so1533.pdf">http://envfor.nic.in/legis/eia/so1533.pdf</a> ) dated 14 September 2006 and further Notification No. S.O. 3067 dated 1 <sup>st</sup> November 2009 ( <a href="http://moef.nic.in/downloads/rules-and-regulations/3067.pdf">http://moef.nic.in/downloads/rules-and-regulations/3067.pdf</a> ), wind power projects are not covered under any schedule and thus Environmental Impact Assessment is not required for the project activity. Further, validation team has checked the requirement of next amendment S.O. 695(E) (Amendment in EIA notification S.O.1533 (E) and released on dated 04/04/2011) <sup>/36/</sup> and confirmed that EIA is not mandatory for project type. The same is also verified through Ministry of Environment and Forest notification <sup>/39/</sup> dated Dec 01, 2009 (ref: <a href="http://moef.nic.in/downloads/rules-and-regulations/3067.pdf">http://moef.nic.in/downloads/rules-and-regulations/3067.pdf</a> ).	Y
D.1.2. Has an analysis of the environmental impacts of the project activity been sufficiently described?	VVM Para. 131-133 PDD section D	DR	Environmental Impact Assessment is not significant as generation of electricity from wind energy is a clean technology (project emission zero).	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. 131-133 PDD section D	DR	Not applicable . According to host country DNA, the EIA is not a mandatory requirement for the project activity.	Y
D.1.4. Will the project create any adverse environmental effects?	VVM Para. 131-133 PDD section D	DR	No. The proposed CDM project activity involves generation of electricity from wind energy. Hence is a clean technology (project emission zero).	Y

D.1.5. Are trans-boundary environmental impacts considered in the analysis?	VVM Para. 131-133 PDD section D	DR	Not applicable since an EIA is not required for the project activity. Also, The proposed CDM project activity involves generation of electricity from wind energy. Hence is a clean technology (project emission zero).	Y								
D.1.6. Have identified environmental impacts been addressed in the project design?	VVM Para. 131-133 PDD section D	DR	Not applicable since an EIA is not required for the project activity. Also, The proposed CDM project activity involves generation of electricity from wind energy. Hence is a clean technology (project emission zero).	Y								
<b>E. Stakeholder Comments</b>												
E.1.1. Have local stakeholders been invited by the PPs to comment on the proposed CDM project activity prior to the publication of the PDD on the UNFCCC web	VVM Para. 128-129 PDD Section E.1	D SV	<p>The local stakeholders consultation meeting were conducted prior to the publication of PDD<sup>1-1/</sup> on UNFCCC website as listed below:</p> <table border="1" data-bbox="1043 703 1877 922"> <thead> <tr> <th>Project Site</th> <th>State</th> <th>Date of Invitation</th> <th>Stakeholder consultation date</th> </tr> </thead> <tbody> <tr> <td>Bhojapara village in Surendranagar District</td> <td>Gujarat</td> <td>30/04/2011</td> <td>07/05/2011</td> </tr> </tbody> </table> <p>Further, it is not described, how the local stakeholders consultation were invited. Thus, CAR 05 (#10) was raised:</p> <p>1. Pls. justify, how appropriate is the media used to invite comments by local stakeholders.</p>	Project Site	State	Date of Invitation	Stakeholder consultation date	Bhojapara village in Surendranagar District	Gujarat	30/04/2011	07/05/2011	CAR#5 Closed Y
Project Site	State	Date of Invitation	Stakeholder consultation date									
Bhojapara village in Surendranagar District	Gujarat	30/04/2011	07/05/2011									
E.1.2. Have appropriate media been used to invite comments by local stakeholders?	VVM Para. 128-129 PDD Section E.1	D SV	<p>It is not clear how the local stakeholders were invited i.e. which media was used to invite local stakeholder. Please clarify and provide evidence for the same. Pending closure of CAR 05.</p> <p>The local stakeholders were invited through personal invitations. Invitations letters were sent to village sarpanch, contractors, local villagers etc. Copy of personal invitations sent, filled questionnaire, attendance records of local stakeholders</p>	Pending closure of car 05. Closed Y								

			meeting and minutes of the meeting of the local stakeholder consultation have been verified by Validation team. The validation team believe that the time provided to the local stakeholders for providing comments on the Project Activity is adequate. The same was verified by the validation team during the personal interaction with some of the local stakeholders during the validation site visit. Thus, adequacy of the local stakeholder consultation process is checked and found satisfactory. <b>Closed.</b>	
E.1.3. Is the undertaken stakeholder process described in a complete and transparent manner?	VVM Para. 128-129 PDD Section E.1	DR SV	Section E.1 of the PDD describes the complete stakeholder process. This will be further verified during the site visit Yes, undertaken stakeholder process described in a complete and transparent manner. It is confirmed through PP and local stakeholders interviewed during site visit.	Pending Site visit  Y
E.1.4. Is a summary of the stakeholder comments received provided?	VVM Para. 128-129 PDD Section E.2	DR SV	The stakeholder comments received have been summarized in section E.2 of the PDD. This will be further verified during the site visit No adverse comments are received.	Pending site visit Y
E.1.5. Has due account been taken of any stakeholder comments received?	VVM Para. 128-129 PDD Section E.3	DR SV	Section E.3 of the PDD mentions that no specific action is required to be taken against the stakeholder comments. This will be further verified during the site visit. No due comments received	Pending Site visit  Y
E.1.6. How the team validate the adequacy of stakeholder consultation?	VVM Para. 130	DR SV	Though no adverse comments were received, few clarifications were asked by the stakeholders. Summary of the stakeholder clarification/queries and their responses are provided in section E.3 of PDD. Pending closure of CAR #05. CAR #05 closed based on on-site interviews with the local stakeholders, verification of the evidences of the stakeholder process. .	Pending closure of CAR #05 Closed Y

### A.3 Annex 3: Overview of Findings

#### Findings Overview Summary

	CARs	CLs	FARs
<b>Total Number raised</b>	13	02	00

Date:	13/04/2012	Raised by:	Assessment Team		
Type:	CAR	Number:	01	Reference:	AU4
<b>Lead Assessor Comment:</b>					
In line with paragraph 44-50 of VVM/version 1.2, Project Participant is requested to submit Host Country Approval received for the project activity and justify how proposed CDM project activity qualifies the participation requirement of CDM project activities.					
<b>Project Participant Response:</b>				<b>Date:</b> 25/09/2012	
The Host Country Approval has been obtained and submitted to the DOE.					
<b>Documentation Provided by Project Participant:</b>					
Host Country approval for the proposed project activity					
<b>Information Verified by Lead Assessor:</b>					
Host Country approval (Ref. 4/10/2012-CCC) dated 10/09/2012 for the proposed project activity issued by NCDMA (Host country DNA)					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>				<b>Date:</b> 14/10/2012	
Host Country approval (Ref. 4/10/2012-CCC) dated 10/09/2012 provides confirmation on below points related to the project activity.					
<ul style="list-style-type: none"> <li>a) The government of India has ratified the Kyoto Protocol in August 2002.</li> <li>b) This is approval of voluntary participation in the proposed CDM project activity.</li> <li>c) The project contributes to sustainable Development in India.</li> </ul>					
Also title of the project activity mentioned in the HCA is found to be consistent with the same mentioned in the web-hosted PDD and final PDD. This is found to be in line with paragraph 45 of VVM version 1.2; thus it is accepted. Thus <b>CAR 01 is closed.</b>					
<b>Acceptance and Close out by Lead Assessor:</b>				<b>Date:</b> 14/10/2012	

Date:	13/04/2012	Raised by:	Assessment Team		
Type:	CAR	Number:	02	Reference:	AU4
<b>Lead Assessor Comment:</b>					
PP shall submit a complete "F-CDM-MOC - Modalities of Communication statement" for the project activity in the format prescribed in F_CDM_MOC, version 1.4 form.					
<b>Project Participant Response:</b>				<b>Date:</b> 28/05/2012	
MOC has been submitted as DVR 1_Annex 01.					
<b>Documentation Provided by Project Participant:</b>					
MOC					
<b>Information Verified by Lead Assessor:</b>					
MoC dated 23/05/2012					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>				<b>Date:</b> 18/06/2012	
Validation team has checked the submitted MoC- Modalities of Communication statement. It is found that PP has used the template "F-CDM-MOC Ver2.1" applicable to the VVS track. PP is requested to submit complete "F-CDM-MOC - Modalities of Communication statement" for the project activity in the prescribed format of the VVM track. <b>Open.</b>					
<b>Project Participant Response:</b>				<b>Date:</b> 20/10/2012	
The F-CDM-MOC applicable for VVM track has been submitted					
<b>Documentation Provided by Project Participant:</b>					

MoC dated 11/10/2012	
<b>Information Verified by Lead Assessor:</b>	
MoC dated 11/10/2012	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	<b>Date:</b> 20/10/2012
Validation team has checked the submitted MoC-(Modalities of Communication statement) dated 11/10/2012. It is found that PP has used the latest template "Ver1.4 F-CDM-MOC" applicable in the VVM track. Validation team has checked and confirmed that MoC has been completed as per the latest Procedures for MoC between the project participants and the Executive Board (EB45 Annex59). <b>Closed.</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 20/10/2012

Date:	13/04/2012	Raised by:	Assessment Team		
Type:	CL	Number:	03	Reference:	AU4
<b>Lead Assessor Comment:</b>					
Section A.3 of the PDD/version 01 states Mytrah Energy (India) Limited (MEIL) and in-line with para 7-9 of EB 50/Annex 48, DoE (SGS) has direct contractual relationship with Mytrah Energy (India) Limited (MEIL). However, all the supportive documents i.e. PPA, Purchase agreements for WEGs, O & M Contracts etc. show the name of project developer as Caparo Energy (India) Limited. PP is requested to clarify the same.					
<b>Project Participant Response:</b>			<b>Date:</b> 13/04/2012		
The project has been commissioned under the entity Caparo Energy (India) Limited and hence all the documents are under the same name. Subsequently the Project Participant name has been changed from Caparo Energy (India) Limited to Mytrah Energy (India) Limited (MEIL) on 27/09/2011 and Certificate for Incorporation for MEIL for the same has been submitted as DVR01_Annex 02.					
<b>Documentation Provided by Project Participant:</b>					
Fresh certificate of Incorporation consequent upon change of name.					
<b>Information Verified by Lead Assessor:</b>					
"Fresh certificate of Incorporation consequent upon change of name" document issued by Registrar of Companies, Andhra Pradesh. (dated 27/09/2011 with Corporate identity number U40108AP2009PLC065804)					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>			<b>Date:</b> 22/06/2012		
The referred document (dated 27/09/2011) has been provided by PP indicating the details of name change from Caparo Energy (India) Limited to Mytrah Energy (India) Limited (MEIL). Thus, CL#03 is <b>closed</b> .					
<b>Acceptance and Close out by Lead Assessor:</b>			<b>Date:</b> 22/06/2012		

Date:	13/04/2012	Raised by:	Assessment Team		
Type:	CAR	Number:	04	Reference:	AU4
<b>Lead Assessor Comment:</b>					
The applied methodology i.e. ACM0002 version 12.2.0 is superseded by ACM0002 version 12.3.0, which is active and Valid from 17 Sep 2010 onwards. Thus, PP is requested to update the whole PDD with the latest version of the methodology used.					
<b>Project Participant Response:</b>			<b>Date:</b> 28/05/2012		
The methodology of the project has been updated to version 12.3.0 of ACM0002 in the version 2 of the PDD.					
<b>Documentation Provided by Project Participant:</b>					
[Version 02 of the PDD dated 25/04/2012]					
<b>Information Verified by Lead Assessor:</b>					
PDD Version 02 dated 25/04/2012					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>			<b>Date:</b> 22/06/2012		
The latest version of the methodology viz; ACM0002, version 12.3.0 has been applied by the project participant in the revised version of the PDD. Hence the CAR is <b>closed</b> .					
<b>Acceptance and Close out by Lead Assessor:</b>			<b>Date:</b> 22/06/2012		

