



# VALIDATION REPORT

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MALAXMI WIND POWER

WIND POWER PROJECT IN KARNATAKA  
INDIA

REPORT No.  
CDM.11.VAL.0160



<b>Date of this issue:</b> 22/11/2012	<b>KBS Ref. No.:</b> CDM.11.VAL.0160	
<b>Organisational Unit:</b>	<b>Client:</b>	
Climate Change Division, KBS	Malaxmi Wind Power	
<b>Project Design Document</b>		
<b>First PDD:</b>	<b>Final PDD:</b>	
Version: 01	Version: 07.1	
Date: 20/10/2011	Date: 16/11/2012	
<b>Summary of validation:</b>		
Malaxmi Wind Power has commissioned KBS to perform the validation of the proposed CDM project activity:		
Project Title:	Wind Power Project in Karnataka India	
Methodology Applied:	AMS-I,D version 17	
Sectoral Scopes:	01	
Validity of methodology/ies (for RfR):	Valid from 17/06/2011 onwards	
<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 the latest version of CDM Validation and Verification Manual, 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 desk review, follow up actions (e.g., on site visit, electronic (telephone or e-mail) interviews) and also the review of the applicable approved methodological and relevant tools, guidances and CDM decisions.</p> <p>The review of the project design documentation and the subsequent follow-up interviews have provided KBS with sufficient evidence to determine the project's fulfillment of all the stated criteria. In our opinion, the project meets all applicable UNFCCC requirements for the CDM.</p> <ul style="list-style-type: none"> <li>- <input checked="" type="checkbox"/> Will be recommended to the CDM Executive Board with a request for registration</li> <li>- <input type="checkbox"/> Is not recommended for registration</li> </ul>		
<b>Validation Status:</b>		<input type="checkbox"/> Findings not closed
<b>Project type:</b>	Small scale	<input type="checkbox"/> Draft validation report
<b>Subject:</b> CDM Validation (VVM V1.2 track)		<input checked="" type="checkbox"/> Final validation report
<b>Validation Team:</b>		<b>Document Distribution</b>
Team Leader: Sanjay Kandari Local Expert: Sanjay Kandari Technical Expert (TA 01.2): Sanjay Kandari Financial Expert: Abhishek Mahawar		<input checked="" type="checkbox"/> No Distribution without permission from the client
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Technical Reviewer: Sunil Kathuria Date: 26/11/2012 Technical Expert: Phool Chand	Name: Ashok Kumar Gautam Date: 07/12/2012	
Name: Kaushal Goyal, Managing Director Date: 07/12/2012		<input type="checkbox"/> Limited Distribution
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1	01/10/2012	
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### Abbreviations

AMS	Applied Small Scale Methodology
BM	Build Margin
BE	Baseline Emissions
BPLR	Benchmark Prime Lending Rate
CAR	Corrective action request
CL	Clarification Request
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> e	Carbon dioxide equivalent
CMS	Control Monitoring Station
CDM	Clean development mechanism
CDM EB	EB CDM Executive Board
CM	Combined Margin
CER	Certified Emission Reduction
CERC	Central Electricity Regulatory Commission
CEA	Central Electricity Authority
CCX	Core CarbonX Solutions Pvt Ltd
DOE	Designated Operational Entity
DNA	Designated National Authority
DISCOM	Distribution Supply Company
DE	Derived Energy
EB	Executive Board
EF	Emission Factor
ER	Emission Reductions
EIA	Environmental Impact Assessment
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GSP	Global Stakeholder Process
GESCOM	Gulbarga Electricity Supply Company Limited
GBI	Generation Based Incentive
GWh	Giga Watt hour
HCA	Host Country Approval
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization of Standardization
IRR	Internal Rate of Return
JMR	Joint Meter Reading
KPTCL	Karnataka Power Transmission Corporation Limited (KPTCL)
kW	Kilo Watt
kWh	Kilo Watt Hour
KREDL	Karnataka Renewable Energy Development Limited
KERC	Karnataka Electricity Regulatory Commission
KBS	KBS Certification Services Pvt. Ltd
LoA	Letter Of Approval
LSC	Local Stakeholder Process
MOEF	Ministry of Environment and Forests
MOP	Meeting of Parties
MoC	Modalities of Communication
MP	Monitoring Plan
MWP	Malaxmi Wind Power
MW	Mega Watt
MWh	Mega Watt Hour
MNRE	Ministry of New and Renewable Energy
NCDMA	National CDM Authority
NEWNE	Northern, Eastern, Western and North-Eastern
ODA	Official Development Assistance
OM	Operating Margin



O&M Costs	Operation & Management Costs
PDD	Project Design Document
PP	Project Participant
PE	Project Emissions
PLF	Plant Load factor
PPA	Power Purchase Agreement
PO	Purchase Order
QA/QC	Quality Assurance/Quality Control
RfR	Request for Registration
RLDC	Regional Load Dispatch Centre
RBI	Reserve Bank of India
SEL	Suzlon Energy Limited
SLM	Straight Line Method
SEB	State Electricity Board
VVM	Validation and Verification Mechanism
UNFCCC	United Nations Framework Convention on Climate Change
WACC	Weighted Average Cost of Capital
WPI	Wholesale Price Index
WEG	Wind Energy Generators
WTG	Wind Turbine generator

1 lakh = 100,000

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## 1. Validation Opinion

KBS Certification Services Pvt. Ltd. Has been contracted by Malaxmi Wind Power to perform a validation of the project:

Project title: Wind Power Project in Karnataka India

Host Party: India

The validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism, latest version of Validation and Verification Manual and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The proposed CDM project activity will result in reductions of greenhouse gas (GHG) emissions that are real, measurable and give long-term benefits in mitigating climate change. In our opinion, the project meets all relevant UNFCCC, CDM criteria and all relevant host country criteria.

The project correctly applies methodology AMS-I,D version 17. It is demonstrated that the project is not a likely baseline scenario. The 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 35,050 tCO<sub>2</sub>e over a 10 year crediting period during 01/01/2013 to 31/12/2022, averaging 3,505 tCO<sub>2</sub>e annually. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achievable given the underlying assumptions do not change.

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

### Authorized Signatory



Signature:

Name: Kaushal Goyal

Place: Faridabad, Haryana, India

Date: 07/12/2012

## **2. Introduction**

### **2.1 Objective**

Malaxmi Wind Power has commissioned KBS to perform the validation of the project: Wind Power Project in Karnataka India with regard to the relevant requirements for Clean Development Mechanism (CDM) project activities.

The purpose of validation is to ensure a thorough, independent assessment of proposed CDM project activities submitted for registration as a proposed CDM project activity against the applicable CDM requirements.

In particular, the project's baseline, the monitoring plan (MP) and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. The 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, monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. KBS has employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

### 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 PDD, version 01 dated 20/10/2011<sup>/01/</sup>, its subsequent versions and final version 7.1 dated 16/11/2012<sup>/02/</sup>.

The assessment is performed by a validation team using a validation protocol attached as Annex 1.

The site visit was undertaken by previous team members Dinesh Mane (Team Leader & Technical Expert) & Ambuj Adhwaryu (Validator). The details are mentioned below;

**Table 1**

<b>Location:</b>	Bellary, Karnataka	
<b>Dates:</b>	13/12/2011 to 15/12/2011	
<b>Key points discussed:</b>	<b>Name of person, interviewed</b>	<b>Designation, Organization</b>
Project Description, baseline, additionality and monitoring plan, emission reduction calculation	Arun Subramanyam Sandeep Kota	➤ Malaxmi Wind Power ➤ CoreCarbon X Solutions Private Limited
Monitoring plan, metering, calibration, QA/QC procedure	K. Krrishnan Biju George	➤ Suzlon ➤ Site Substation
Local Stakeholder Consultation process	V, Srinivas	Local Villager
Local Stakeholder Consultation process	Moh. Alam, Ranga Raju Ganeshan	Local Villager

#### 3.2 Use of the Validation Protocol

The validation protocol used for the assessment is designed in accordance with the latest version of Validation and Verification Manual<sup>/25/</sup>. 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 1 to this report

#### 3.3 Findings

As an outcome of the validation process, the validation 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 validator shall raise a **Corrective Action Request (CAR)**. A CAR is issued, where:

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

**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 2). In this form, the project participant 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, the validation opinion prepared by Team Leader is independently reviewed by internal Technical Reviewer. TR reviews if all the KBS procedures have been followed and all conclusions are justified in accordance with applicable standards, procedures, guidances and CDM decisions. The TR either is qualified for the technical area within the CDM sectoral scope applicable to project activity or is supported by qualified independent technical expert at this stage.

The Technical Reviewer will either accept or reject the recommendation made by the assessment team. The findings can be raised at this stage and project participant must address them within agreed timeline.

The opinion recommended by Technical Reviewer will be confirmed by Manager Technical & Certification and finally authorized by the Managing Director on behalf of KBS as final validation opinion.

## 4. Validation Findings

### 4.1 Approval

#### Discussion:

KBS confirms that it has entered into a contractual agreement with 'Malaxmi Wind Power' which is the project participant, for performing the validation. The PDD indicates that the project activity is a unilateral CDM project.