Date:	13/04/2012	Raised by:	Assessment Team		
Type:	CAR	Number:	05	Reference:	AU4
<b>Lead Assessor Comment:</b>					
<p><u>Editorials:</u></p> <ol style="list-style-type: none"> <li>1. In section A.4.1.4 of PDD, the GPS coordinates of the location of WEGs installed is not mentioned correctly, Pls. correct the same and submit the evidence of specific location of each WEG's.</li> <li>2. Section A.4.3 of PDD should include a description of how environmentally safe and sound technology and know-how to be used, is transferred to the Host Party as per CDM-PDD guideline, version 07.</li> <li>3. The reference of the applied methodology ACM0002 version 12.2.0 in section B.1 &amp; B.3 of webhosted PDD is not found as per CDM-PDD guideline, version 07.</li> <li>4. In section B.6.4 of webhosted PDD/version 01, Table is not as per the CDM-PDD guideline, version 07. Pls. Correct</li> <li>5. The notations i.e. <math>EG_{facility,y}</math> are found inconsistent with the applied methodology ACM0002 version 12.2.0. Pls. correct the same throughout the PDD</li> <li>6. In section D.1 of webhosted PDD/version 01, kindly refer the latest available notification of Ministry of Environment and Forests with regard to requirement of EIA.</li> <li>7. Web-link provided for the source of data for <math>EF_{grid CM,y}</math> in section B.6.2 is not executable. Needs correction.</li> <li>8. PP shall substantiate the expected operational lifetime of the project activity.</li> <li>9. Pls. justify, how appropriate is the media used to invite comments by local stakeholders.</li> </ol>					
<b>Project Participant Response:</b>				<b>Date:</b> 28/05/2012	
<ol style="list-style-type: none"> <li>1. The GPS coordinates of the location of WEGs have been revised accordingly in the version02 of the PDD.</li> <li>2. Section A.4.2 has been updated accordingly in the Version 02 of the PDD.</li> <li>3. Section B.1 &amp; B.3 has been updated accordingly in the Version 02 of the PDD.</li> <li>4. The table in the section B.6.4 has been updated accordingly in the Version 02 of the PDD.</li> <li>5. Version 02 of the PDD has been revised to this effect.</li> <li>6. The latest version of the notification of Ministry of Environment and Forests has been updated in the version02 of the PDD.</li> <li>7. The web link for the CO<sub>2</sub> emission factor has updated in the version 02 of the PDD.</li> <li>8. The technical specification (Page No.6) for the same has been submitted as DVR 01_Annex 03</li> <li>9. The relevant stakeholders identified were sent personal invitation stating the purpose, date, time and venue of the meeting. The comments were invited and recorded in questionnaire duly filled by every participating stakeholder.</li> </ol>					
<b>Documentation Provided by Project Participant:</b>					
<p><i>Letter from technology supplier for location reference          Version 02 of the PDD dated 25/04/2012          Technical Specification for the WEGs</i></p>					
<b>Information Verified by Lead Assessor:</b>					

<p>1. PDD Version 02 dated 25/04/2012</p> <p>2. Letter from technology supplier i.e. SEL for WTG location reference</p> <p>3. Technical Specification of WEGs- S-88-2.1 MW provided by Suzlon Energy Limited (SEL) is checked for the technical specifications, life time etc.</p> <p>4. Project activity WTGs Coordinates &amp; Details (Record No:WRD/F/FMX/GJ/12-13/101/007) Issued by Suzlon Energy Limited is checked for the Geo coordinates of each of the WTGs</p>	
<p><b>Reasoning for not Acceptance or Acceptance and Close Out:</b></p>	<p><b>Date:</b> 22/06/2012</p>
<p>1. The GPS coordinates of the location of each WEG is correctly mentioned along with specific identification no. (Location No.) Of each WEG in section A.4.1.4 of revised PDD. Validation team has verified the WEG location no. during on-site assessment and also checked the GPS coordinates of the location of each WEG from the site specific document issued by Suzlon Energy Limited (The O&amp;M operator). <b>Closed.</b></p> <p>2. Section A.4.3 of the revised PDD mentions that the used technology is environmentally safe and there are no emissions associated with the project activity. Also, section A.4.3 of the PDD is clearly states that the proposed project activity does not involved any technology transfer and the deployed technology is sourced from local technology suppliers. <b>Closed.</b></p> <p>3. The reference of the applied methodology ACM0002 version 12.3.0 in section B.1 &amp; B.3 of revised PDD is found correct as per CDM-PDD guideline, version 07 (EB 41/Annex 12). <b>Closed.</b></p> <p>4. Table format in section B.6.4 of revised PDD is corrected and found exactly in line with CDM-PDD guideline, version 07 (EB 41/Annex 12). <b>Closed.</b></p> <p>5. The notations used in the revised PDD are found consistent with the applied methodology ACM0002 version 12.3.0. Since, the proposed project activity is the installation of a new grid-connected renewable power plant. The <math>EG_{P,y}</math> becomes equal to <math>EG_{facility,y}</math>. Thus found correct. <b>Closed.</b></p> <p>6. As per the Schedule of the EIA notification (EIA notification, S.O. 1533 dated 14th September, 2006) and subsequent amendment S.O. 3067(E) dated 01/12/2009 and S.O.695(E), dated 4/04/2011 given by the Ministry of Environment and Forests (Government of India) EIA is not a regulatory requirement in India for wind energy projects. Thus the project activity doesn't require EIA. The project activity does not involve any negative environmental impacts, as the Wind Turbine Generators are installed for generation of power using wind which is a clean source of energy. Latest available notification of Ministry of Environment and Forests with regard to requirement of EIA is referred in section D.1 of revised PDD. <b>Closed.</b></p> <p>7. Validation team has checked the calculation approach of simple OM and BM based on CEA data base version 07 and found correct and in compliance with EB 63/Annex 19. Also, the provided Web-link for the source of data for <math>EF_{grid CM,y}</math> in section B.6.2 is now corrected. <b>Closed.</b></p> <p>8. As per the technical specification of S-88 model WTG provided by Suzlon Energy Limited (manufacturer of WTGs) the lifetime of the project is 20 years, which is reasonable for a WTG and has been cross checked by validation team against GERC tariff order dated 30 January 2010. <b>Closed.</b></p> <p>9. The local stakeholders were invited through personal invitations. Invitations letters were sent to village sarpanch, contractors, local villagers etc. Copy of personal invitations sent, filled questionnaire, attendance records of local stakeholders meeting and minutes of the meeting of the local stakeholder consultation have been verified by Validation team. The validation team believe that the time provided to the local stakeholders for providing comments on the Project Activity is adequate. The same was verified by the validation team during the personal interaction with some of the local stakeholders during the validation site visit. Thus, adequacy of the local stakeholder consultation process is checked and found satisfactory. <b>Closed.</b></p>	
<p><b>Acceptance and Close out by Lead Assessor:</b></p>	<p><b>Date:</b> 22/06/2012</p>

Date:	13/04/2012	Raised by:	Assessment Team
Type:	CAR	Number:	06
		Reference:	AU4
<b>Lead Assessor Comment:</b>			
National policies and circumstances relevant to the baseline of the proposed project activity were not summarized in section B.4 of the web hosted PDD as per the requirement of paragraph 85 of VVM/version 1.2. Please include the same.			
<b>Project Participant Response:</b>			<b>Date:</b> 28/05/2012
National policies and circumstances relevant to the baseline of the proposed project activity has been updated in Version 02 of the PDD.			
<b>Documentation Provided by Project Participant:</b>			
Version 02 of the PDD			
<b>Information Verified by Lead Assessor:</b>			
PDD Version 02 dated 25/04/2012			
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>			<b>Date:</b> 18/06/2012
National policies and circumstances relevant to the baseline of the proposed project activity have been updated in Version 02 of the PDD. PP has clearly mentions that The Electricity Act 2003 does not mandate or restrict the PP for the usage of any technology and fuel for electricity generation. This is confirmed that project activity by the PP is voluntary initiative. Further, validation team has assessed the E + and E- national/sectoral policies to be (or not to be) considered in development of baseline scenario, Following relevant national and sectoral policies coming up in India (Host country) as found from the websearch of Ministry of Power ( <a href="http://www.powermin.nic.in/">http://www.powermin.nic.in/</a> ) and Ministry of New & Renewable Energy ( <a href="http://www.mnre.gov.in/">http://www.mnre.gov.in/</a> ). Validation team has concluded that all the policies & circumstances are E- policies (which gives comparative advantage to less emission intensive technology) and implemented since the adoption by the COP of the CDM M&P (decision 17/CP.7, 11 November 2001; hence need not to be considered in the development of baseline. Hence CAR#06 is closed.			
<b>Acceptance and Close out by Lead Assessor:</b>			<b>Date:</b> 18/06/2012

Date:	13/04/2012	Raised by:	Assessment Team
Type:	CAR	Number:	07
		Reference:	AU4
<b>Lead Assessor Comment:</b>			
<ol style="list-style-type: none"> <li>2. PP is requested to demonstrate the prior consideration of the CDM in line with EB 62 annex 13.</li> <li>3. As per section A.4.5 &amp; Annex 2 of PDD, PP is requested to submit supporting document to demonstrate that no diversion of ODA fund from the Annex I party has been used for the project activity.</li> </ol>			
<b>Project Participant Response:</b>			<b>Date:</b> 28/05/2012
<ol style="list-style-type: none"> <li>1. As per the Guidelines "On The Demonstration And Assessment Of Prior Consideration Of The CDM" /EB62/Annex13, "the project participant must inform a Host Party designated national authority (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". In compliance with above, PP has placed the purchase order (first major investment) on 18/01/2011 for the project activity and subsequently intimated to UNFCCC and the DNA about its intention to seek CDM status on 07/03/2011 which is less than six months of the start date of project activity.</li> <li>2. The letter of Undertaking from PP for the same has been submitted as DVR01_Annex 04.</li> </ol>			
<b>Documentation Provided by Project Participant:</b>			
Version 02 of the PDD Letter of Undertaking			
<b>Information Verified by Lead Assessor:</b>			
PDD Version 02 25/04/2012 Self Declaration letter dtd 26/12/2011 from M/s Mytrah Energy (India) Limited (MEIL)			
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>			<b>Date:</b> 22/06/2012

**1. Assessment of prior CDM consideration and continuous actions to secure CDM status**

The start date of the project activity has been identified as 11 January 2011 which corresponds to the date of issue of work order on M/s Suzlon Energy Limited for supply of the wind energy generators for the project activity. This has been found to be appropriate in line with CDM-Glos-05 as this is the date of earliest financial commitment.

Since the project start date is after 2 August 2008, Caparo Energy India Limited (currently known as MEIL) has notified the DNA and UNFCCC in writing of the commencement of the project activity on 16 August 2010 and of the intention to seek CDM status. Caparo Energy India Limited has sent the prior consideration form to UNFCCC on dated 07 April 2011. Validation team could verify from UNFCCC website that the intimation was received by them on 07 March 2011 which is within six months from the start date. Hence serious consideration of CDM in the decision to proceed with the project activity has been confirmed.

Therefore, validation team is of the opinion that the proposed CDM project activity complies with the requirements of the latest version of the guidance (EB 62/Annex 13) on prior consideration of CDM. **Closed.**

2. Self Declaration letter dated 26/12/2011 from M/s Mytrah Energy (India) Limited (MEIL) states that no ODA fund has been availed by MEIL for the project activity. It was verified that proposed CDM project activity has been funded through equity participation from M/s Bindu Vayu (Mauritius) Limited and long term debt component from IDFC Limited, IRDA, Canara Bank and Punjab National Bank. Hence, confirmed that ODA is not involved in the project financing. **Closed.**

**Acceptance and Close out by Lead Assessor:** **Date:** 22/06/2012

Date:	13/04/2012	Raised by:	Assessment Team		
Type:	CL	Number:	08	Reference:	AU4

**Lead Assessor Comment:**

1. PP is requested to justify how the PLF and Effective PLF considered for the investment analysis is as per EB 48 Annex 11 and as per paragraph 6 of EB 62 annex 5.
2. Please provide documentary evidence in support of conceptualizing the project based on GBI incentive, in doing so please refer Para 111a of VVM. ver 1.2
3. Please justify and substantiate with verifiable documentary evidence the considered interest rate, Moratorium, disbursement Schedule, repayment schedule and availability of such information at the time of decision making in doing so please refer Para 16 of EB62 Annex5 and Para 6 of EB62 Annex 5.
4. Please explain and substantiate the considered Land cost and Land lease chargers in doing so please refer Para 111a of VVM. ver 1.2
5. PP needs to justify the considered residual value in investment analysis, in doing so please refer Para 4 of EB62 annex 5.
6. Please justify why tax benefit arising from allowed income tax depreciation has not been considered in Equity IRR calculation. Please consider the same and correct Income tax calculation accordingly in doing so please refer 111(d) of VVMver1.2.