The host party for the proposed the project activity is India. The host Party India fulfils the participation requirements, having ratified the Kyoto Protocol on the 26<sup>th</sup> August 2002 and having established National Clean development Mechanism Authority, Ministry of Environment and Forests (MoEF), as its DNA and the same was confirmed from UNFCCC status of ratification list.

During the validation review it was found that the title mentioned in Prior CDM Intimation Form<sup>/16/</sup> is different from the title mentioned in HCA<sup>/07/</sup> which was in turn different from the webhosted PDD<sup>/01/</sup>. The details of which has been mentioned in table below:-

**Table 2**

Details	Value/Information	Remarks, if any
Project Participant	Malaxmi Wind Power	The name is consistent with the LoA.
Parties Involved	India	The host Party is India, where the project is located.
Project activity title in LOA	Wind Power Project in Karnataka India	The title of the project activity is consistent with LoA; however it was observed that the project title is not consistent among the webhosted PDD <sup>/1/</sup> , prior intimation sent to UNFCCC and LoA issued by DNA. CL 8 (I) was raised and closed satisfactorily during the course of validation.
LoA received	Yes	-
Date of LoA	09/05/2012	As mentioned in the LoA
Reference no.	4/2/2012-CCC	As mentioned in the LoA
LoA received from	directly from PP	-
Validity of LoA	Valid	-

The validation team confirms that the project participants are listed in tabular form in section A.3 of the PDD and this information is consistent with the contact details provided in Annex 1 of the PDD.

#### Findings:

CL# 08(1), CL#08(2), CL #08(17) were raised; please refer Annex-2 of validation report, where same is discussed completely

#### Opinion:

The validation team confirms following;

- The letter of approval<sup>/7/</sup> has been received and clearly referenced above,
- The letter of approval has been received directly from the PP,
- The validation team does not doubt the authenticity of the LoA,
- The letter of approval is in accordance with paragraphs 45 to 48 of VVM V1.2
- The letter of approval is not conditional (as per para 50 of VVM V1.2)

### 4.2 Participation Requirements

#### Discussion:

The project participant M/s Malaxmi Wind Power is from host country India. The host Party India fulfils the participation requirements, having ratified the Kyoto Protocol on the 26<sup>th</sup> August 2002 and having established National Clean development Mechanism Authority, Ministry of Environment and Forests (MoEF), as its DNA.

The project Modalities of Communication (MoC) <sup>/08/</sup>, as signed on 30/07/2012, was directly received from the PP. As required in procedures for Modalities of Communication between Project Participants and the Executive Board, the validation team has verified that the name of Mr. Arun Kumar Subramanyam <sup>/11/</sup> as an authorised signatory for relevant project participant and also confirm that the MOC has been according to the latest template (for VVM V1.2) available on UNFCCC <sup>/44/</sup>. The details of the signatory in the MoC are correct, credible and consistent with the Annex 1 of the final PDD.

**Findings:**

CL# 08(13) was raised; please refer Annex-2 of validation report, where same is discussed completely

**Opinion:**

The validation team confirms following;

- The participation has been confirmed by a Party to Kyoto Protocol,
- The participation of PP has been confirmed in the LoA itself.

**4.3 Project Design Document**

**Discussion:**

The PDD applies CDM-SSC-PDD template, version 03 <sup>/34/</sup> which is the latest version of CDM-SSC-PDD available on UNFCCC website under VVM track. The PDD is completed in accordance with the applicable guidance document "Guidelines for Completing the Project Design Document (CDM-SSC-PDD), version 05.

**Findings:**

CAR#04 and CAR#05 were raised and resolved satisfactorily; please refer Annex-2 of validation report, where same is discussed completely

**Opinion:**

The validation team confirms that final PDD has been prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM

**Table 3**

Key revisions between the final PDD against the first version published for the international stakeholder consultation	
PDD Section no.	Brief description of the changes
Section A.1	The title of the webhosted PDD <sup>/01/</sup> has been updated according to the title mentioned in HCA <sup>/07/</sup> in the final version <sup>/02/</sup> .
Section A.4.2	Title of the Methodology AMS-ID <sup>/29/</sup> is updated.
Section A.4.3	Details of the years chosen for crediting period have been described as per the required format.
Section A.4.5	EB 54 Annex 13 , GUIDELINES ON ASSESSMENT OF DEBUNDLING FOR SSC PROJECT ACTIVITIES along with the flow chart has been described.
Section B.1, B.2 & B.4	Title and reference of methodology along with appropriate paragraph has been updated.
Section B.5	Following changes has been updated: <ul style="list-style-type: none"> <li>Details of National and sectoral policies relevant to project activity.</li> <li>Reference to EB 48, Annex 11 added.</li> <li>Details of Sensitivity analysis which including PLF, Project Cost, O&amp;M Costs, Tariff and Benchmark have been included in tabular form.</li> <li>IRR has reduced from 9.74% to 7.97%.</li> <li>Sensitivity analysis is added for the capacity proposed at the time of decision making i.e. 4.2 MW.</li> </ul>

Key revisions between the final PDD against the first version published for the international stakeholder consultation	
Section B.6.3	Parameters for determination of $EF_{grid,CM,y}$ have mentioned in tabular form has been updated
Section B.7.1	Details of $EG_{BL,y}$ , $EG_{export,y,Karnataka}$ , $EG_{import,y,Karnataka}$ , $EG_{T-E,y,Karnataka}$ has been updated
Section B.7.2	Details of Roles and responsibilities to be followed onsite during the monitoring plan have been updated
Section B.8	Details of date of completion of baseline and responsible entity have been updated
C.2.2.1	The crediting period date has been updated to start with 01/01/2013
Section E.2 & E.3	Details of summary of comment received and its archiving have been updated.

#### 4.4 Project Description

##### Discussion:

The proposed CDM project activity is a renewable resource (wind) based grid connected power project with an installed capacity of 2.1 MW and the wind energy generator is located in the state of Karnataka is supplying the electricity to southern grid of India. During the site visit<sup>36/</sup> it was confirmed that project activity is already commissioned and same has been cross checked from the transfer Document issued by State Agency for SND-101 to MWP<sup>50/</sup> along with commissioning certificates of the wind energy generators<sup>14/</sup> and from the Power Purchase Agreements<sup>37/</sup>.

The project activity is intended to reduce greenhouse gas (GHG) emission by avoiding fossil fuel based power generation in the Southern grid to which it is connected. The date of commissioning, capacity, latitude and longitude details for all of the WEGs pertaining to the project has been mentioned in tabular form below:

**Table 4**

Capacity in kW/UID	Latitude(N)	Longitude(E)	Date of Commissioning	State
SND-101	15° 23' 54.1"	76° 53' 08.9"	31/03/2011	Karnataka

The geographical coordinates of the site mentioned in the webhosted<sup>101/</sup> and final PDD\_v7.1<sup>102/</sup> were crosschecked from PLF report<sup>45/</sup>, during the site visit and were found consistent with the Prior Consideration of the CDM form.

The technical specifications and operation lifetime (as 20 years) of the installed WTG as mentioned in the final PDD (S-88; 2100kW) was validated from the Technical Specifications of S-88<sup>177/</sup>. The same details pertaining to technology and physical features of the project activity has been validated during site visit and were found in conformance with final PDD.

The project activity is expected to annually displace 3,505 tCO<sub>2e</sub> of electricity from southern regional grid of India for ten year of fixed crediting period that starts from 01/01/2013 upto 31/12/2022.

The project activity contributes to the sustainable development of the host Party as confirmed in the letter of approval issued by DNA of India (Ministry of Environment & Forests)<sup>71/</sup>.

The validation did not reveal instance of public funding that can be considered in any way diversion of ODA from any Annex 1 Party. The documentary support reviewed by the validation team confirms that the project is funded by equity from PP and debt from the bank. The annual reports<sup>27.1/</sup> and loan sanction letters<sup>19/</sup> were validated to verify the same. In addition to PP has also given a declaration<sup>27/</sup> that no ODA funding was received for this project.

##### Findings:

CAR#3, CL# 08 (3,4,7,12,14,18) were raised and successfully closed out, please refer Annex-2 of validation report, where same is discussed completely.

**Opinion:**

The validation team confirms that;

- a) The description of the proposed CDM project activity as contained in the PDD sufficiently covers all relevant elements, is accurate and that it provides the reader with a clear understanding of the nature of the proposed CDM project activity.
- b) Based on the observations made during site visit and reviewing the commissioning certificate, it can be confirmed that the description contained in the final PDD is clear, accurate and complete.

#### **4.5 Baseline and monitoring methodology**

##### **4.5.1 General requirement**

**Discussion:**

The proposed project activity is renewable resource based grid connected power project with an installed capacity 2.1 MW, which is less than 15 MW. Therefore, the project is eligible as Type I small-scale CDM project activity and can apply a simplified baseline methodology.

**Findings:**

CAR#03 was raised and closed, please refer Annex-2 for details.

**Opinion:**

The validation team confirms;

- a) The applied methodology AMS-ID Version 17<sup>/29/</sup> selected by the project participants comply with the methodologies previously approved by the CDM Executive Board.
- b) The proposed CDM project activity, considering it exports the electricity to grid, has correctly applied the selected methodology..
- c) The proposed CDM project activity correctly applied the items indicated in para 67 of VVM V1.2 and same has been discussed under further sections..

##### **4.5.2 Applicability of selected methodology to the project activity**

**Discussion:**

As discussed above the project activity is eligible to use the simplified baseline methodology AMS I.D, version-17<sup>/29/</sup>. The PP has justified the applicability criteria of selected baseline methodology as per table below:-

**Table 5**

Applicability criteria as per methodology	Means of validation
<p>1. <i>This category comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass:</i></p> <p>(a) <i>Supplying electricity to a national or a regional grid.</i></p> <p>(b) <i>Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.</i></p>	<p>The project activity is the installation of one new wind energy generators at a site where there was no renewable power plant operating earlier (green-field plant). This has been verified from the purchase orders<sup>/20/</sup>, also cross checked during the site visit.</p> <p>The electricity generated by the WTG SND-101<sup>/14/</sup> is being supplied into Southern regional grid and same has been cross-checked from PPA signed between Malaxmi Wind power and GESCOM<sup>/37/</sup>.</p>
<p>2. <i>Illustration of respective situations under which each of the methodology (i.e. AMS-I.D, AMS-I.F and AMS-I.A2) applies is included in Table 2</i></p>	<p>The proposed project is supplying electricity generated to the national/regional grid, hence project activity falls under point No. 1 of the Project Category as mentioned in the Table 2 of AMS ID Version 17<sup>/29/</sup> and the same has been confirmed by PPA signed between Malaxmi Wind power and GESCOM<sup>/37/</sup>.</p>
<p>3. <i>This methodology is applicable to</i></p>	<p>The project activity is installation of one number of new</p>

<p>project activities that (a) install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).</p>	<p>WTG with capacity 2100 kW<sup>/01/</sup> which is being operated as a new power plant at a location where there was no existing power plant the same has been confirmed by the purchase orders of WEG<sup>/18/20/</sup> and during on site visit<sup>/36/</sup>.</p>
<p>4. Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology:</p> <ul style="list-style-type: none"> <li>• The project activity is implemented in an existing reservoir with no change in the volume of reservoir;</li> <li>• The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/m<sup>2</sup>;</li> <li>• The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m<sup>2</sup>.</li> </ul>	<p>This is not applicable to the project activity as the project activity is not a hydro power plant because the proposed project activity is wind based power generation project<sup>/18/20/</sup>.</p>
<p>5. If the new unit has both renewable and non-renewable components (e.g., a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.</p>	<p>The proposed project activity does not involve the capacity addition or co-firing, the same has been confirmed by the purchase orders<sup>/18/20/</sup>, and commissioning certificates<sup>/14/</sup>. The same also been confirmed during site visit<sup>/36/</sup> that the new unit is new unit is generating electricity from renewable source only.</p>
<p>6. Combined heat and power (co-generation) systems are not eligible under this category.</p>	<p>The proposed project activity is a wind based power generation project<sup>/18/20/</sup>. The same also been confirmed during site visit<sup>/36/</sup>. That the project activity is not a combined heat and power (cogeneration) system</p>
<p>7. In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.</p>	<p>The project activity is a new project the same has been confirmed during onsite assessment<sup>/14/20/</sup> and review of purchase orders<sup>/18/20/</sup>.</p>
<p>8. In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement unit shall not exceed the limit of 15 MW.</p>	<p>The project activity is a green field wind power project with generating capacity of the project is 2.1 MW and hence does not exceed the threshold limit of 15MW. same has been confirmed by the purchase orders<sup>/18/20/</sup> and commissioning certificates<sup>/14/</sup>. The same also been confirmed during site visit<sup>/36/</sup>.</p>

#### Findings:



The CAR#03 was raised and successfully closed, please refer Annex-2 for details, where same has been discussed completely.

**Opinion:**

The validation team confirms that;

- a) The proposed CDM project activity falls under the applicability criteria of AMS I D Version 17<sup>/29/</sup> and has sufficiently provided justification with regard to each applicability condition.
- b) The greenhouse gas emissions occurring within the proposed CDM project activity boundary as a result of the implementation of the proposed CDM project activity are not expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology.

**4.5.3 Project boundary**

**Discussion:**

The project activity is installation of one unit of 2.1 MW WTG which is connected to the southern grid of India<sup>/37/</sup> as confirmed from the commissioning certificate<sup>/50/</sup>, PPA<sup>/37/</sup> and observation made during the site visit. The identified project boundary includes the WTG, grid substation and the connected grid. The section B.3 of PDD describes the project boundary in a clear and transparent manner by help of graphical representation of the project boundary.

**Opinion:**

The validation team confirms that; based on the site visit and the document review the validation team confirms that the project boundary defined in the section B.3 of the PDD is in compliance with the paragraph 79 of VVM. V1.2. Since the proposed project activity is a wind based renewable energy generation therefore no other gases except CO<sub>2</sub> as recommended by the methodology has been included in the project boundary.

**4.5.4 Baseline identification**

**Discussion:**

The project activity is installation of a new grid connected renewable resource based power plant, the PP has identified the plausible baseline scenario in accordance with paragraph 10 of applied simplified baseline methodology AMS-I.D, version 17<sup>/29/</sup> as, *"the electricity delivered to the grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources"*.

For new grid-connected renewable power plant, the baseline emission factor is combined margin (CM), consisting of the combination of operating margin (OM) and building margin (BM) according to the procedures prescribed in the 'Tool to calculate the emission factor for an electricity system' version-2.2.1<sup>n/31/</sup>. The combined margin CO<sub>2</sub> emission factor has been calculated based on the version 6 database provided by Central Electricity Authority (CEA) of the Ministry of Power, Government of India<sup>/32/</sup>. A brief overview of stepwise approach has been described below:-

**Step 1 – Identification of relevant electricity system:**

As per CEA, the Indian power system is divided into two independent regional grids, namely NEWNE & Southern. Each grid covers several States. Power generation and supply within the regional grid is managed by Regional Load Dispatch Centre (RLDC).

And since the CDM project activity is connected to the Southern regional grid it is also preferred to take the SOUTHERN regional grid as project boundary than the state boundary. It also minimizes the effect of inter state power transactions, which are dynamic and vary widely.

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

Project participants may choose between the following two options to calculate the operating margin and build margin emission factor:

**Option I:** Only grid power plants are included in the calculation.

**Option II:** Both grid power plants and off-grid power plants are included in the calculation.

Only Grid power plants are included in the Combined Margin calculation as published by Central Electricity Authority in "The Central Electricity Authority (CEA): Baseline Carbon Dioxide Emission database version 6 dated March 2011<sup>/32/n</sup>", hence the **Option I** has been considered for the project activity.

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

The calculation of the operating margin emission factor ( $EF_{grid,OM,y}$ ) is based on one of the following methods:

- (a) Simple OM,
- (b), Simple adjusted OM,
- (c) Dispatch Data Analysis, or
- (d) Average OM.

The two variants “Simple adjusted operating margin” and “Dispatch data analysis operating margin” cannot currently be applied in India due to lack of necessary data.

In India, hydro and nuclear stations qualify as low-cost / must-run sources and are excluded. The operating margin, therefore, can be calculated by dividing the region's total CO<sub>2</sub> emissions by the net generation of all thermal stations. Thus, Simple OM has been chosen.

The Central Electricity Authority (CEA): Baseline Carbon Dioxide Emission database version 6.0 dated 6<sup>th</sup> March 2011<sup>/32/</sup> data have been publicised and the simple OM has been referred for the OM calculation.

The Operating Margin is calculated considering of the generation weighted average of Operating Margin date for the Southern Grid as published by CEA during the years 2007-2008, 2008-2009 and 2009-2010. The weighted average value for the Southern Grid is 0.9670 tCO<sub>2</sub>/MWh. (Source: Central Electricity Authority (CEA) Baseline Carbon Dioxide Emission database version 6.0 dated March 2011<sup>/32/</sup>. ([www.cea.nic.in](http://www.cea.nic.in)))

### Step 4. Calculate the operating margin emission factor according to the selected method (OM)

The Operating Margin is calculated considering of the generation weighted average of Operating Margin date for the Southern Grid as published by CEA during the years 2007-2008, 2008-2009 and 2009-2010. The weighted average value for the Southern Grid is 0.9670 tCO<sub>2</sub>/MWh. (Source: Central Electricity Authority (CEA) Baseline Carbon Dioxide Emission database version 6.0 dated March 2011<sup>/32/</sup>. ([www.cea.nic.in](http://www.cea.nic.in)))

### Step 5. Calculate the build margin emission factor

The build margin considered is for the year 2009-2010 for the Southern grid and the value is 0.7634 tCO<sub>2</sub>/MWh. The data for the build margin and the operating margin is taken from the Central Electricity Authority Baseline Carbon Dioxide Emission database version 6.0 dated March 2011.