**Project Participant Response:** **Date:** 28/05/2012

<p>1. The PLF of 22.95% assumed in the investment analysis is determined by the third party contracted by the project participant. This is compliance with EB 48 Annex 11. The PLF provided by the technology supplier in its quotation dated 02/06/2010 is 21.47%. The PLF provided by the GERC in its tariff order No. 1 dated 30/01/2010 is 23%. The PLF provided by the technology supplier and GERC was available to the project participant at the time of decision making. However, in order to comply with the EB 48 Annex 11, the PLF determined by third party has been used in the investment analysis. This PLF is in line with the PLF values available at the time of decision making.</p> <p>2. The project has been conceptualized and assessed based on availing GBI incentive and the same can be inferred from Letter of Intent from IDFC for financial assistance.</p> <p>3. The documentary evidence for the same has been updated in the revised financial sheet.</p> <p>4. The land cost and the land lease has been removed from the revised financial sheet and the depreciation of asset life has been made as per the GERC tariff order. The link is as follows  <a href="http://www.gercin.org/renewablepdf/en_1303211765.pdf">http://www.gercin.org/renewablepdf/en_1303211765.pdf</a>.</p> <p>5. The residual value considered for the project is 10% of plant and machinery cost based on GERC tariff order dated 2010. This is in conformance with para 4 of EB 62 annex 5 The weblink for the same is as follows  <a href="http://www.gercin.org/renewablepdf/en_1303211765.pdf">http://www.gercin.org/renewablepdf/en_1303211765.pdf</a>.</p> <p>6. The core business for the project participant is wind power project and hence the loss arising out of this project cannot be offset as the PP is not involved in other business. However tax holiday for ten consecutive years out of fifteen years has been considered by the PP as per Section 80IA of Income Tax act and the same can be inferred from the tax calculation. The supporting annual report has been attached as DVR 01 Annex 05.</p>	
<p><b>Documentation Provided by Project Participant:</b></p> <p><i>Version 02 of the PDD</i>  <i>IRR spreadsheet</i></p>	
<p><b>Information Verified by Lead Assessor:</b></p> <p>1. <i>IRR spreadsheet</i></p> <p>2. <i>Revised PDD Version 02 25/04/2012</i></p>	
<p><b>Reasoning for not Acceptance or Acceptance and Close Out:</b></p>	<p><b>Date:</b> 25/06/2012</p>
<p>1. The PLF is based on third party estimation i.e. "25.2MW Gujarat Wind Farm Wind Resource and Energy Yield Assessment" performed by Parsons Brinckerhoff I India Pvt. Limited. Estimation of PLF by third party organization confirms the guidelines for the reporting and validation of Plant Load Factors. Further validation team has checked the Tariff Order issued by state of Gujarat (available at the time of investment decision) which shows the PLF value of 23%. The sensitivity analysis shows that the benchmark will be crossed if the PLF increases by 28% (PLF=29.37%). It is most likely that this won't happen as this on one hand is one of the highest PLFs in this region as checked from the published records. Thus the value applied is deemed as reasonable and acceptable. <b>Closed.</b></p> <p>2. Kindly submit the Letter of Intent from IDFC for financial assistance. <b>Open.</b></p> <p>3. Provided web-link as a source for mentioned input parameters is not executable. Kindly correct the same. <b>Open.</b></p> <p>4. The land cost and the land lease has been removed from the revised financial sheet following Para 111a of VVM. ver 1.2. <b>Closed.</b></p> <p>5. A salvage of 10% of plant and machinery cost based on GERC tariff order (available at the time of investment decision) has been considered in investment analysis and same has been added back in last year cash flow. The land for the project activity has been taken under lease and hence not added as part of salvage value at the last year. This is in conformance with para 4 of EB 62 annex 5. <b>Closed.</b></p> <p>6. Based on Balance sheet dated 31 March 2011, it is confirmed that the core business for the Mytrah Energy (India) Limited (MEIL) is wind power project and hence the loss arising out of this project cannot be offset as the PP is not involved in other business.</p> <p>The validation team hereby confirms that project participant has applied all the statutory levies and taxes as per the then valid tax rules. Project participant has also applied incentives like additional depreciation and provisions of section 80IA [deferred tax benefit] as per Indian Income Tax Act. The validation team validated the assumptions as above and observed that they are correct. The financial expert also verified the IRR calculations and observed them to be correct. The input values are as per para 110 of VVM ver 1.2 and in line with Guidelines on the Assessment of Investment Analysis (EB 62 Annex 5). <b>Closed.</b></p>	
<p><b>Project Participant Response:</b></p>	<p><b>Date:</b> 17/07/2012</p>

2. The Letter of Intent from IDFC for financial assistance has been submitted to the validator for verification.	
3. The web-link have been revised in the version 03 of the PDD. They are now fully executable.	
<b>Documentation Provided by Project Participant:</b>	
The Letter of Intent from IDFC for financial assistance for the proposed wind power project	
<b>Information Verified by Lead Assessor:</b>	
1. Letter of Intent dated 24/09/2010 from IDFC for financial assistance clearly mentions that GBI has been considered in the loan processing	
2. Letter from IREDA Limited dated 21/11/2011 regarding registration of proposed wind farm for availing Generation Based Incentives (GBI) and allotment of unique identification no. to WTGs by IREDA.	
3. PDD version 03 dated 12/07/2012	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	<b>Date:</b> 01/08/2012
2. It is confirmed that by Validation team that Ministry of new and renewable energy sources, government of India offers two types of incentives for wind power projects, project activity can claim any one out of these two: a) 80% accelerated depreciation under the Income Tax Act b) Generation based incentives (GBI) of 0.5 INR/kWh with cap of 6.2 Million INR/MW of installed capacity. This 6.2 Million INR/MW can be claimed in a period not less than 4 years and a maximum period of 10 years. The project activity has applied for generation based incentives and it has been verified by Validation team that project participant can avail only under one scheme as project participant have to intimate first to Ministry about the option opted and ministry have procedure in place to track that project can avail benefit under one scheme only. As checked form the Letter of Intent dated 24/09/2010 from IDFC for financial assistance, the project is availing GBI benefits and the same is confirmed form the Letter from IREDA Limited dated 21/11/2011 regarding registration of proposed wind farm for availing Generation Based Incentives (GBI) and allotment of unique identification no. to WTGs by IREDA. Moreover, as per GBI guidelines, accelerated depreciation is not applicable. <b>Closed.</b>	
3. Validation team has checked the PDD version 03 and found that all web-link used as a reference for input values executable properly. <b>Closed.</b>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 01/08/2012

Date:	13/04/2012	Raised by:	Assessment Team
Type:	CAR	Number:	09
		Reference:	AU4
<b>Lead Assessor Comment:</b>			
In section B.5 of PDD/version 01; PP is requested to demonstrate “ <b>Step 4: Common Practise analysis</b> ” with verifiable evidences and also justify the chosen applicable geographical area in the common practice analysis.			
<b>Project Participant Response:</b>			<b>Date:</b> 28/05/2012
The chosen geographical area for the project activity is the state of Gujarat since the availability of wind, tariffs and other regulatory framework vary considerably from state to state despite the technology used in wind energy generation is fairly similar everywhere in India. Hence the wind projects with cumulative capacity of more than 15MW in the state of Gujarat has been considered for common practise analysis. Also the common practise analysis has been updated with the references like IGES database and UNFCCC link for CDM projects in the version 2 of the PDD.			
<b>Documentation Provided by Project Participant:</b>			
Version 02 of the PDD			
<b>Information Verified by Lead Assessor:</b>			
PDD Version 02 dated 25/04/2012			

<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	<b>Date:</b> 22/06/2012
<p>The links and sources provided in the section B.5 of the revised PDD has been checked out. Project participant had analyzed all wind power projects in the state of Gujarat with capacity more than 15 MW sourced from Directory – Indian Wind power 2011 and UNFCCC. The information source for the common practice analysis is publicly available and checked by the validation team. The information used is evaluated to be credible.</p> <p>Also, PP has provided justification for the chosen applicable geographical area i.e. Gujarat in section B.5 of PDD. In India, Wind energy projects are being implemented across various states of India wherein additional support is extended by the respective state governments (in the form of preferential tariffs). The wind policy in each state defines a distinct tariff, inter-alia other charges such as those for losses, wheeling, and banking, and other arrangements. Therefore, each state in India has a unique investment environment that governs the financial/economic feasibility of the projects within them. The features applicable to Gujarat Wind policy can be found on the website of the state energy development agency. Since different regions have different regulatory framework, the selection of the regional scope (Gujarat) is found to be appropriate. Thus, CAR#09 is <b>closed</b>.</p>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 22/06/2012
<b>Lead Assessor Comment: (Re-open)</b>	<b>Date:</b> 14/09/2012
<p>In section B.5 of PDD, <b>Step 4:</b> The common practice analysis is not found in conformance with the latest guideline "Guidelines on Common Practice" Version 02, <b>EB 69 Annex 08. Open</b></p>	
<b>Project Participant Response:</b>	<b>Date:</b> 20/10/2012
<p><i>Common practise analysis has been revised as per the version 02 of Guideline on common practise approved in EB 69.</i></p>	
<b>Documentation Provided as Evidence by Project Participant:</b>	
<i>PDD version 05</i>	
<b>Information Verified by Lead Assessor:</b>	
<i>PDD version 05 dated 20/10/2012</i>	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	<b>Date:</b> 20/10/2012

The PP has revised the common practice analysis for the project activity to demonstrate the additionality of project activity as per the latest “guideline on common practice” published in EB 69 Annex 08 as mentioned below:

1. The applicable geographical area to demonstrate the common practice analysis has been considered as the entire Host Country (India). This is in line with paragraph 01 of EB 69 Annex 08.
2. The measure for the project activity is considered as Switch of technology with or without change of energy source including energy efficiency improvement as well as use of renewable energies. This is in line with paragraph 2(b) of EB 69 Annex 08.
3. The electric power is considered as output (goods or services with comparable quality) of project activity. This is in line with paragraph 3 of EB 69 Annex 08.
4. The proposed project activity uses wind energy for the generation of power and hence as per the paragraph 4(a) of EB 69 Annex 08, the technology which use energy source/ fuel other than wind i.e. energy generation by different energy sources or the technologies uses different type of fuels other than wind energy will be considered as the different technology.

In line with section II of EB 69 Annex 08, stepwise approach for common practice analysis is followed by PP. Validation team has assessed the number of projects within the capacity range (12.6 MW to 37.8 MW) from difference third party published documents i.e. Directory, Indian Wind power 2011” Compiled & Published by “Consolidated Energy Consultants Ltd” (for wind projects), Baseline carbon dioxide Emission database, Version-07” published by “Central Electricity Authority (CEA), Ministry of power, Government of India (for hydro, Nuclear and thermal projects), Annual report-2010-11 of Ministry of New and Renewable energy, Government of India (for biomass based power plant). Other projects with Tidal (Mechanical & Thermal) or geothermal technology are verified from the published report i.e. “India Geo-thermal energy” published by Energy Alternatives India. As all the listed power plant within the capacity range i.e. +/-50% of the design output or capacity of the proposed project activity (12.6 MW to 37.8 MW) are verified from the third party published documents, hence the list of projects provided by PP is found complete and appropriate. This is also found that there is no data available on individual unit size/capacity specific installations are not available. Hence on conservatively, validation team has also checked the results of common practice analysis considering all biomass based power projects under applicable capacity range and confirmed that proposed project is still not a common practice in host country (geographical area). The approach is acceptable to the validation team on ground of conservativeness.

All the steps of the latest “guideline on common practice” published in EB 69 Annex 08 are assessed by validation team as described above and found appropriate. As per the formula, the Factor comes 0.125, the calculation has been checked by the validation team and found correct.

Since, the Factor is less than 0.2 and the Nall-Ndiff is greater than 3. Thus, the proposed project activity is not a common practice within a sector in the applicable geographical area. Same is checked by the assessment team and found in line with the para 10 of EB 69 Annex 08. Closed.

<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 20/10/2012
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Date:	13/04/2012	Raised by:	Assessment Team		
Type:	CAR	Number:	10	Reference:	AU4
<b>Lead Assessor Comment:</b>					
<ol style="list-style-type: none"> <li>1. Section B.7.1 of PDD/version 01 does not provide a transparent description of the measurement methods and procedures in line with CDM-PDD guideline, version 07.</li> <li>2. Section B.7.1 of PDD/version 01 does not specify the accuracy level of energy measurement equipments in line with accepted industry standards or national or international standards and also this section shall describe the details of calibration procedures to applied in line with CDM-PDD guideline, version 07.</li> <li>3. PP shall justify the <b>monitoring/recording frequency</b> and <b>Measurement methods and procedures</b> for the monitoring of <math>E_{G_{facility,y}}</math> in-line with ACM 0002 Version 12.2.0.</li> <li>4. Source of data to be used for <math>EG_{PJ,y}</math> (<math>EG_{facility,y}</math>), <math>E_{exp}</math> and <math>E_{imp}</math> is not correct as per on-site assessment.</li> <li>5. In section B.7.1 of PDD, QA/QC procedures to be applied for <math>EG_{PJ,y}</math> (<math>EG_{facility,y}</math>) is not found included as per the requirement of ACM 0002 Version 12.2.0.</li> <li>6. As per Annex-4 of PDD/version 01, both main and check meter are installed at the project site (at each WEG end) for the monitoring of export and import of electricity by each WEGs, however, as per on-site assessment, only main meter (Tri-vector meter referred as <b>EB meter</b>) is installed for the monitoring of export and import of electricity by each WEGs. Pls. correct the inconsistency.</li> <li>7. As per on-site assessment, an ABT energy meter is installed at the nearby substation which measures both import and export electricity by the Wind farm. However, Annex-4 of PDD/version 01 refers it as <b>bulk meter</b>. Kindly correct the in-consistency and also provide the transparent description on the use of ABT meter in relevant section of PDD.</li> <li>8. Calibration frequency for all energy meters involved in the monitoring as defined in section B.7.1 and Annex 4 of PDD/version 01 is not in-line with the submitted PPA with Gujarat Urja Vikas Nigam Limited (GUVNL). Pls. correct the inconsistency.</li> <li>9. PP is asked to identify procedures for training of monitoring personnel and for internal audits of GHG project compliance with operational requirements where applicable.</li> </ol>					
<b>Project Participant Response:</b>				<b>Date:</b> 28/05/2012	
<ol style="list-style-type: none"> <li>1. The measurement methods and procedures have been updated in the section B.7.1 of version of the PDD.</li> <li>2. The accuracy level and the calibration frequency of the energy meters have been included in the version02 of the PDD.</li> <li>3. The monitoring frequency and measurement methods and procedures have been justified as per ACM 0002 12.3.0.</li> <li>4. The source of data has been updated in the version02 of the PDD..</li> <li>5. The QA/QC procedures applied for <math>EG_{PJ,y}</math> (<math>EG_{facility,y}</math>) have been updated in the version02 of the PDD.</li> <li>6. The monitoring plan has been in the version02 of the PDD in line with the onsite observations.</li> <li>7. The PDD has been updated accordingly in line with the onsite observations.</li> <li>8. The calibration frequency of the energy meters is once in 3 years as per the PPA and the same has been updated in the version02 PDD</li> <li>9. The project participant has outsourced the O&amp;M services to the technology supplier. Hence the training procedures and other compliances with operations will be carried out by technology supplier.</li> </ol>					
<b>Documentation Provided by Project Participant:</b>					
Version 02 of the PDD.					
<b>Information Verified by Lead Assessor:</b>					
PDD Version 02 dated 25/04/2012					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>				<b>Date:</b> 22/06/2012	

<p>1. In section B.7.1 of PDD/version 02, The measurement methods and procedures to be applied for determination of <math>EG_{\text{facility},y}</math> is not found correct as per on site procedures. Kindly correct the same. <b>Open</b></p> <p>2. Section B.7.1 of PDD clearly mentions the accuracy class of energy meter as 0.2s. During on site assessment it was confirmed that all the energy meters (both main and check meters) are of accuracy class 0.2s. Also, All the meters are under the purview of GETCO. The calibration requirements are also provided in the PDD which is found <b>Closed.</b></p> <p>3. In section B.7.1 of PDD/version 02, The measurement methods and procedures to be applied for determination of <math>EG_{\text{facility},y}</math> is not found correct as per on site procedures. Kindly correct the same. <b>Open</b></p> <p>4. Source of data to be used for <math>EG_{\text{facility},y}</math>, <math>E_{\text{exp}}</math> and <math>E_{\text{imp}}</math> is now corrected and same are found as per on-site assessment. <b>Closed.</b></p> <p>5. QA/QC procedures to be applied for <math>EG_{\text{facility},y}</math> is found included in section B.7.1 of PDD as per the requirement of ACM 0002 Version 12.3.0. Provision of the cross checking the net electricity exported to the grid the sales receipts is included as QA/QC measure which is found correct. <b>Closed.</b></p> <p>6. As per Annex-4 of PDD/version 01, both main and check meter are installed at the project site (at each WEG end) for the monitoring of export and import of electricity by each WEGs, however, as per on-site assessment, only main meter (Tri-vector meter referred as <b>EB meter</b>) is installed for the monitoring of export and import of electricity by each WEGs. Pls. correct the inconsistency. <b>Open</b></p> <p>7. Description of ABT energy meter and <b>bulk meter</b> is not found included in section B.7.1 and Annex 4 of PDD. As per on-site assessment, an ABT energy meter is installed at the nearby substation which measures both import and export electricity by the Wind farm. <b>Open</b></p> <p>8. Calibration frequency for all energy meters involved in the monitoring as defined in section B.7.1 and Annex 4 of PDD is not found consistent. Pls. correct the inconsistency. <b>Open</b></p> <p>9. The project participant has entered into agreement with the WEG supplier i.e. Suzlon Energy Limited for the operation and maintenance of WEGs. O &amp; M supplier is legend in the Wind power sector and as confirmed during on site assessment, project site is complying the ISO 9001: 2008 procedures. Thus, it was ensured that the proper training procedures for O &amp; M related functions including data monitoring are placed and separate training arrangement and internal audit are not required to be made by PP. Also, as the ER calculations are directly a function of quantity of net electricity exported to the grid (<math>EG_{\text{facility},y}</math>) and same is determined in presence of GEDA (Electricity purchaser i.e. grid authority), which is a third party. Hence, data reliability is ensured. Moreover, net electricity exported to the grid will be cross checked with the sales receipts. Hence, <b>closed.</b></p>	
<b>Project Participant Response:</b>	<b>Date:</b> 17/07/2012
<p>1. In the section B.7.1 of version 03 of the PDD, the procedure has been made in line with the actual monitoring plan at the project site.</p> <p>3. In the Annexure 4 of version 03 of the PDD, the electricity monitoring plan has been updated. It is now in line with the actual electricity monitoring at the plant site.</p> <p>6. The Annex 4 has been revised in version 03 of the PDD. The monitoring procedure is now in line with the actual electricity monitoring procedure that is being followed at the site.</p> <p>7. The Annex 4 and section B.7.1 have been revised in version 03 of the PDD. The monitoring procedure is now in line with the actual electricity monitoring procedure that is being followed at the site. The ABT meter has been mentioned in the relevant sections.</p> <p>8. The calibration frequency has been mentioned in the Annex 4 of the PDD and the inconsistencies have been removed.</p>	
<b>Documentation Provided by Project Participant:</b>	
PDD version 03	
<b>Information Verified by Lead Assessor:</b>	
PDD version 03 dated 12/07/2012	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	<b>Date:</b> 01/08/2012

<p>1) &amp; 3).          The measurement methods and procedures to be applied for determination of <math>EG_{PJ,y}</math> (Quantity of net electricity exported to the grid during the year y) is now found correct as per on site procedures however, The PP is requested to list all the data and parameters to be monitored in line with applied methodology as per EB 48 Annex 60 paragraph 10 (a). According to the PDD version 02, 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. Thus, PP is requested to list each of the required parameters in section B.7.1 in the PDD together with the relevant monitoring requirements. <b>Open.</b></p>	
<p>6) &amp; 7):          Pending closure of 1) &amp; 3). <b>Open.</b></p>	
<p>8) As per section B.7.1 and Annex 4 of PDD, All the energy meters will be calibrated by GETCO every 3 years as per section 7.2 (iv) of the PPA . <b>Closed.</b></p>	
<p><b>Project Participant Response:</b></p>	<p><b>Date:</b> 31/08/2012</p>
<p>The monitoring procedure is as per the actual monitoring procedures that are being followed every month at the site. The net electricity delivered to the grid is directly taken from the "Certificate for share of electricity generated by wind farm" which is issued every month by GETCO.          Apart from this the PP is measuring the net electricity exported and imported by each WEG of the project. This is primarily for cross checking the value of the net electricity delivered.          The above parameters have been clearly demonstrated in section B.7.1 of the PDD.</p>	
<p><b>Documentation Provided by Project Participant:</b></p>	
<p><i>PDD Version 04 dated 30/08/2012</i></p>	
<p><b>Information Verified by Lead Assessor:</b></p>	
<p><i>PDD Version 04 dated 30/08/2012 is checked</i></p>	
<p><b>Reasoning for not Acceptance or Acceptance and Close Out:</b></p>	<p><b>Date:</b> 12/09/2012</p>
<p>According to the PDD version 04, 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 through apportioning procedure. Thus, PP is requested to list each of the required parameters in section B.7.1 in the PDD together with the relevant monitoring requirements and detailed apportioning procedure shall be provided in section B.7.2 as per CDM-PDD guideline EB 41 Annex 12. <b>Open.</b></p>	
<p><b>Project Participant Response:</b></p>	<p><b>Date:</b> 20/10/2012</p>
<p>The monitoring procedure is as per the actual monitoring procedures that are being followed every month at the site. The net electricity delivered to the grid is directly taken from the "Certificate for share of electricity generated by wind farm" which is issued every month by GETCO.          Apart from this the PP is measuring the net electricity exported and imported by each WEG of the project. This is primarily for cross checking the value of the net electricity delivered.</p>	
<p><b>Documentation Provided as Evidence by Project Participant:</b></p>	
<p>Revised PDD version 05</p>	
<p><b>Information Verified by Lead Assessor:</b></p>	
<p>1. Power purchase agreement between Mytrah Energy (India) Limited (MEIL) (Formerly known as M/s Caparo Energy (India) Limited) and GUVNL dated 03/08/2011</p>	
<p>2. Revised PDD version 05 dated 20/10/2012</p>	
<p><b>Reasoning for not Acceptance or Acceptance and Close Out:</b></p>	<p><b>Date:</b> 20/10/2012</p>
<p>The monitoring plan is in accordance with the monitoring methodology; the monitoring plan will give opportunity for real measurement of achieved emission reductions.          Validation team has checked all the parameters presented in the monitoring plan against the requirements of the methodology; no deviations relevant to the project activity have been found in the plan. Validation team confirms that the monitoring arrangements described in the monitoring plan are feasible within the project design, and the means of implementation of the monitoring plan are sufficient to ensure the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex-post and verified. <b>Closed.</b></p>	
<p><b>Acceptance and Close out by Lead Assessor:</b></p>	<p><b>Date:</b> 20/10/2012</p>

Date:	13/04/2012	Raised by:	Assessment Team		
Type:	CAR	Number:	11	Reference:	AU4
<b>Lead Assessor Comment:</b>					
Section B.7.1 of the webhosted PDD did not indicate that the data monitored and required for verification and issuance are to be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later					
<b>Project Participant Response:</b>					<b>Date:</b> 28/05/2012
Section B.7.1 of the PDD has been updated to this effect. It has been mentioned that the data monitored and required for verification and issuance are to be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.					
<b>Documentation Provided by Project Participant:</b>					
Version 02 of the PDD.					
<b>Information Verified by Lead Assessor:</b>					
PDD Version 02 dated 25/04/2012					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>					<b>Date:</b> 22/06/2012
Section B.7.1 of PDD is revised and provision of the data archiving is clearly indicate that the monitored data will be archived for two years after the end of the last crediting period or till the last issuance of CERs for the project activity, whichever is later. The same is found in compliance with EB 41/Annex 12. Thus, CAR#11 is closed.					
<b>Acceptance and Close out by Lead Assessor:</b>					<b>Date:</b> 22/06/2012

Date:	19/08/2012	Raised by:	Assessment Team		
Type:	CAR	Number:	12	Reference:	AU4
<b>Lead Assessor Comment:</b>					
Based on the assessment of benchmark calculation approach, Please address following points:					
<ol style="list-style-type: none"> <li>1. Please justify the risk free rate in the decision making context.</li> <li>2. Please justify the choice of index to calculate return on equity and time period considered to calculate the same.</li> <li>3. Please justify the rationale behind choice of companies to calculate beta.</li> </ol>					
<b>Project Participant Response:</b>					<b>Date:</b> 31/08/2012

1. The Risk Free rate has been taken from Month-end Yield to Maturity of SGL Transaction in Central Government Dated Securities for Various Residual Maturities published by Reserve Bank of India. The value corresponds to 20 years term to maturity for October 2010. This was published on 09 December 2010 and was available during project conceptualization.
2. PP has considered BSE 500 index as it represents larger list of companies which are present in similar sector to calculate return on equity. Considering the large number companies would minimize the bias if any due to prevailing market conditions. As per the below link of Aswath Damodaran, most estimates of beta done internationally use five years of data. Hence the same has been considered in calculation of beta values (and hence WACC) for the project.  
[http://people.stern.nyu.edu/adamodar/New\\_Home\\_Page/AppldCF/derivn/ch4deriv.html](http://people.stern.nyu.edu/adamodar/New_Home_Page/AppldCF/derivn/ch4deriv.html)
3. The following industries has been listed under power sector in BSE 500 Indices Adani Power, BF Utilities, CESC, Jaiprakash Pow, JSW Energy, KSK Energy Vent, Neyveli Lignite, NHPC, NTPC, Power Grid Corp, Reliance Infra, Reliance Power, SJVN, Tata Power, Torrent Power, BHEL, Suzlon Enrgy, Siemens Ltd, Crompton Greaves, Thermax Ltd, Lanco Infrastructure. Among these BHEL, Suzlon energy, Siemens Ltd, Crompton greaves, Thermax limited are excluded as the core business of these companies is not power generation. As stated above the beta computation is based on five years data. Hence only those companies which are listed in the BSE 500 for over five years prior to the conceptualization date of the current project activity has been considered for further analysis. The following companies viz., Adani Power, JSW Energy, KSK Energy Ventures, NHPC, Power Grid Corp, Reliance Power, SJVN, Torrent Power which are listed after 2005 have not been included in computation of RoE. Hence only Reliance Infra, Tata Power, NTPC, NLC, BF utilities, CESC, Jaiprakash Power, which are listed in BSE 500 and are listed for over five years have been considered for arriving at the benchmark.