### Step 6. Calculate the combined margin emission factor

The combined margin emission factor is calculated as follows:

Input values and data sources for the calculation of  $EF_{CO_2}$  ( $EF_{grid,CM,y}$ ) have been described in table below:

Parameter	Description	Unit	Source
$EF_{grid,CM,y} = EF_{grid,OM,y} \times W_{OM} + EF_{grid,BM,y} \times W_{BM}$			“Tool to calculate the emission factor for an electricity system” version 02.2.1, equation 14
$EF_{grid,CM,y} = EF_{CO_2,grid,y}$	Combined margin CO <sub>2</sub> emission factor in year y. This equals to $EF_{CO_2}$	tCO <sub>2</sub> /MWh	Calculated
$EF_{grid,OM,y}$	Simple operating margin CO <sub>2</sub> emission factor in year y.	tCO <sub>2</sub> /MWh	Calculated
$EF_{grid,BM,y}$	Build margin CO <sub>2</sub> emission factor in year y	tCO <sub>2</sub> /MWh	Calculated
$W_{OM}$	Weighting of operating margin emission factor	0.75	“Tool to calculate the emission factor for an electricity system” version 02.2.1 <sup>/31/</sup>
$W_{BM}$	Weighting of build margin emission factor	0.25	“Tool to calculate the emission factor for an electricity system” version 02.2.1 <sup>/31/</sup>



As per “Tool to calculate the emission factor for an electricity system” version 02.2.1,

“The following default values should be used for  $w_{OM}$  and  $w_{BM}$ :

Wind and solar power generation project activities:  $w_{OM} = 0.75$  and  $w_{BM} = 0.25$  (owing to their intermittent and non-dispatchable nature) for the first crediting period and for subsequent crediting periods”

Hence the values used are  $w_{OM} = 0.75$  and  $w_{BM} = 0.25$

$EF_{grid,CM,y} = EF_{CO2,grid,y} = \text{Weighted Average OM \& BM} = 0.91616 \text{ tCO}_2\text{e/MWh}$ .

The traceability and applicability of the value have been cross-checked from the CER Spreadsheet<sup>/03/04/</sup>. Hence it can be concluded from the spreadsheet that the CM emission factor value has been calculated based on the OM and BM data provided by the Central Electricity Authority (CEA) of the Ministry of Power, Government of India<sup>/32/</sup>, considering weights for OM and BM as prescribed in “Tool to calculate the emission factor for an electricity system”<sup>/31/</sup>. CEA has published a database of carbon dioxide emission factors for the power sector in India based on detailed authentic information obtained from all operating power stations in the country. This CO<sub>2</sub> baseline database provides information about the OM and BM factors of all the regional electricity grids in India.

The validation team also concluded that all the assumption and data used by the project participants are listed in the PDD along supporting documents. All documentation relevant for establishing the baseline scenario have been correctly quoted and interpreted in the PDD. Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable. Relevant national and/or sectoral policies and circumstances are considered and listed section B.5 of webhosted PDD<sup>/01/</sup> and final PDD\_v7.1<sup>/02/</sup>, and since National and/or sectoral policies or regulations under (E-, policy) have been implemented since the adoption by the COP of the CDM M&P (decision 17/CP.7, 11 November 2001) therefore it has not been taken into account in developing a baseline scenario and besides this (E+, policy) have been implemented before adoption of the Kyoto Protocol by the COP (decision 1/CP.3, 11December 1997). Thus, the same have been taken into account when developing a baseline scenario and is also in accordance with EB 22, Annex 3<sup>/47/</sup>

#### Findings:

CL#9(2) and CAR#04 was raised and closed during the desk review, please refer Annex-2 for details. , where same has been discussed completely

#### Opinion:

The validation team confirms:

- All the assumptions and data used by the project participants are listed in the PDD, including their references and sources (section B.4, B.6.1 and Annex 3);
- All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD; (section B.4, B.5, B.6.1 and Annex 3).
- Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable; (section B.4, B.6.1 and Annex 3).
- Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD; (No contravening regulations were found existing which could impair the selection of identified baseline scenario).
- 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. (Section B.5).

#### 4.5.5 Algorithms and/or formulae used to determine emission reductions

##### Discussion:

The PDD has described the application of approved simplified baseline methodology and tool to calculate emission factor of an electricity system, the baseline emissions, project emission, leakage are demonstrated in Section B.6.1 of PDD<sup>/1/2/</sup> and are calculated using following equations:

##### Baseline Emission:

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

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

Where:

$BE_y$  Baseline Emissions in year y (t CO<sub>2</sub>)

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

$EF_{CO_2, grid, y}$  CO<sub>2</sub> emission factor of the grid in year y (t CO<sub>2</sub>/MWh) =  $EF_{grid, CM, y}$

### Emission Factor:

The PP has followed stepwise approach for calculating the simple OM and BM in line with “Tool to calculate the emission factor for an electricity system” Version 02.2.1<sup>/31/</sup> are detailed in the section B.6.1 of the PDD with supporting spreadsheets. As the data for calculation of grid emission factor value was published (in web), at the time of hosting this PDD contains most of the recent data (at the time PDD submission for validation) required for calculating  $EF_{grid, CM, y}$ .

**Table 6**

Details	2007-08	2008-09	2009-10	Mean of Validation
Southern Grid Net Generation in OM (GWh)	114,634	121,471	134,717	Net Generation in Operating Margin (GWh); CEA CO <sub>2</sub> database version 6 <sup>/32/</sup> .
Net electricity import from NEWNE (GWh)	0	6,326	1,057	Net Imports (GWh) - Net exporting grids are set to zero); CEA CO <sub>2</sub> database version 6 <sup>/32/</sup> .
Net generation incl imports (GWh)	114,634	127,797	135,774	Calculated <sup>/04/</sup> .
Electricity import from other countries (GWh)	0	0	0	CEA CO <sub>2</sub> database version 6 <sup>/32/</sup> .
Southern Grid OM (tCO <sub>2</sub> /MWh)	0.99	0.97	0.94	Simple Operating Margin (tCO <sub>2</sub> /MWh) (incl. Imports); CEA CO <sub>2</sub> database version 6 <sup>/32/</sup> .
Weighted Generation Operating Margin	0.96708			Calculated as Sum:Product of Net generation incl imports (GWh) & Southern Grid OM (tCO <sub>2</sub> /MWh) <sup>/04/</sup> .
Build Margin	0.76340			Build Margin (tCO <sub>2</sub> /MWh) (not adjusted for imports); CEA CO <sub>2</sub> database version 6 <sup>/32/</sup> .
wOM	0.75			EB 63, Annex 19;6 <sup>/31/</sup>
wBM	0.25			EB 63, Annex 19;6 <sup>/31/</sup>
Combined Margin	0.91616			Calculated <sup>/04/</sup> .

The weights for OM and BM have been taken as 75:25. The combined margin emission coefficients for the north east west and north-eastern regional grid of India have been calculated and are fixed *ex ante* for the entire renewal crediting period<sup>/32/</sup>.

### Emission Reduction:

In accordance with paragraph 23 of methodology AMS I.D<sup>/29/</sup> Version 17The emission reduction of the project activity has been calculated as below

$$\text{Emissions Reductions} = \text{Baseline Emissions (BE}_y\text{)} - \text{Project Emissions (PE}_y\text{)} - \text{Leakage (L}_y\text{)}$$

$$ER_y = BE_y - PE_y - LE_y$$

**Table 7**

Parameters	Values	Mean of Validation
Annual Electricity Generation (MWh)	Install Capacity x PLF =2.1 MW*20.8%*8760 =3826 MWh.	Calculated <sup>/04/</sup> .
Combined Margin	0.91616	Calculated <sup>/04/</sup> .
Baseline Emissions (BE <sub>y</sub> )	Combined Margin x Annual Electricity Generation (MWh) =3505 tCO <sub>2</sub> /annum	Calculated <sup>/04/</sup> .
Project Emissions (PE <sub>y</sub> )	0	As per AMS I.D <sup>/29/</sup> Version 17
Leakage (L <sub>y</sub> )	0	As per AMS I.D <sup>/29/</sup> Version 17
Emissions Reductions(tCO <sub>2</sub> e)	3505 tCO <sub>2</sub> /annum	Calculated <sup>/04/</sup> .

\*PLF is validated from the third party report<sup>/26/</sup> in line to the para 3 (b) of EB 48, Annex 11.

Where:

ER<sub>y</sub> Emission reductions in year y (t CO<sub>2</sub>/y)

BE<sub>y</sub> Baseline Emissions in year y (t CO<sub>2</sub>/y)

PE<sub>y</sub> Project emissions in year y (t CO<sub>2</sub>/y)

LE<sub>y</sub> Leakage emissions in year y (t CO<sub>2</sub>/y)

Hence,

$$ER_y = BE_y$$

Based on the calculations and results presented in the sections above the implementation of the project activity will result in an average *ex-ante* estimation of emission reduction conservatively calculated to be 3,505 tCO<sub>2e</sub> per year for the selected crediting period of 10years.

#### Findings:

CAR#05 was raised and closed during the review, please refer Annex-2 for details, where same has been discussed completely

#### Opinion:

The validation team confirms:

- All assumptions and data used by the project participants are listed in the PDD, including their references and sources;
- All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD;
- All values used in the PDD are considered reasonable in the context of the proposed CDM project activity;
- The baseline methodology 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 and corresponding spreadsheets.