**Documentation Provided by Project Participant:**

*PDD version 04  
 IRR and benchmark spreadsheet*

**Information Verified by Lead Assessor:**

*PDD version 04 dated 30/08/2012  
 IRR and benchmark spreadsheet corresponding to PDD version 04  
 BSE sensex data*

**Reasoning for not Acceptance or Acceptance and Close Out:**

**Date:** 13/09/2012

<p>1. The considered Risk Free rate (Month-end Yield to Maturity) is not found in conformance with the para 06 of EB 62 Annex 05. <b>Open</b></p> <p>2. The provided justification is not found appropriate as the time period selected for the determination of market return is not found suitable to calculate benchmark comparable to financial indicator calculated using an assessment period of 20yrs. <b>Open</b></p> <p>3. Since this is a wind energy generation project, the risk estimate for the project is on the basis of beta values of all listed power generating companies in India. It is understood that risky businesses are likely to have higher cost of equity than safer businesses; projects in riskier businesses will have to cover these higher costs. Hence, investors demand a higher return from renewable energy projects than from conventional energy ones, given the higher risks in renewable, including risks of technology, risks from significantly varying and unpredictable resource availability (e.g. wind), and a lower established support base for such projects relative to that for conventional power (e.g. grid connections, bank finance, suppliers, etc.).          For this proposed CDM project activity, the beta values are calculated for 07 power generating companies in India which were listed on stock exchange at the time of conceptualization of the project activity with trading history more than 5 years. The beta values ranged from 0.42 to 1.43, the PP has chosen the average beta value of 0.88 which is found to be appropriate estimate of the risk relating to similar project activities while calculating the cost of equity. Consideration of five years of trading history data is considered to be reasonable for beta estimates for the project activity. The same have been checked and confirmed from publically available sources and respective web-link for all 07 power generation companies are provided in benchmark calculation spreadsheet. The use of this Beta value is therefore considered conservative, as it does not add for the higher risk of non conventional energy. Furthermore, the PP has used the average beta of 0.88. The appropriateness of the same has been checked and confirmed with the financial expert involved in the project activity. This is found to be appropriate and it is accepted. <b>Closed.</b></p>	
<b>Project Participant Response:</b>	<b>Date:</b> 11/10/2012
<p>1. The risk free rate has been revised in conformance with the investment guideline. The link is as follows: <a href="http://www.rbi.org.in/scripts/BS_ViewBulletin.aspx?Id=11647">http://www.rbi.org.in/scripts/BS_ViewBulletin.aspx?Id=11647</a></p> <p>2. PP has initially considered BSE 500 index to calculate market return. Since PP has chosen power generating companies listed in BSE 500 to arrive at Benchmark, the same has been considered to arrive at market return. Since the base year for BSE 500 is 01st February 1999 with an index value of 1000, PP has considered the time period and the index values from the base year to arrive at market returns. However BSE 500 is available only for eleven years, PP has considered other indices viz., BSE 100, BSE 200 and BSE Sensex which are available for longer time period to arrive at the market return. Since the base year for BSE 200 is May 1994 and hence the same has not been considered. Eventually PP have used BSE 100 and BSE Sensex which is available for 20 years to calculate market return and conservative value among the two indices has been chosen as market return. Hence the market return is been concluded to 16.58% which is CAGR of BSE SENSEX for the time period of twenty years till decision making time.</p>	
<b>Documentation Provided as Evidence by Project Participant:</b>	
<i>Benchmark Sheet dated 11/10/2012</i>	
<b>Information Verified by Lead Assessor:</b>	
<p>1. Revised benchmark calculation spreadsheet dated 11/10/2012</p> <p>2. Central Government securities as verified from the official website of the Reserve Bank of India (<a href="http://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/26CT_BL091010.pdf">http://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/26CT_BL091010.pdf</a>)</p> <p>3. Market data- BSE (<a href="http://beta.bseindia.com/indices/IndexArchiveData.aspx?expandable=3">http://beta.bseindia.com/indices/IndexArchiveData.aspx?expandable=3</a>).</p>	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	<b>Date:</b> 14/10/2012

<p><b>1.</b> In India, the Government of India bonds or securities are considered as the most suitable representative for calculation of risk free rate in the market. Thus, an average government bond rate (risk free rate) applicable at the time of investment decision for long term investment (for 20 years) has been considered. Maturation period of 20 years (term of maturity) is appropriate in-line with the life time of the project activity as twenty (20) years as per the expectations of investors for compensating the long term investments over the economic life of the asset. The yield to maturity of the government securities data for term of maturity of 20 years published on 12/10/2010 has been used. Validation team confirms that the returns on Central Government securities as verified from the official website of the Reserve Bank of India are appropriate. The same has been checked and confirmed from <a href="http://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/26CT_BL091010.pdf">http://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/26CT_BL091010.pdf</a> which was published Reserve Bank of India in 12/10/2010<sup>(31)</sup>, hence the source is found to be appropriate and was latest at the time of investment decision. Thus found in conformance with the para 06 of EB 62 Annex 05. <b>Closed.</b></p>
<p><b>2.</b> Project participant has also calculated the market return considering BSE 500, BSE 100 and BSE 200 index to calculate market return. Since the base year for BSE 500 is 01st February 1999 with an index value of 1000, PP has considered the time period and the index values from the base year to arrive at market returns. However BSE 500 is available only for eleven years, hence, PP has considered other indices viz., BSE 100, BSE 200 and BSE Sensex which are available for longer time period to arrive at the market return. Thus, PP have used BSE 100, BSE 200 and BSE Sensex which is available for 20 years to calculate market return and conservative value among the three indices has been chosen as market return. The validation team has validated the data used for the calculation for the market return from the BSE (<a href="http://beta.bseindia.com/indices/IndexArchiveData.aspx?expandable=3">http://beta.bseindia.com/indices/IndexArchiveData.aspx?expandable=3</a>). Hence the market return is been concluded to 16.58% which is CAGR of BSE SENSEX for the time period of twenty years till decision making time. The market return has been arrived based on compounded annual growth rate (CAGR) during this period. Market return works out to 16.58%. The assessment team is able to confirm that the vintage years used to calculate market return and consequently benchmark is appropriate and comparable with the investment horizon and project activity life time. <b>Closed.</b></p>
<p><b>Acceptance and Close out by Lead Assessor:</b> <span style="float: right;"><b>Date:</b> 14/10/2012</span></p>

Date:	14/09/2012	Raised by:	Assessment Team
Type:	CAR	Number:	13
		Reference:	AU4
<b>Lead Assessor Comment:</b>			
The calculation of simple operating margin emission factor in not found incompliance with the EB 63 Annex 19 Page 10 and CEA data base version 07. <b>Open</b>			
<b>Project Participant Response:</b>		<b>Date:</b> 20/10/2012	
Simple operating margin calculation has been made consistent in line with the EB 63 Annex 19 Page 10 and CEA data base version 07 and the same can be observed from the PDD.			
<b>Documentation Provided as Evidence by Project Participant:</b>			
PDD version 05			
<b>Information Verified by Lead Assessor:</b>			
PDD Version 05 dated 20/10/2012 CEA data based version 07 Tool to calculate emission factor for an electricity system” as 2.2.1. (EB 63 Annex 19)			
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>		<b>Date:</b> 20/10/2012	
In the revised PDD, PP has updated the version 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.			
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 <u>the ex-ante option</u> for data using 3-year generation-weighted average, based on the most recent data available at the time of submission (year 2008-09, 2009-10 and 2010-11) and will remain fixed throughout the crediting period. The CAR 13 was closed on 20/10/2012.			
<b>Lead Assessor Comment:</b>		<b>Date:</b> 11/12/2012 (Re-open)	

As per Page 10 of EB 63 Annex 19 "For this approach (simple OM) to calculate the operating margin, the subscript m refers to the power plants/units delivering electricity to the grid, not including low-cost/must-run power plants/units, and including electricity imports to the grid. Electricity imports should be treated as one power plant m".

In line with above, the Electricity import data of year 2008-09, 2009-10 and 2010-11 are not consider in the calculation of 3-year generation-weighted average CO2 emissions per unit net electricity generation. Thus, the calculation of Simple OM is not found in compliance with EB 63 Annex 19. Kindly correct the same.

**Project Participant Response:** **Date:** 13/12/2012

Electricity import has been included for calculation of simple OM.

The values of import data of year 2008-09, 2009-10 and 2010-11 have been included in the calculation of Simple Operating Margin

**Documentation Provided as Evidence by Project Participant:**

Updated ER sheet

**Information Verified by Lead Assessor:**

1. ER calculation sheet dated 13/12/2012
2. Revised PDD Version 07 dated 13/12/2012
3. CEA data base version 07

**Reasoning for not Acceptance or Acceptance and Close Out:**

Validation team has checked the calculation approach of the parameter i.e.  $EF_{grid,OMsimple,y}$  (tCO<sub>2</sub>/MWh; Operating margin CO<sub>2</sub> emission factor of NEWNE grid) using "Tool to calculate emission factor for an electricity system" version 2.2.1 (EB 63 Annex 19). In the revised ER calculation sheet dated 13/12/2012, the Simple OM has been calculated using Option A approach.

The Simple 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 2008-09, 2009-10 and 2010-11) using CEA data base version 07 and will remain fixed throughout the crediting period. It is found that in line with Page 10 of EB 63 Annex 19, PP has considered the Electricity import data of year 2008-09, 2009-10 and 2010-11 (as footnote 6 of EB 63 Annex 19 mentions that "an import from a connected electricity system should be considered as one power source") in the calculation of 3-year generation-weighted average CO2 emissions per unit net electricity generation. Thus, the calculation of Simple OM is now exactly found in compliance with EB 63 Annex 19.

Based on the above correction, the simple OM calculation results the value of 0.9842 tCO<sub>2</sub>/MWh.

	NEWNE (tCO <sub>2</sub> /MWh)
OM	0.9842
BM	0.8588
CM - wind	0.9528

Thus, based on the above, finding is closed.

**Acceptance and Close out by Lead Assessor:** **Date:** 13/12/2012

Date:	22/11/2012	Raised by:	Assessment Team
Type:	CAR	Number:	14
		Reference:	SG10

**Lead Assessor Comment:**

1. The telephone no & FAX no. as mentioned in Annex-1 of PDD are not matching with the information on the same in the MOC dated 11/10/2012
2. In section B.3 of PDD, the line diagram of the project boundary is not found correct as at the project site there are non-project WTGs connected to the same substation, however, the same is not included in the diagram.
3. The information on the maturity period of the Risk free rate is not transparently mentioned in section B.5 of PDD,
4. Section B.5 of PDD does not mention any justification that why the Beta value has been considered from BSE 500 and market return has been calculated from the SENSEX.

<b>Project Participant Response:</b>	<b>Date:</b> 29/11/2012
<ol style="list-style-type: none"> <li>1. The telephone no and FAX no has been made in line with the MOC</li> <li>2. The line diagram has been revised to include the WTGs of other customers in the region.</li> <li>3. The information on maturity period has been included in the updated PDD.</li> <li>4. Justification for selection BSE 500 for calculating beta has been included in the updated PDD.</li> </ol>	
<b>Documentation Provided by Project Participant:</b>	
Version 06 of the PDD	
<b>Information Verified by Lead Assessor:</b>	
Revised PDD Version 06 dated 28/11/2012	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	<b>Date:</b> 29/11/2012
<p>1. The telephone no &amp; FAX no. as mentioned in Annex-1 of revised PDD are updated and now exactly matching with the information on the same in the MOC dated 11/10/2012. Closed.</p> <p>2. In section B.3 of PDD, the line diagram of the project boundary is corrected and as non-project activity WTGs at the wind farm is also shown in the project boundary and same is found accurate as all WTGs at the wind farm (Proposed CDM project and non-project activity) WTGs are supplying the electricity to the same substation and sharing the common metering system at the substation, which is in-line with the Power purchase agreement. Thus, the schematic line diagram of the project boundary is correct. Closed.</p> <p>3. The information on the maturity period of the Risk free rate is transparently mentioned in section B.5 of revised PDD, It is clearly mentioned that an average government bond rate (risk free rate) applicable at the time of investment decision for long term investment (for 20 years) has been considered. Verification team has found it appropriate as the Maturation period of 20 years (term of maturity) is found in-line with the life time of the project activity as twenty (20) years as per the expectations of investors for compensating the long term investments over the economic life of the asset. Closed.</p> <p>4. Section B.5 of PDD clearly mentioned the justification for the consideration of BSE 500 for Beta value. The steps for the selection and choice of the companies is provided in the Benchmark calculation sheet by the PP and checked. Further, there are 07 power companies registered with SENSEX (lowest market return is arrived) and BSE 500 have approximate 5 years vintage data available at the time of investment decision of the project activity (this is the reason, the BSE 500 data are not considered in the market return calculation due to lesser vintage period). BSE SENSEX is considered for the calculation of market return as the same resulting the lowest market return (which is most conservative).</p> <p>For the Beta calculations, PP has used BSE 500, as it represents larger list of companies which are present in power sector. The companies selected for beta value are in the business of power generation in India and listed in the stock exchange at the time of investment decision. Considering the large number companies would minimize the bias if any due to prevailing market conditions. In addition to this, validation team has further checked the Beta value using BSE SENSEX data. As on conservative basis, the PP has considered the BSE SENSEX index for the market return calculation and in accordance with the same the listed companies with BSE SENSEX are re-considered in the Beta calculation. It is found that, in the calculation of unlevered beta, considering the BSE SENSEX data will results a higher Beta value (<b>Unlevered beta=0.94</b>) for the above mentioned power companies as verified from the additional benchmark calculation spreadsheet<sup>44/</sup>. Thus, it is confirmed that, the Beta calculation using BSE 500 index is more appropriate as explained above and also conservative. Hence, Closed</p>	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 29/11/2012

Date:	11/12/2012	Raised by:	Assessment team		
Type:	CAR	Number:	15	Reference:	AU4
<b>Lead Assessor Comment:</b>				<b>Date:</b> 11/12/2012	
<p>1. In Section A.4.1.4, the coordinates representing the location of each WTGs is not found correct. Kindly correct the same.</p> <p>2. In section A.4.2 of PDD, the nomenclature of the applied methodology has been noted down incorrectly as ACM002. Kindly correct the same.</p> <p>3. Many of the web-links in the PDD (i.e. Page 19, 20, 28, 29, 30, 31 etc.) are not executable. PP is requested to correct and update all the web-links in the PDD.</p> <p>4. In section B.7.2 of PDD, The formulae for the parameter “share of PP’s net electricity supplied to grid” is not appearing in the .pdf format of PDD. PP is requested to rectify the formatting error in the PDD.</p> <p>5. The formatting and font used in section B.7.2 of PDD is found inconsistent with the guidelines for completing the project design document (CDM-PDD), EB 41 Annex 12. Kindly correct the same. In doing so, kindly refer Para 13 of EB 41 Annex 12.</p>					
<b>Project Participant Response:</b>				<b>Date:</b> 13/12/2012	
<ol style="list-style-type: none"> <li>1. The coordinates representing the location of each WTG has been corrected.</li> <li>2. In section A.4.2 of the PDD the name of the methodology has been corrected.</li> <li>3. All the weblinks have been made executable.</li> <li>4. In section B.7.2 of the PDD the formulae for the parameter “share of PP’s net electricity supplied to grid is now appearing.</li> <li>5. The formatting has been made consistent throughout the PDD.</li> </ol>					
<b>Documentation Provided as Evidence by Project Participant:</b>					
Version 07 of the PDD					
<b>Information Verified by Lead Assessor:</b>					
Revised PDD Version 07 dated 13/12/2012					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>					
<ol style="list-style-type: none"> <li>1. It is found that text in the section A.4.1.4 gets distorted while converting word document of PDD into .pdf file. The Section A.4.1.4 of the revised PDD is checked and found that the coordinates representing the location of each WTGs is now correctly presented. Closed.</li> <li>2. In section A.4.2 of revised PDD, the nomenclature of the applied methodology is corrected as ACM0002 version 12.3.0. The typographical error is rectified by PP. Hence, finding is closed.</li> <li>3. PP has submitted the revised PDD and all the web-links presented in the revised PDD are thoroughly checked and confirmed that all web-links are working properly as accessed on 13/12/2012. Thus, finding is closed.</li> <li>4. In section B.7.2 of PDD, The formatting error is corrected. The formulae for the parameter “share of PP’s net electricity supplied to grid” is now appearing correctly in .pdf format of PDD. Thus, finding is closed.</li> <li>5. PP has submitted revised PDD version 07 and same is checked and found that the formatting and font used in section B.7.2 of PDD are now consistent with the guidelines for completing the project design document (CDM-PDD), EB 41 Annex 12. Validation team has checked the whole PDD and confirmed that the font size, format is consistent with PDD template. Thus, finding is closed.</li> </ol>					
<b>Acceptance and Close out by Lead Assessor:</b>				<b>Date:</b> 13/12/2012	

Comments raised on the proposed CDM project activity during webhosting of PDD for ISHC (24 Feb. 2012- 23 March 2012); Mr. Benedict, E-mail: [benedictcdm@gmail.com](mailto:benedictcdm@gmail.com)

<b>ISHC Comment 1:</b>
<p>1. Purpose of the project and how the proposed project activity reduces greenhouse gas emissions are not briefed in the PDD. Refer section A.2.</p> <p>2. How environmentally safe and sound technology is used for the project and details of technology transfer is not demonstrated adequately. Refer A.4.2</p>
<b>Project Proponent Response:</b>
<p>1. The objective of the proposed CDM project is to generate electricity from environmentally benign sources of energy. This has been clearly mentioned in the section A.2 of the PDD.</p> <p>2. The description of technology has been updated in the version 02 of the PDD.</p>
<b>DOE Remarks:</b>
<p>1. Purpose of the project activity is found included in section A.2 of PDD. <b>Closed.</b></p> <p>2. Section A.4.3 of the revised PDD mentions that the used technology is environmentally safe and there are no emissions associated with the project activity. As per the Schedule of the EIA notification (EIA notification, S.O. 1533 dated 14th September, 2006) and subsequent amendment S.O. 3067(E) dated 01/12/2009 and S.O.695(E), dated 4/04/2011 given by the Ministry of Environment and Forests (Government of India) EIA is not a regulatory requirement in India for wind energy projects. Thus the project activity doesn't require EIA. The project activity does not involve any negative environmental impacts, as the Wind Turbine Generators are installed for generation of power using wind which is a clean source of energy. Latest available notification of Ministry of Environment and Forests with regard to requirement of EIA is referred in section D.1 of revised PDD. <b>Closed.</b></p>

<b>ISHC Comment 1:</b>
<p>Non- debundling nature of the project activity is not adequately justified as per EB54 Annex 13 (Debundling tool). Refer A.4.5.</p>
<b>Project Proponent Response:</b>
<p>Not applicable for large scale project activity.</p>
<b>DOE Remarks:</b>
<p>The proposed CDM project activity is involved the installation of 25.20 MW wind power project and hence it comes under category of large scale CDM project activity. Thus, EB54 Annex 13 is not applicable to this proposed CDM project. <b>Closed.</b></p>

<b>ISHC Comment 1:</b>
<p>Please check the project boundary of the project activity is not based on the guidance of the applicable project category.</p>
<b>Project Proponent Response:</b>
<p>The project boundary is in line with the methodology.</p>
<b>DOE Remarks:</b>
<p>The spatial extent of the project boundary is assessed through the description in the PDD and the grid structure in India as known from the official data available from the Central Electricity Authority (CEA). The project activity boundary therefore includes the project activity WTG and all power plants connected physically to the NEWNE electricity grid of India that the CDM project power plant is connected to. The validation team confirms that the only greenhouse gas relevant to the project activity is CO<sub>2</sub>. This gas is addressed by the applied methodology. Based on the above assessment, the validation team hereby confirms that the identified boundary and the selected sources and gases are justified for the project activity and in compliance with applied methodology ACM0002 version 12.3.0. <b>Closed.</b></p>

<b>ISHC Comment 1:</b>
<p>1. Why has option A (Combined margin) been chosen for calculating emission factor is not justified. Refer B.6.</p> <p>2. The emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants.</p>

3. The selection of simple OM based on low cost/must run resources is not adequately justified. Refer B.6.1
4. PP has not provided for each parameter the chosen value or, where relevant, the qualitative information.
5. Please Provide the actual value applied. Where time series of data is used, where several measurements are undertaken or where surveys have been conducted, provide detailed information.
6. Explain and justify the choice for the source of data.
7. Ex-ante option of calculating OM is not adequately demonstrated. Step 3 of Refer B.6.1
8. Power plants registered as CDM project activities should be included in the sample group that is used to calculate the operating margin if the criteria for including the power source in the sample group apply. This argument is not demonstrated. B.6.1
9. The selection of option (out of two) for calculating OM is not adequately documented with justification. CEA calculation is based on net electricity generation, the average efficiency of each power unit and the fuel types used in each power unit. Step 4 of B.6.1
10. The argument that CEA data for build margin is calculated as per Emission factor tool is not documented. B.6.1
11. Spread sheet is not provided. The data should be presented in a manner that enables reproducing of the calculation of OM, BM, and CM.
12. The emission factor value (Southern grid) for calculating baseline emission is wrong. Refer B.6.3

**Project Proponent Response:**

1. Version 12.3.0 of the methodology ACM0002 has been used. According to the methodology combined margin emission factor should be used to compute the baseline emissions.
2. During calculation of emission factor, only grid connected power plants have been used.
3. According to Version 02.2.1 of "Tool to calculate the emission factor for an electricity system"; The simple OM method (Option a) can only be used if low-cost/must-run resources<sup>2</sup> constitute less than 50% of total grid generation in: 1) average of the five most recent years, or 2) based on long-term averages for hydroelectricity production. This has been clearly demonstrated in the Annex 3 (Baseline Information) of the PDD.
4. Each and every selected parameter has been clearly described in the section B.6.1 of the PDD.
5. Actual values have been provided for every data and their web links have also been provided.
6. All data have been taken from authentic publicly available sources. The web links for the data have also been provided.
7. The calculation of emission factor has been demonstrated as per the latest too in the Annex 3 of the PDD.
8. The emission factors have been calculated from CEA Database version 7, as that is the only authentic source of calculating emission factors. The CEA Database includes CDM projects while calculating OM.
9. According to Version 02.2.1 of "Tool to calculate the emission factor for an electricity system"; The simple OM method (Option a) can only be used if low-cost/must-run resources<sup>2</sup> constitute less than 50% of total grid generation in: 1) average of the five most recent years, or 2) based on long-term averages for hydroelectricity production. This has been clearly demonstrated in the Annex 3 (Baseline Information) of the PDD.
10. The entire emission factor calculation is as per the latest "Tool to calculate emission factor for an electricity system" – Version 02.2.1". This has been clearly described in Annex 3 of the PDD.
11. All spread sheets for the calculation of base line emission factor has been submitted to the DOE.
12. The project is in Gujarat and hence falls under NEWNE grid.

**DOE Remarks:**

1. The applied methodology viz; ACM 0002, version 12.3.0 describes the combined margin to be calculated as per one of the 2 options provided. The project participant has chosen the option to calculate the emission factor using the Tool to calculate the emission factor Version 2.2.1. Hence **closed**.
2. Only grid power plants have been included in the calculation of the operating margin and build margin emission factor and same is mentioned under discussions on step-2. **Closed**.
3. The selection of simple OM based on low cost/must run resources is not adequately justified. **Open**.
4. The quantitative information for each ex-ante fixed parameter has been found included in section B.6.1 of PDD. **Closed**.
5. Actual value for each ex-ante fixed parameter has been found included in section B.6.1 of PDD. **Closed**.
6. Source of data used for simple OM and BM is Central Electricity Authority:CO<sub>2</sub> Emission Database CEA

CO<sub>2</sub> Baseline database Version 07, which is the latest available at the time of submission of PDD for validation and same is found in line with EB 63 Annex 19. **Closed.**

7. Ex-ante option of calculating OM is not adequately demonstrated. **Open.**

8. The Simple OM emission factor has been published by CEA and same is calculated in line with EB 63 Annex 19. The CEA Database includes CDM projects while calculating OM. **Closed.**

9. Project participant has calculated emission factor based on CEA database version 07 which was the latest available database available at the time of PDD submission for validation of the project activity. Approach used is found to be in line Tool to calculate the emission factor for an electricity system version 2.2.1. This is found to be appropriate and it is accepted. **Closed.**

10. The argument that CEA data for build margin is calculated as per Emission factor tool is not documented. **Open**

11. A separate spread sheet for the calculation of base line emission factor has been provided and same is checked and found in line with the EB 63 Annex 19. All input values are sourced from the CEA data base version 07. **Closed.**

12. The proposed CDM project is located in Gujarat state and as per CEA data base version 07, Gujarat is falls under NEWNE grid. The calculated value of EF<sub>grid,CM</sub> for NEWNE grid is found correct. **Closed.**

**Project Proponent Response:**

3. The selection of simple OM based on low cost/must run resources has been adequately justified in the version 03 of the PDD.