#### 4.6 Additionality

The proposed CDM project activity has an installed capacity of 2.1 MW and hence is a small scale project activity. Therefore, in accordance with §28 of the simplified modalities and procedures for small-scale CDM project activities, the additionality of the project activity has been demonstrated using *Guidelines on the demonstration of additionality of small-scale project activities*<sup>/28/</sup> and Guidance given vide Annex 05 of EB

62<sup>/48/</sup>. As all requirements specified vide §28 of the simplified modalities and procedures are complied with by the project activity, this approach has been assessed to be appropriate for the additionality assessment for this project activity.

Project developer has chosen investment barrier and to demonstrate the investment barrier has selected benchmark analysis and Project IRR as financial indicator. Since project IRR is one of the financial indicators frequently used by investors and banks and according to the guidance 12 of EB 62 Annex 05<sup>/48/</sup> recommends the use of project IRR as one of the financial indicators, project IRR is considered appropriate for the project type and in context to decision making<sup>/09/</sup>. Since in this instant case, and as explained in subsequent section, baseline is outside the direct control of the project developer (grid connected power) and hence, the choice of the project developer is to restricted to 'invest or not to invest', the benchmark approach is most suited as per Guidance 19 of Annex 05 of EB 62.

#### 4.6.1 Prior consideration of the clean development mechanism

##### Discussion:

The project involves installation of 2.1 MW wind turbines at the Karnataka state of India. The final PDD\_v7.1<sup>/02/</sup> has stated that the start date of the project activity as 03/01/2011 which is the date on which the Purchase order<sup>/20(a)/</sup>, for the supply of wind turbines, was placed with M/s Suzlon Energy. However the proposal of two wind turbines [SND-101 & SND-103] of 2.1 MW each, with commissioning on or before 31 March 2011 was submitted by the technology supplier to PP and since wind turbine SND 103 could not be commissioned before the above mentioned date, therefore as per "Delivery ;Clause 3 of PO subject:- Purchase Order for supply of 2 nos. of 2100 kW Suzlon Wind Turbine Generator(s) at Sindgiri, Bellary Dist, Karnataka for locations SND-101 & SND-103; dated 24/02/2011<sup>/20(a)/</sup>", this order was cancelled by the PP and validated by the assessment team vide the cancelation letter<sup>/20(c)/</sup>.

The details of events regarding the capacity reduction of projects activity from decision making to actual implementation is described in below table:

**Table 8**

DATE	Events	Validation Remark
09/12/2010	Quotation for 2*2.1 MW, WTGs project in Karnataka.	Details of WTG commissioning along with technical and cost specification has been cross checked from the Offer letter <sup>/18/</sup> submitted by the technology supplier to PP.
16/12/2010	Investment decision by the Management to implement the project activity dated 16/12/2010	Details of the investment was cross checked from Board Note of Ms/ Malaxmi Wind Power <sup>/09/</sup>
03/01/2011	P.O. to Suzlon for the supply of two WTG at location SND101 & SND-103	Purchase Orders <sup>/20/</sup> released to Suzlon by PP. Validated as a start date of the project activity with the clause of commissioning on or before 31/03/2011.
31/03/2011	Commissioning of 01 WTG i.e. SND 101	Commissioning Certificate issued from KPTCL <sup>/14/</sup>
04/06/2011	Cancellation of the P.O. for one WTG of 2.1 MW at location SND 103.	Copy of the cancellation Orders <sup>/20 (d)/</sup> as the technology supplier was failed to install and commission the one of the WTG on or before 31/03/2011

The PDD<sup>/01/</sup> was web-hosted for public comments on 25/10/2011<sup>/42(e)/</sup>, which is after the start date of the project activity. Since the start date of the project activity was after 02/08/2008, which has been consistently indicated in web-hosted PDD<sup>/01/</sup> and final PDD\_v7.1<sup>/02/</sup>. Hence the project developer had informed both UNFCCC and DNA on 12/05/2011 which is as per the para 2 & 3 of EB 62, Annex 13 and is also in compliance with the and also with para 100, VVM 1.2<sup>/25/</sup>, moreover during the validation desk review, validation team observed that the capacity of the project activity mentioned in the intimation letter was 4.2

MW which is not consistent with the actual project installed capacity of 2.1 MW, justification for decrease in the capacity (from 4.2 to 2.1 MW) has been mentioned in the above section of validation report.

Besides, validation team also checked the UNFCCC website<sup>/42(d)/</sup> (as required vide paragraph 101 of VVM 1.2<sup>/25/</sup>) and satisfied itself that the project developer had informed UNFCCC within the stipulated 6 month time period.

#### **Findings:**

CAR#08(5) was raised and closed during the review, please refer Annex-2 for details, where same has been discussed completely

#### **Opinion:**

Therefore, as per Annex 13 of EB 62 continuing and real actions is deemed to have been taken to secure CDM status for the project activity in parallel with the implementation of the project activity.

The validation team confirms the following:-

- a) The project activity start date provided in the PDD is in accordance with the CDM glossary of terms;
- b) The evidence for prior consideration of the CDM assessed are referenced above;
- c) The proposed CDM project activity complies with the requirements of the latest version of the Guidance on prior consideration of CDM.

#### **4.6.2 Identification of alternatives**

##### **Discussion:**

As per EB 68, Annex 27<sup>/28/</sup>, EB50, Annex 13<sup>/52/</sup> and EB66\_Anx23<sup>/53/</sup>, Project developer have got two alternatives, i.e.

- a) Proposed project activity is undertaken but not as CDM activity; and
- b) No project activity, in which case equivalent amount of electricity would be generated by grid electricity system through its currently operating power plants and by new capacity addition (which are mostly thermal), i.e., *status quo*.

Both the alternatives are 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;

Besides this, the Electricity Act 2003 does not restrict or empower any authority to restrict the fuel choice for power generation;

Moreover the applicable environmental regulations do not restrict the use of wind energy; and hence there is no legal requirement on the choice of a particular technology.

However, of the two alternatives identified, alternative (a) cannot be considered realistic as further analysis in the following paragraph reveals that it faces barriers. Hence, alternative (b) alone could be justified as realistic, credible and plausible alternative to the PP. However, this alternative would result in higher GHG emissions and is also out of direct control of PP as it is being maintained by the a subsidiary company of government of India.

Moreover, this being a wind energy project is based on the paragraph 10 of methodology AMS I-D Ver. 17<sup>/29/</sup>, "If the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the electricity delivered to the grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources".

Hence as per the paragraph 105 of VVM 1.2<sup>/25/</sup> states that webhosted PDD<sup>/01/</sup> and final PDD\_v7.1<sup>/02/</sup> has identified the credible alternatives to the project activity which is required for determination of the most realistic baseline scenario, unless the approved methodology that has been selected by the proposed CDM project activity. Therefore the prescribed the baseline scenario is accurate and no further analysis is required.

#### **Opinion:**

Since the approved methodology AMS I.D ver.17<sup>/25/</sup> used by the project activity prescribes the baseline scenario, no further analysis of alternatives is required for the project activity.

Validation Team, therefore, concludes that the webhosted PDD<sup>/01/</sup> along with the final PDD\_v7.1<sup>/02/</sup> and the validation report confirms that the listed alternatives to be credible and complete which is in line with paragraph 107 of VVM 1.2<sup>/25/</sup>.

### 4.6.3 Investment analysis

#### Discussion:

PDD demonstrates that the project will not be financially feasible, without the revenue from the sale of certified emission reductions (CERs). The claim of the project developer that the project scenario is not economically feasible without benefits from CER sales has been assessed by the Validation Team through the following steps:

#### a) Appropriateness of investment analysis, financial indicator and benchmark:

Project developer has not restricted the investment analysis for proposed fixed crediting period but has demonstrated for the entire technical lifetime of 20 years of Wind turbine<sup>/17/</sup>, which is in line with guidance 3 of Annex 05 of EB 62<sup>/48/</sup>. Moreover PP has demonstrated that the financial returns of the proposed CDM project activity would be insufficient to justify the required investment (Paragraph 109 (c) of VVM 1.2<sup>/25/</sup>). For demonstrating the financial unattractiveness of the project activity, project developer has chosen investment barrier using benchmark analysis. Since the baseline is outside the direct control of the project developer (grid connected power) and hence, the choice of the project developer is restricted to “invest or not to invest”, the benchmark approach is most suited as per the latest version of Guidance 19 of Annex 05 of EB 62<sup>/48/</sup>.

The project developer has chosen project IRR to demonstrate the additionality of the project which is in line to the guidance 12 of Annex 05, EB 62<sup>/48/</sup> which illustrates *that the Local commercial lending rates or weighted average costs of capital (WACC) are appropriate benchmarks for a project IRR.*

The purpose of the project IRR calculation is to determine the viability of the project to service debt. And as 70% of the project cost is serviced by Debt and remaining 30% by Equity, hence Project IRR has been considered as an appropriate financial indicator to assess the financial viability of the project activity.

Both in webhosted PDD<sup>/01/</sup> and final PDD\_v7.1<sup>/02/</sup>, PP had chosen the benchmark as the *Benchmark Prime Lending Rate (PLR)* as prescribed by the State Bank of India which is a nationalized bank. Hence at the time of investment decision, PP has considered the BPLR (also known as State Bank Advance Rate) as per the State Bank of India that was 12.50%<sup>/55(a)/</sup> at the time of decision making. Hence the benchmark of 12.50% chosen by the PP for the assessment of the financial viability of the project activity can be considered as appropriate type of financial indicator.

The authenticity of the benchmark considered have been cross checked from the web link<sup>/55(a)/</sup> and was found to be correct.

#### b) Input Parameters:

The validation team has validated the input parameters used in investment analysis of the project activity i.e. Project IRR, as listed in the webhosted PDD<sup>/01/</sup> uploaded for global stakeholder consultation process along with the final PDD\_v7.1<sup>/02/</sup> along with input values used in spread sheet<sup>/03//04//05//06/</sup>. The detailed assessment and means of validation of input parameters used are presented below:-

**Table 9**

“Wind Power Project in Karnataka India”			
Parameter	Value Used	Source of Value	Validation remarks
Number of Machines conceptualized initially (At the time of decision making)	2*2.1 MW	Offer letter received from M/s Suzlon Energy limited dated 09/12/2010 <sup>/18/</sup> .	Offer letter from the technology supplier was validated by the assessment team. The purchase orders were also cross checked to verify this number, dated 09/12/2010.
Number of WTGs installed implementation (Actual implementation)	1*2.1 MW	Final cancellation letter received from M/s Suzlon Energy limited 1x2.1MW, WEG(S-88); dated 01/07/2011 <sup>/20 (d)/</sup> . Commissioning Certificate/14/	The cancellation letter of PO for one of the WTG/20 (c)/ was validated and the same was found in line to the clause of offer letter as the technology supplier was failed to commission and install one of the WTGs on or before 31/03/2011. The validation team has further cross checked the number of machine from commissioning certificate



“Wind Power Project in Karnataka India”			
Parameter	Value Used	Source of Value	Validation remarks
			issued by KPTCL on 31/03/2011 <sup>/14/</sup> and land lease agreements <sup>/10/</sup> The same was also confirmed during site visit date 13/12/2011 <sup>/36/</sup> .
Date of commissioning	Location: SND-101: on 31/03/2011	Commissioning Certificate/14/	The team has validated the date of commissioning from the commissioning certificates <sup>/14/</sup> . And the same date of commissioning has been indicated in the webhosted PDD <sup>/01/</sup> and final PDD_v7.1 <sup>/02/</sup> . The authenticity of commissioning certificate is being checked from officials of KPTCL during site visit.
Plant Load Factor	20.80%	The project proponent has used the values from an independent third party report for plant load factor assessment report <sup>/26/</sup> by True Wind International Certification India.	The value used have been verified from the third party PLF assessment report conducted by True Wind International Certification India <sup>/26/</sup> and found consistent. Hence it can be concluded that the data used for the assessment of PLF is based on site conditions and based on the generation potential of wind at the site Konchigere Village, Bellary District, Karnataka, India. This is also in accordance with paragraph 3 (b) of Annex 11, EB 48 <sup>/57/</sup> . The validation team has raised CL#10(XII) and has accepted the justification. The validation team has also compared the PLF used by recently registered CDM project from Karnataka State of India, the values range from 23.18 % to 26.75 % (refer table below). And found that the value of PLF 20.8%, was considered for the investment analysis was considered from the 3 <sup>rd</sup> party PLF report, which is lower. However validation team considers that the PLF considered for project activity is site specific, hence it will vary from site to site. Hence PLF on Proposed project activity is different from the PLF of registered CDM project, which are in Karnataka State of India, which were considered in the recently. Besides the PLF is considered as a sensitivity parameter which has been explained in section below.
Tariff rate	INR 3.70	The PP has used Tariff value as decided by commission for the wind power project as indicated on Pg 31 of the KERC order dated	The tariff rate has been verified from the KERC order dated 11/12/2009 <sup>/21/49/</sup> , which was available to PP at the time of decision making and is found to be consistent. Moreover same was cross checked from the Power Purchase Agreement (PPA) dated

“Wind Power Project in Karnataka India”			
Parameter	Value Used	Source of Value	Validation remarks
		11/12/2009.	<p>15/3/2011<sup>/37/</sup> signed between M/s Malaxmi Wind Power (PP) and GESCOM. The details pertaining to apportioning and the tariff agreed between the PP and state utility company ie..GESCOM has been mentioned in Pg 11 of the agreement which stipulates INR 3.70 per kWh, which is found consistent with the values used has been used for the investment analysis and IRR<sup>/05/</sup> has been determined on the same tariff value for the entire technical lifetime of the WTG<sup>/17/</sup>.</p> <p>Moreover, as per Clause 9.1 of Article 9 under <u>Term, Termination and Default on Pg 15</u> the PPA has been signed between PP and utility proprietorship firm is for 20 years, hence, the probability of revision of tariff to project activity in this period will be unlikely.</p>
O&M cost	2.10 Million INR	Offer letter received from M/s Suzlon Energy limited dated 09/12/2010 <sup>/18/</sup> .	<p>The value used have been validated from Pg 2 under Clause (vi) of the offer letter<sup>18(a)/</sup> and found consistent.</p> <p>However the validation team has further cross checked the O&amp;M cost of individual machine from purchase order placed to M/s Suzlon<sup>/20/</sup> Energy limited and it was found that O &amp;M charges had negotiated to 2.00 Million INR per WTG with effect from 3<sup>rd</sup> year was found lower than O&amp;M cost of the offer letter, however, the O&amp;M cost is a very small part of the total project cost (1.87%) and the impact of actual O&amp;M cost is within the sensitivity range.</p> <p>The validation team has also compared the O&amp;M cost used by registered CDM project from Karnataka State of India, the values range from 1.3% to 3.3% (refer table below). The value used for investment analysis 1.87% is within range. Hence the validation team considers the value used is reasonable and appropriate.</p>
O & M free for number of years	2	Offer letter received from M/s Suzlon Energy limited dated 09/12/2010 <sup>/18/</sup> .	<p>The value used have been verified from offer letter<sup>/18/</sup> found consistent.</p> <p>The validation team has further cross checked the free number of years for O&amp;M of individual machine from purchase order<sup>/20/</sup> placed to M/s Suzlon Energy limited; both as per the PO and Offer letter the O&amp;M is free number of year in found 2 years, therefore the same has been accepted by assessment team.</p>



“Wind Power Project in Karnataka India”			
Parameter	Value Used	Source of Value	Validation remarks
Escalation in the O&M expenses	5%	Offer letter received from M/s Suzlon Energy limited dated 09/12/2010 <sup>/18/</sup> .	<p>The value used have been verified from Pg 2 under Clause (vi) of the offer letter<sup>/18/</sup> and was found consistent.</p> <p>The validation team has cross checked the values from inflation rate in host country from the official website of the Reserve Bank of India<sup>/58(g)/</sup>, which forecasted that the inflation for the next 10 years as 5.7% therefore the 5% escalation on O&amp;M cost deems appropriate and realistic and the same has been accepted by assessment team.</p>
Total project cost (in million INR)	115.81	<p>Offer letter received from M/s Suzlon Energy limited dated 09/12/2010<sup>/18/</sup>.</p> <p>Upfront Fee considered as 1% based on the rates from Leading Financial Institution (oriental Bank of Finance) in India (page No. 12, Point Number 3.2.1).</p>	<p>The value used have been verified from offer letter<sup>/18/</sup> and loan processing fee was validated from the document of oriental Bank of Finance and found consistent.</p> <p>The validation team has cross checked the values from the purchase orders<sup>/20(a)/(b)/</sup>, and found that the total project cost is summation of WTG cost, Land cost and Loan processing charge and therefore the actual project cost<sup>/27.1/27.2/27.3/</sup> as per final purchase orders<sup>/20(a)/</sup> placed was found to be 5.97%<sup>/6(b)/</sup> less than the project cost mentioned in Offer letter<sup>/18/</sup> which has been used for investment analysis and within the sensitivity range of <math>\pm 10\%</math>. The loan processing charges were also crosschecked from the actual loan sanctioned to the project activity, therefore assessment team consider the project cost considered by PP is appropriate.</p> <p>Further the validation team has compared the total project cost of recently registered CDM projects in state of Karnataka, per MW project cost ranges from 59 million INR to 66.67 million INR,</p> <p>Though the project cost considered for the investment analysis of the proposed project activity is approximately 55.14 million INR per MW which is lower due to variation in capacity and cost of WTG supplied by the various technology Manufacturer's. Hence the validation team considers that project cost is not only based on type of WEG installed but also on the prevailing market condition that where available to the various project developers. Because with reference to table below the project cost of WEG has varied ir-respective of capacity that has been supplied by the same technology supplier's (1.5MW;S-82;UN-4997, UN-4739, UN-4575</p>