7. Ex-ante option of calculating OM has been adequately demonstrated in the version 03 of the PDD.

10. The argument that CEA data for build margin is calculated as per Emission factor tool has been clearly documented in the version 03 of the PDD.

**DOE Remarks:**

3) & 7). Annex-4 of PDD transparently demonstrated that the average share of the low cost/ must run resources in the last 5 years is 17.68%, which is less than 50% of the total grid generation. The share of Must-Run (Hydro/Nuclear) (% of Net Generation) is verified from the CEA database version 07 available at the time of submission of PDD for validation. Thus, the use of simple OM based on low cost/must run resources has been adequately justified in the version 03 of the PDD. **Closed.**

10)  
 Project participant has used the official published data on operating and build margin emission factors which is calculated as per the “Tool to calculate emission factor for an electricity system”. The version of the CEA database used is Version 07, which was available on the start date of validation viz; webhosting date of the PDD. This data is published by Central Electricity Authority (CEA), who is the sole authority for the publication of such data in India.  
 This data is based on Version 2.2.1 of the ‘Tool to calculate the emission factor for an electricity system’. Since the Indian Electricity system, wherein the proposed project activity is located in, is well defined and is not located partially or fully in any Annex 1 country, the Step 1 of the tool is still applicable to the project activity. Further since step 2 is optional, the project participant have not considered Step 2 in the estimation of the operating margin and build margin, since the CEA database version 07 calculates the values of operating margin and build margin considering data for grid power plants only. Hence CEA database can still be used. Project participant has applied weight factors for the OM and BM [75% & 25% respectively] as specified in the tool to arrive at the emission factor for the combined margin. The years considered for OM are 2008-09 to 2010-11 and for the BM it is 2010-11. Thus, the use of BM of year 2010-2011 in line with EB 63 Annex 19 is justified appropriately. **Closed.**

**ISHC Comment 1:**

1. The justification of choosing IRR as financial indicator is not adequately justified. Whether it is equity or project IRR, pre-tax or post tax is not mentioned in the PDD.
2. Basis of choosing PLR as benchmark is not adequately demonstrated in the PDD
3. All the issues of investment analysis guidelines are not discussed in the PDD. Refer B.5.
4. Justification of parameters including O&M, insurance, loan, derating, escalation, and tariff are not demonstrated with justification. Refer B.5.
5. Please provide a proof for proposed debt to equity taken at the investment decision. Refer B.5
6. Proof for PLF is not justified.
7. Date of offer is not provided
8. Project cost is not as per state norms. Refer B.5.

9. O&M charges and its escalation is not as per norms
10. IT rate assumed is not as per standard practice.
11. The application of MAT which is based on tax holiday while calculating WACC is not appropriate.
12. Not demonstrated that the proposed project activity is additional as per options provided under attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities.
13. CER revenue assumed is not consistently applied
14. Project cost is not as per norms, DOE has to check and clarify.
15. The project cost of the project should be based on offer and not on purchase order or tariff order.
16. O&M charges considered are on higher side. Pls. clarify.
17. Benchmark calculation is not as per WACC tool (EB53 Annex 8)
18. Whether pre-tax or post tax IRR is selected is not demonstrated in the PDD.
19. The basis of calculation of benchmark is not documented in the section B.5. PLR is not acceptable benchmark for the project. WACC based on Government bonds, risk premiums should be taken.

**Project Proponent Response:**

1. As per the Version 06.0.0 of "Tool for the demonstration and assessment of additionality", If the CDM project activity and the alternatives identified in Step 1 generate no financial or economic benefits other than CDM related income, then apply the simple cost analysis (Option I). Otherwise, use the investment comparison analysis (Option II) or the benchmark analysis (Option III). Since the proposed project activity generates revenues through sales of electricity, benchmark analysis has been selected. Hence for the benchmark analysis, Equity Internal Rate Return been used as financial indicator and return on equity (RoE) has been used as benchmark.
2. Return on Equity (ROE) has been used as benchmark and justification for the same has been incorporated in the PDD.
3. PDD has been updated in line with "guidelines on the assessment of Investment Analysis" version 05 EB 62.
4. The verifiable evidence for the parameters considered for the financial analysis has been submitted to the DOE.
5. The debt to equity structure is as per GERC tariff order dated 31 March 2010.
6. The PLF of 22.95% assumed in the investment analysis is determined by the third party contracted by the project proponent. This is compliance with EB 48 Annex 11..
7. Date of quotations received from Suzlon is same as the date of offer.
8. Project cost has been considered on the basis of the quotations received from Suzlon at the time of decision making.
9. O&M charges have been considered on the basis of quotations received from Suzlon at the time of decision making.
10. Income Tax rate considered is 33.99% which is Income tax rate for FY 2010-2011.
11. Since the project proponent has used Return on Equity as benchmark and hence WACC has not been considered to prove additionality
12. The project is not a small-scale CDM project activity
13. CER revenue is not included in the financial sheet and calculated post tax-equity IRR without considering CDM benefit to demonstrate additionality.
14. The project cost is assumed on the basis of the quotations received from Suzlon. The same has been submitted to the DOE.
15. The project cost is based on the quotations received from Suzlon.
16. The O&M cost assumed are on the basis of quotations received from Suzlon.
17. The financial indicator for the purpose of proving additionality is equity IRR. Hence Return on Equity has been used as benchmark.
18. Post tax equity IRR has been considered. The same has been updated in the PDD.
19. The benchmark calculated is calculated on the basis of the default return on equity value provided by UNFCCC in Version 05 of GUIDELINES ON THE ASSESSMENT OF INVESTMENT ANALYSIS. The inflation rate is then added to this default bench mark. This has been mentioned in the section B.5 of the PDD.

**DOE Remarks:**

1. Section B.5 of the PDD clearly mentions that Equity IRR is calculated for the project activity and demonstration of the same is provided in section B.5 of PDD. This is found to be appropriate and it is

- accepted. **Closed.**
2. Return on Equity (ROE) has been used as benchmark and justification for the same has been provided in the PDD This is found to be appropriate and it is accepted. **Closed.**
  3. All the applicable guidelines under the investment analysis guidelines (EB 62, annex 05) have been discussed in section B.5. This is found to be appropriate and it is accepted. **Closed.**
  4. All the input values such as O&M, insurance, interest rate, debt-equity ratio, escalation and tariff rate are checked and confirmed from quotations/publically available data available at the time of investment decision. Input values like project cost, O&M cost, escalation etc are further crosschecked from purchase order issue to the technology supplier. This is found to be appropriate and it is accepted. **Closed.**
  5. The debt to equity structure is as per GERC tariff order dated 31 March 2010, which is based on standard practice. This is found to be appropriate and it is accepted. **Closed.**
  6. The PLF of 22.95% assumed in the investment analysis is determined by the third party contracted by the project participant. This is compliance with EB 48 Annex 11. This is found to be appropriate and it is accepted. **Closed.**
  7. Date of Quotation/offer letter is provided in section B.5 of PDD. **Closed.**
  8. Project cost has been considered on the basis of the quotations received from Suzlon at the time of decision making and same is cross checked from the purchase order issued to technology supplier. This is found to be appropriate and it is accepted. **Closed.**
  9. O&M cost and escalation have been considered on the basis of quotations received from Suzlon at the time of decision making same is cross checked from the original O & M agreement. This is found to be appropriate and it is accepted. **Closed.**
  10. Income Tax rate considered is 33.99% which is Income tax rate for FY 2010-2011 and found correct. **Closed.**
  11. The PP has used Return on Equity as benchmark and hence WACC has not been considered. However, the appropriateness of the application of RoE based on Appendix A of EB 62 Annex 5 is not justified in line with para 06 of EB 62 Annex 5. **Open.**
  12. Since, project activity is a larger scale project. The additionality is demonstrated by PP following the tool "Tool for the demonstration and assessment of additionality" Version 6, hence, attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities is not applicable to the project activity. **Closed.**
  13. The PP has calculated post tax-equity IRR without considering CDM benefit to demonstrate additionality as per the requirement of "Tool for the demonstration and assessment of additionality", Version 6.0. **Closed**
  14. Project cost has been considered on the basis of the quotations received from Suzlon at the time of decision making and same is cross checked from the purchase order issued to technology supplier. This is found to be appropriate and it is accepted. **Closed.**
  15. Project cost has been considered on the basis of the quotations received from Suzlon at the time of decision making and same is cross checked from the purchase order issued to technology supplier. This is found to be appropriate and it is accepted. **Closed.**
  16. O&M cost and escalation have been considered on the basis of quotations received from Suzlon at the time of decision making same is cross checked from the original O & M agreement. This is found to be appropriate, conservative and it is accepted. **Closed.**
  17. The PP has used Return on Equity as benchmark and hence WACC has not been considered. However, the appropriateness of the application of RoE based on Appendix A of EB 62 Annex 5 is not justified in line with para 06 of EB 62 Annex 5. **Open.**
  18. Section B.5 of the PDD clearly mentions that Post tax Equity IRR is calculated for the project activity and demonstration of the same is provided in section B.5 of PDD. This is found to be appropriate and it is accepted. **Closed.**
  19. The PP has used Return on Equity as benchmark and hence WACC has not been considered. However, the appropriateness of the application of RoE based on Appendix A of EB 62 Annex 5 is not justified in

line with para 06 of EB 62 Annex 5. <b>Open.</b>
<b>Project Proponent Response:</b>
The PP has calculated the benchmark based on available market data at the time of decision making time. PP has chosen BSE 500 index to calculate beta as it represent the larger group of companies and hence the same has been used to arrive at the market return. Since the Base year for BSE 500 is 01 <sup>st</sup> February 1999 with an index value of 1000, PP has consider the time period and the index value from the base year to arrive at the market returns. And the expected return on equity was arrived to 18.19%. since the default by UNFCCC was available at the time of webhosting, the benchmark has been revised to 17.45% based on default value at the time of webhosting. Since the BSE 500 index available for 11 years, PP has now used the index BSE SENSEX which is the index available for longest time period to arrive at the market return and the same has been found to 18.65%. with the revised market return, the benchmark found to be 17.42% and the project proves to be additional at all scenarios considering the benchmark of 17.42%.
<b>DOE Remarks:</b>
11), 17) & 19): The benchmark selected for the project activity is as per the CDM EB guidance on assessment of investment analysis. The project activity is electricity generation based on wind energy which could be developed by an entity other than project participant. The benchmark should thus be based on publicly available data sources. The financial indicator applied for the project activity is post tax equity IRR and the benchmark used for the project activity is required rate of return on equity for the project calculated using the Capital Asset Pricing Model (CAPM). As per CAPM, the required return on equity investment is the return of a risk-free security plus beta times the difference between the market return and the risk-free return. The Government Securities have been taken to represent the risk free return. Stock index has been used to represent the market return. Power industry specific beta value has been applied to represent the market returns relevant to the risk of the project activity sector. Financial expert has reviews the Benchmark calculation approach and found appropriate. For details, please refer CAR 12.