“Wind Power Project in Karnataka India”			
Parameter	Value Used	Source of Value	Validation remarks
			<p>&amp; 0.8MW;E-53;UN-4956), have been found higher than the 2.1MW;S-88 WEG installed by the PP.</p> <p>Hence validation team considers the value used as reasonable and appropriate.</p>
Debt: Equity	70:30	KERC Tariff order of (70:30)	<p>The debt: equity ratio has been sourced from the KERC tariff order<sup>/21a/,/21c/</sup> available to PP at the time of decision making, the assessment team has further crosschecked the details from the Loan letters issued to the PP by the Financing bank (Axis Bank)<sup>/19/</sup> and found the actual debt: equity ratio as ~65:34. The actual debt equity ratio, interest rate and loan repayment put together doesn't impact the additionality of project. Therefore the same has been accepted to assessment team.</p>
Interest Rate	12.50%	As considered from BPLR	<p>The validation team has verified the interest rate applicable to the project activity from Reuters website<sup>/59(a)/</sup>, the value used is consistent. The actual interest was also validated by the assessment team and found as variable as “Base Rate + 3.75%”, which was 12.5% at the time of loan sanction.</p> <p>The interest rate was further crosschecked by the assessment team with the statistics published in the report, “Financial Intermediation and Markets” (vide table 5.2<sup>/55(c)/</sup>, this report reveals the BPLR of nationalized banks at the time of decision making (Dec. 2010) was 12%-14%, private banks 13%-18% and the KREC Tariff order<sup>/21b/</sup>. Therefore assessment team considers the interest rate considered by PP is appropriate and within the range prevailing at that time.</p>
Loan Repayment period	10 years	KERC Tariff Order ; 11/12/2009 <sup>/21/</sup>	<p>The validation team has verified the moratorium period of loan from the commission decision, mentioned under clause 4, Depreciation of KERC Tariff order dated 11/12/2009<sup>/21/</sup> Besides this, team also reviewed the Loan Sanction letter<sup>/19(a)/</sup> and revised Loan document<sup>/19(c)/</sup> which stipulates that PP has to start the loan repayment with 48 un-equal installment ie.12 years from the quarter ending on 30/9/2012. Therefore on considering the repayment of principal amount as 12 years. Therefore assessment team considers the loan repayment considered by PP is conservative and therefore accepted</p>

“Wind Power Project in Karnataka India”			
Parameter	Value Used	Source of Value	Validation remarks
			to assessment team.
Moratorium period	0 months	KERC Order ; 11/12/2009 <sup>/21/</sup>	The validation team has cross checked the value of Moratorium period from the KERC tariff order <sup>/21/</sup> and found it consistent with it. However the initial Loan sanctions letter <sup>/19(a)/</sup> stated the moratorium period of 14 months, therefore assessment team considers the moratorium period considered by PP is conservative and therefore accepted.
Book Depreciation up to (% of asset value)	100%	Company Act /59/	The validation team has verified the depreciation rate applicable to the project activity from official website <sup>/59 (h)/</sup> , the value used is consistent.
Book Depreciation per annum (Straight Line)	5.28 %	Company Act <sup>/59/</sup>	PP has provided book depreciation at 5.28% therefore; the book depreciation adopted is in conformity with accepted accounting principles. Book depreciation is based on the rates recommended by Schedule XIV of Companies Act. <a href="http://www.mca.gov.in/Ministry/pdf/Companies Act 1956 13jun2011.pdf">http://www.mca.gov.in/Ministry/pdf/Companies Act 1956 13jun2011.pdf</a>  This value does not affect additionality. The value is considered correct and appropriate.
Income Tax Rate	30.00%	As per Page 02 of Income Tax rates; First Schedule of Income Tax Act 1961 as amended by Finance Act 2010	The validation team has verified the depreciation rate applicable to the project activity from official website <sup>/59(a)/</sup> , the value used is consistent. Further, the validation team was able confirm that the value used was applicable at the time of decision making and the information was available to PP <sup>/23/</sup> .
GBI	Rs 0.50 per unit of Electricity till Rs.62 Lakh/MW	As per the Generation Based Incentive (GBI) scheme announced by MNRE for Grid Interactive Wind Power Projects Commissioned after 17.12.2009 <sup>/40/</sup> .	The value has been verified from the official website <sup>/59(b)/</sup> and found consistent. Further, the validation team has check about the capped value and charges under GBI from various link <sup>/59(c)/(d)/</sup> was able confirm that the value used was applicable at the time of decision making and the information was available to PP.
Surcharge	7.50%	As per Page 09 of Income Tax rates; First Schedule of Income Tax Act 1961 as amended by Finance Act 2010	The value has been verified from the official website <sup>/59(e)/</sup> and found consistent. Further, the validation team was able confirm that the value used was applicable at the time of decision making and the information was available to PP.

“Wind Power Project in Karnataka India”			
Parameter	Value Used	Source of Value	Validation remarks
Education Cess ( Education Cess & Secondary & Higher Education Cess)	3.00%	As per Page 03,Point 11 & 12 of Income Tax rates; First Schedule of Income Tax Act 1961 as amended by Finance Act 2010	The value has been verified from the official website <sup>/59(f)/</sup> and found consistent. Further, the validation team was able confirm that the value used was applicable at the time of decision making and the information was available to PP.
Service Tax on O & M	10.00%	Income Tax Rule	The value has been verified from the official website <sup>/59(e)/</sup> and found consistent. Further, the validation team was able confirm that the value used was applicable at the time of decision making and the information was available to PP from the Service tax website of Government of India <sup>/59(g)/</sup> .
Working Capital Interest Rate	12.50%	Determine from KERC tariff order	The value has been verified from Page No. 03 of KERC Order <sup>/21(c)/</sup> and found consistent. Further, the validation team was able confirm that the value used was applicable at the time of decision making. Since KERC is the regulatory body in the state of Karnataka therefore assessment team consider the value appropriate.
Payment from ESCOM	60 days	Determine from KERC tariff order	The value has been verified from Page No. 21 of KERC Order <sup>/21(A)/</sup> and has also cross checked the value from the previous KERC tariff order of issued on 18/1/2005 <sup>/21(C)/</sup> . . And concluded that the payment of the 2 months bill corresponds to the payment from ESCOM as in the Wind Project activity this is one of the form of the bill payment. Hence it is apparent that the Commission has considered payment of ESCOM is the computation of the working capital Further, the validation team was able confirm that the value used was applicable at the time of decision making from the KERC tariff Order issued on 11/12/2009 <sup>/21(a)/</sup> .
Project Life Time (years)	20	Certificate from technology supplier	The validation team has verified the project life time certificate issued by M/s Suzlon Energy Limited <sup>/17/</sup> . The authenticity of document was checked from the Suzlon website <sup>/17/</sup> .
Insurance Cost	0.10 Million	Offer letter received from M/s Suzlon Energy limited 2.1MW WEG (S88) dated 09/12/2010 <sup>/18/</sup> .	The insurance cost is considered based on the offer letter issued from the technology supplier to PP. The validation team observed that this amount ranges from 0.08% to 0.25% of the project cost in most of the cases. Validation team observed that insurance is not a critical factor in that even if the entire insurance premium is removed, the project

“Wind Power Project in Karnataka India”			
Parameter	Value Used	Source of Value	Validation remarks
			will remain additional. Hence, the value is considered correct and appropriate.
Administrative Cost	0.50 Million INR	Copy of Management Decision <sup>9/</sup>	The administrative cost is assumed based on the board resolution and business experience of project proponent. As the PP is already in the business of wind power generation therefore this information was available to PP at the time of decision making.
Escalation on Administrative Cost	5%	Copy of Management Decision <sup>9/</sup>	The escalation on admin cost was considered based on the escalation on salaries of employees etc and sourced from the board resolution. The 5% escalation deemed to be appropriate, conservative and realistic, considering the long term forecast of ~5% by the “reserve Bank of India”.
Salvage Value	10%	International Accounting Principles.	10% salvage value represents potential profit and therefore it conforms to guidance 4 of Annex 05, EB 62. Therefore, the validation team considers the salvage value as appropriate and conservative as the assessment period is for full technical life time. Based on the local and sectoral expertise validation team is convinced that the value considered by the PP is appropriate and valid at the time of decision making.

**Table 10 : Reference: Registered CDM Projects in Karnataka (Source: UNFCCC website)**

UN Ref No.	Machine capacity (MW)	Start Date of a CDM Project Activity	Starting Date of the Crediting Period (UNFCCC HP)	Tariff (INR/kWh )	Plant Load Factor %	Per MW Cost in million INR	O&M Cost %	Land Cost (million INR)
4997	3.0	17-Dec-2007	01-Nov-2011	4.3 (For captive use)	26.75	62.53	1.73	11.4
4739	4.5	26-Feb-2009	22-Jun-2011	3.4	26.50	59	3.38	5.4
4575	6.0	30-Jul-2007	1-Jun-2011	3.4	30.44	66.67	1.7	7.2
4956	6.4	10-Jul-2010	20-Aug-2011	3.7	23.18	59.33	1.30	9.52

### Assessment and Cross checking of parameters:

The assessment involved checking of the input data extracted from various Quotation, Purchase orders and other published Government and Non-Government documents. The validation team thoroughly reviewed the arithmetical accuracy along with the correctness of the accounting principle, published Government documents and other registered projects and ensured that right input with respect to project capacity and location has been taken in the project cost and other cash inflow and outflow projections. Thus, the validation has taken into consideration the guidance given by EB vide paragraph 111 of the VVM, version 1.2<sup>/25/</sup>.