<b>ISHC Comment 1:</b>
<ol style="list-style-type: none"> <li>1. Prior consideration of CDM which is important for the determination of additionality is not documented in the section B.5 of the PDD.</li> <li>2. Date of PPA is not mentioned in the prior consideration of CDM</li> </ol>
<b>Project Proponent Response:</b>
<ol style="list-style-type: none"> <li>1. The table "Chronology of events" in section B.5 of the PDD contains clear mention of the chronology of events for CDM consideration.</li> <li>2. The date of PPA is not related to prior consideration of CDM.</li> </ol>
<b>DOE Remarks:</b>
<p><b>1. Assessment of prior CDM consideration and continuous actions to secure CDM status</b></p> <p>The start date of the project activity has been identified as 11 January 2011 which corresponds to the date of issue of work order on M/s Suzlon Energy Limited for supply of the wind energy generators for the project activity. This has been found to be appropriate in line with CDM-Glos-05 as this is the date of earliest financial commitment.</p> <p>Since the project start date is after 2 August 2008, Caparo Energy India Limited (currently known as MEIL) has notified the DNA and UNFCCC in writing of the commencement of the project activity on 16 August 2010 and of the intention to seek CDM status. Caparo Energy India Limited has sent the prior consideration form to UNFCCC on dated 07 April 2011. Validation team could verify from UNFCC website that the intimation was received by them on 07 March 2011 which is within six months from the start date. Hence serious consideration of CDM in the decision to proceed with the project activity has been confirmed. Therefore, validation team is of the opinion that the proposed CDM project activity complies with the requirements of the latest version of the guidance (EB 62/Annex 13) on prior consideration of CDM. <b>Closed.</b></p> <p><b>2. In line with EB 62/Annex 13, date of PPA is not mandatory to be intimated to UNFCCC and DNA. Closed.</b></p>

<b>ISHC Comment 1:</b>
<ol style="list-style-type: none"> <li>1. The PP has not explained and justified the key assumptions and rationale.</li> <li>2. The PP and consultant has not illustrate in a transparent manner all data used to determine the baseline emissions.</li> </ol>

3. National policies and circumstances relevant to the baseline of the proposed project activity are not being summarized clarify.
4. Explain and justify all relevant methodological choices for the proposed project activity
5. Data that is calculated with equations provided in the approved category or default values specified in the category should not be included in the compilation.

**Project Proponent Response:**

1. All the key assumptions and rationale have been explained and justified in the PDD.
2. The date used to determine the baseline emission has been substantiated with the verifiable evidence.
3. National policies relevant to baseline scenario have been updated in the version02 of the PDD.
4. All the methodological choices have been identified and explained in B.6.1.
5. The data used for the project activity has been presented appropriately in the PDD.

**DOE Remarks:**

Section B.4 of PDD is not revised based on the above comments. **Open.**

**Project Proponent Response:**

The Section B.4 of version 03 of PDD has been revised based on the above comments.

Section B.4 of PDD has been reviewed and found appropriately filled as per CDM-PDD filling guideline version 05. **Closed.**

**ISHC Comment 1:**

The justification of negligible project emissions for wind project is not as per AMS. I. D ver 16.0 EB 54).

**Project Proponent Response:**

The project is a large scale project. Hence AMS. I. D ver 16.0 EB 54 is not applicable for the project.

**DOE Remarks:**

The proposed CDM project activity is involved the installation of 25.20 MW wind power project and hence it comes under category of large scale CDM project activity. Thus, AMS. I. D is not applicable to this proposed CDM project. **Closed.**

**ISHC Comment 1:**

1. Net electricity should be continuously monitored, hourly measured and at least monthly recorded. Refer B.7.1
2. Metering regulations as per CEA norms is not adequately followed in monitoring plan. Refer B.7.2.
3. Where the values have been measured, include a description of the measurement methods and procedures that comply with the guidance provided under general guidance.
4. Provide a detailed description of the monitoring plan, including an identification of the data to be monitored and the procedures that will be applied during monitoring.
5. The PP should include sources of data that will be actually used for the proposed project activity (e.g. which exact national statistics, actual measurement etc. ).
6. Where the parameters are to be measured in accordance with the guidance of the approved project category or the general guidance to the indicative methodologies, specify the measurement methods and procedures including accepted industry standards or national or international standards which will be applied, which measurement equipment is used, how the measurement is undertaken.
7. Which calibration procedures are applied, what is the accuracy of the measurement method, who is the responsible person / entity that should undertake the measurements and what is the measurement interval?
8. Please provide a detailed description of the monitoring plan. Describe the operational and management structure that the project operator will implement in order to monitor emission reductions.
9. Clearly indicate the responsibilities for and institutional arrangements for data collection and archiving.
10. The monitoring plan should reflect good monitoring practice appropriate to the type of project activity. Provide any relevant further background information.

<b>Project Proponent Response:</b>
<ol style="list-style-type: none"> <li>1. Net electricity is monitored continuously, but recorded monthly.</li> <li>2. The monitoring plan has been revised.</li> <li>3. The monitoring plan has been revised and the description of the measurement methods has been mentioned.</li> <li>4. The relevant data to be monitored has been identified and the measurement method has been mentioned in the PDD.</li> <li>5. The sources of data have been provided with necessary web links wherever they have been used.</li> <li>6. Description of the measurement methods and the relevant industry standards has been mentioned.</li> <li>7. Calibration of the meters is under the purview of GETCO. The accuracy class of the meters have been specified. The GETCO officials are responsible for calibration.</li> <li>8. The detailed description of the monitoring plan has been included. Operational and management structure has also been included.</li> <li>9. The roles and responsibilities for collecting and archiving data has been included.</li> <li>10. The project has designed a robust and effective monitoring practice. This has been included in the PDD.</li> </ol>
<b>DOE Remarks:</b>
Section B.7 of PDD is not revised based on the above comments. <b>Open.</b>
<b>Project Proponent Response:</b>
Section B.7 of PDD has been revised based on the above comments. It can be observed in version 03 of PDD.
<b>DOE Remarks:</b>
<b>Please refer CAR 10.</b>

<b>ISHC Comment 1:</b>
<ol style="list-style-type: none"> <li>1. Please describe the process by which comments by local stakeholders have been invited and compiled. An invitation for comments by local stakeholders shall be made in an open and transparent manner, in a way that facilitates comments to be received from local stakeholders and allows for a reasonable time for comments to be submitted.</li> <li>2. Project participants shall describe a project activity in a manner which allows the local stakeholders to understand the project activity.</li> </ol>
<b>Project Proponent Response:</b>
<ol style="list-style-type: none"> <li>1. Stakeholders were invited through personal invitations. The feedback of the stakeholders was received in questionnaire. The details of the same have been included in the PDD and the stakeholder documents have been shared with the DOE.</li> <li>2. The stakeholders were made aware of the project activity by employees of MEIL in local language so that they could understand the project activity. Necessary details have been shared with the DOE.</li> </ol>
<b>DOE Remarks:</b>
<ol style="list-style-type: none"> <li>1. The local stakeholders were invited through personal invitations. Invitations letters were sent to village sarpanch, contractors, local villagers etc. Copy of personal invitations sent, filled questionnaire, attendance records of local stakeholders meeting and minutes of the meeting of the local stakeholder consultation have been verified by Validation team. The validation team believe that the time provided to the local stakeholders for providing comments on the Project Activity is adequate. <b>Closed.</b></li> <li>2. Project participant have informed the local stakeholders about the project activity during the local stakeholder meeting and relevant questions were asked to stakeholders to make aware them about the project activity. The same was verified by the validation team during the personal interaction with some of the local stakeholders during the validation site visit. Thus, adequacy of the local stakeholder consultation process is checked and found satisfactory. <b>Closed.</b>        Based on the above, validation team confirmed that the adequacy of the local stakeholder consultation process in compliance with Para 128-129 of VVM/version 1.2.</li> </ol>

Comments raised on the proposed CDM project activity during webhosting of PDD for ISHC (24 Feb. 2012- 23 March 2012); Mr. Mahesh Pandya, Environmental Engineer, Paryavaran mitra, E-mail: [paryavaranmitra@yahoo.com](mailto:paryavaranmitra@yahoo.com)

<b>ISHC Comment 2:</b>
Please explain location selection criteria
<b>Project Proponent Response:</b>
The project proponent has decided to invest in various potential wind farm locations across the country. With regard to specific locations of each wind turbine, the same has been provided by the technology supplier.
<b>DOE Remarks:</b>
As per on site assessment, PP has entered into an agreement with the technology supplier i.e. Suzlon Energy Limited. The specification location of WEG installations has been selected in consultation with the technology supplier. <b>Closed.</b>

<b>ISHC Comment 2:</b>
Does project owner had any kind of wind based energy business experience?
<b>Project Proponent Response:</b>
This is the first time the project participant is investing in wind energy business.
<b>DOE Remarks:</b>
As per interviews with the PP and based on information available at company webpage ( <a href="http://www.mytrah.com/">http://www.mytrah.com/</a> ), The Mytrah Energy (India) Limited (MEIL) (the PP) is one of India's fastest growing Independent Power Producers with a focus on developing wind power to meet the increasing demand for power and till date around 194 MW wind power capacity is already under operation. Also, the proposed project is first wind power project by Mytrah Energy (India) Limited (MEIL). <b>Closed.</b>

<b>ISHC Comment 2:</b>
1. How many skilled/unskilled people from surrounding area were employed at this project during commissioning and operation as mentioned in social well being section? 2. List of stakeholders and minutes of stakeholder meeting is not attached with PDD.
<b>Project Proponent Response:</b>
1. The project proponent has appointed Suzlon to execute the project on turnkey basis and O&M has been outsourced to the technology supplier. 2. List of stakeholder documents, minutes of meeting has been shared with the DOE.
<b>DOE Remarks:</b>
1. During site visit interview validation team could confirm that local people have been employed for various activities related to the project. <b>Closed.</b> 2. Validation team evidenced the attendance sheet of the stakeholder meeting, minutes of meeting and find that all stakeholders have been represented including the elected people's representative of the village panchayat. <b>Closed.</b>

<b>ISHC Comment 2:</b>
What would be impact of negative environmental conditions of area upon project? What would be alternatives in that case?
<b>Project Proponent Response:</b>
The project proponent has invested in a wind farm being developed by Suzlon with all legal / regulatory clearances / sanctions in place. Therefore, no negative environmental conditions are expected.
<b>DOE Remarks:</b>
There is no negative impact of WEG installation or its operation. Also, as per the Schedule 1 of the EIA notification dated 14th September 2006 and subsequent amendment S.O. 3067(E) dated 01/12/2009 and S.O.695(E), dated 4/04/2011, given by the Ministry of Environment and Forests (Government of India) under the Environment (Protection) Act 1986, environmental impact assessment is not a regulatory requirement in India for wind energy projects. <b>Closed.</b>

**A.4 Annex 4: Team Members Statements of Competency**

Name: Vishnu Patidar

**Status**

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

**Scopes of Expertise**

- 1. Energy Industries (renewable / non-renewable)**   
 Technical Area(s): TA 1.2 Energy generation from renewable energy sources
- 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: 15/02/2012

Name: Anshul Sharma

**Status**

- Lead Assessor	<input checked="" type="checkbox"/>	- Expert	<input type="checkbox"/>
- Assessor	<input checked="" type="checkbox"/>	- Financial Expert	<input checked="" type="checkbox"/>
- Local Assessor	<input checked="" type="checkbox"/> India	- Technical Reviewer	<input type="checkbox"/>

**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

Name: NAYAN  
 JYOTI  
 DEKA

**Status**

- Lead Assessor	<input checked="" type="checkbox"/>	- Expert	<input checked="" type="checkbox"/>
- Assessor	<input checked="" type="checkbox"/>	- Financial Expert	<input type="checkbox"/>
- Local Assessor	<input checked="" type="checkbox"/>	- Technical Reviewer	<input checked="" type="checkbox"/>

**Scopes of Expertise**

<b>1. Energy Industries (renewable / non-renewable)</b>	<input checked="" type="checkbox"/>
Technical Area(s):	
TA 1.1 Thermal energy generation from fossil fuels and biomass	
TA 1.2 Energy generation from renewable energy sources	
<b>2. Energy Distribution</b>	<input type="checkbox"/>
Technical Area(s):	
<b>3. Energy Demand</b>	<input type="checkbox"/>
Technical Area(s):	
<b>4. Manufacturing</b>	<input type="checkbox"/>
Technical Area(s):	
<b>5. Chemical Industry</b>	<input type="checkbox"/>
Technical Area(s):	
<b>6. Construction</b>	<input type="checkbox"/>
Technical Area(s):	
<b>7. Transport</b>	<input type="checkbox"/>
Technical Area(s):	
<b>8. Mining/Mineral Production</b>	<input type="checkbox"/>
Technical Area(s):	
<b>9. Metal Production</b>	<input type="checkbox"/>
Technical Area(s):	
<b>10. Fugitive Emissions from Fuels (solid, oil and gas)</b>	<input type="checkbox"/>
Technical Area(s):	
<b>11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b>	<input type="checkbox"/>
Technical Area(s):	
<b>12. Solvent Use</b>	<input type="checkbox"/>
Technical Area(s):	
<b>13. Waste Handling and Disposal</b>	<input type="checkbox"/>
Technical Area(s):	
<b>14. Afforestation and Reforestation</b>	<input type="checkbox"/>
Technical Area(s):	
<b>15. Agriculture</b>	<input type="checkbox"/>
Technical Area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 20/07/2012