The principle adopted conforms to the accepted accounting and taxation principles. Based on the above, the project IRR works out to 7.97% as mentioned in final PDD\_v7.1<sup>/02/</sup>.

### Sensitivity analysis:

The Guidance on Assessment of Investment Analysis requires the robustness of the conclusion arrived at to be proved through a sensitivity analysis by varying the critical assumptions to a reasonable variation. The project developer has identified generation, project cost, O&M cost & tariff as critical assumptions. Guidance 20 of Annex 5 of EB 62 states that 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.

*The sensitivity analysis for a standard departure in key input parameters is presented below, since the project was initially conceptualized with the installation of 02 WTGs of the capacity 4.2 MW as stated in the above sections, the sensitivity was carried out by PP based on both scenarios i.e. at the time of decision making and actual implementation.*

The sensitivity analysis for a standard departure in key input parameters is presented below for both the cases;

**Table 11 (a): Sensitivity analysis based on the actual implementation (2.1 MW Capacity)**

Parameters	Variation		
	-10%	0%	10%
PLF	6.48%	7.97%	9.66%
Project Cost	9.48%	7.97%	6.91%
O&M Expenses	8.33%	7.97%	7.63%
Tariff	6.50%	7.97%	9.64%
Benchmark	12.50%		

**Table 11 (b): Sensitivity analysis based on the proposed implementation (4.2 MW Capacity at the time of decision making)**

Parameters	Variation		
	-10%	0%	10%
PLF	6.76%	8.28%	9.72%
Project Cost	9.76%	8.28%	6.90%
O&M Expenses	8.45%	8.28%	8.12%
Tariff	6.76%	8.28%	9.72%
Benchmark	12.50%		

The benchmark is treated as the reference at which the investment project is considered to be financially attractive. In all the cases, the IRR is lower than the benchmark, which means the project cannot be considered to be financially attractive.

As presented in table above and in accordance with para 21 of EB62, Annex 5<sup>/48/</sup> the validation team had also cross-checked the outcome of sensitivity analysis from the Spreadsheet<sup>/05/06</sup> on identified parameter and the possible condition in which project IRR could breach the benchmark has been briefly discussed below:

- ✓ **PLF:-** MWP has considered PLF of 20.8% which is based on 3<sup>rd</sup> party PLF study report<sup>/26/</sup> which is lower than PLF of 26.5% given by the KEREC Tariff order dated 11/12/2009<sup>/21/</sup>, but since tariff order

gives a generic PLF and PLF considered in based on actual wind assessment at the site, done independently by the 3<sup>rd</sup> party which is also in accordance with paragraph 3 (b) of Annex 11, EB 48<sup>/57/</sup>. Besides validation team has done the sensitivity<sup>/05/</sup> at 26.5% PLF given by KERC tariff order and concluded that project is still additional as it is not breaching the benchmark<sup>/58/</sup>. Therefore validation team concluded only condition in which project IRR will breach the benchmark is when PLF is 28%, which in context to the current generation scenario is an unlikely condition.

- **Project cost:** - Since purchase orders<sup>/20(a)/(b)/</sup> have already been placed, WTG has been commissioned<sup>/13/14/</sup>, the payment<sup>/27.1/</sup> has already been made and the project is already operational, therefore validation team has crosschecked the impact on project IRR based on the actual cost paid by PPs sourced from the Purchase Orders<sup>/14/27.1/</sup>, the project IRR based on the actual cost of project is also below the benchmark<sup>/58/</sup>. And as such the question of any reduction in the cost is hypothetical as actual payments<sup>/27.1/</sup> based on mutually agreed terms<sup>/20(a)/(b)/</sup> has already been done and the project IRR based on the actual cost is within the sensitivity range. Therefore any decrease in the project cost in future is not possible because as per the actual project cost mentioned in the purchase orders<sup>/20(a)/27.1/27.2/</sup> placed to "Technology supplier". Therefore assessment team rules out the condition in which project IRR will breach the benchmark when project cost is decreased by - 25.5%.
- **O&M cost:** As per the offer letter<sup>/18/</sup> the O & M is free for first two years and from the 3<sup>rd</sup> year, annual cost of 2.1 Million per WTG would be charged from the PP and same has been cross checked and found consistent with Board Investment decision<sup>/9/</sup>, however the PO<sup>/20/</sup> reveals the O&M cost as 2 million from 3<sup>rd</sup> year onwards. Moreover validation team observed that O&M cost is not a critical factor as it is just 1.87% of the total project cost. Even the 100% removal of O&M cost doesn't impact the additionality, therefore any reduction of -150% in the O&M cost is hypothetical in future to make the project non additional.
- **Tariff :-** As stated earlier, as the WTGs located in the state of Karnataka state of India, tariff Rs 3.70/kWh is fixed by PPA<sup>/37/,49/</sup> for 20 years, therefore any increase in tariff for the SND-101 WTG located in Karnataka is hypothetical, on and above the tariff is further subjected to 10% variation and the independent study reveals that the proposed project activity of MWP will become breach the benchmark when the tariff escalated by 28.5% ie., increasing the tariff rate from INR 3.70 per kWh<sup>10</sup> to INR 4.75 per kWh<sup>/05/</sup>, which is unlikely to happen.

#### Findings:

CL#10 (I-XX), CL#08 (III to IX, XVIII, XIX, XX, XXII), CL#9, CL#10 & CL#11 were raised and closed during the review, please refer Annex-2 for details, where same has been discussed completely.

#### Opinion:

As per validation team opinions, the project has met the requirement of para 109 and 110 of VVM V1.2<sup>/25/</sup>.

- The parameters used in the investment analysis has been thoroughly examined and described in detail;
- The suitability of benchmark has been appropriately explained and validated;
- The underlying assumptions and calculations (investment analysis and benchmark) are correct.
- The financial returns of the project activity without CDM (project IRR, 7.97%) and with CDM (project IRR, 10.26%) are insufficient to justify the required investment as the benchmark is (BPLR, 12.50%) without CDM benefits (VVM v1.2 para 109 (c)<sup>/25/</sup>).
- The project complies with the latest version of "Tool for demonstration and assessment of additionality", "Guidance on the assessment of investment analysis" and "Guidelines for the reporting and validation of plant load factors".

#### 4.6.4 Barrier analysis

##### Discussion:

PP did not use "Barrier Analysis" to demonstrate additionality and as per EB 68, Annex 27<sup>/52/</sup>, Guidelines on the demonstration of additionality of small-scale project activities<sup>/28/</sup>, the project developer was required to provide an explanation to show that the project activity would not have occurred anyway due to at least one



barrier out of five barriers<sup>1</sup>. Since project developer had chosen investment barrier, additionality demonstration is in conformity with Guidelines on the demonstration of additionality of small-scale project activities<sup>/28/</sup>.

**Opinion:**

Not applicable

**4.6.5 Common practice analysis**

Not applicable.

**4.7 Application of Monitoring Methodology and Monitoring Plan**

**Discussion:**

The project activity has applied approved simplified monitoring methodology AMS I.D, version-17<sup>/29/</sup>. The project activity is a grid connected renewable resource based power generation project, the applied monitoring methodology requires the monitoring of net generation electricity supplied to grid ( $EG_{BL,y}$ ) by the project plant to grid, the net electricity supplied to grid is to be calculated by electricity export less electricity import from the grid. The net generation electricity supplied to grid will be cross checked with invoice receipt of the buyer<sup>/56/</sup>.

Further, the monitoring methodology requires calibration of monitoring equipment as per national/ local standard applicable and monitored data must be archived in electronic format for crediting period plus two years.

The project activity is located in Karnataka state, therefore the monitoring procedure will be followed as mentioned below.

The final version PDD<sup>/02/</sup> has described that the monitoring plan is in a clear and transparent manner, which is in compliance with applied approved consolidated monitoring methodology AMS I.D, version-17<sup>/29/</sup>. The validation team has validated the each parameters required to be monitored as per applied monitoring methodology and in opinion the proposed monitoring plan in PDD is feasible to implement and will result credible emission reductions resulted due to the project activity.

**Parameter determined ex-ante:**

The project adopts the ex-ante calculation of emission factor of the grid. The OM and BM are calculated as fixed factors for the entire crediting period by choosing data vintage based on ex-ante data published database<sup>/32/</sup>.

The methodology requires identification of the following parameters for grid-connected wind power projects:

- a) Data used to calculate the operating margin emission factor, is based on the choice of the method so as to determine the operating margin (OM), which is consistent with "Tool to calculate the emission factor for an electricity system"<sup>/31/</sup>;
- b) Data needed to calculate the build margin emission factor consistent with "Tool to calculate the emission factor for an electricity system"<sup>/31/</sup>;

The parameters determined *ex-ante* for calculating the emission factors are listed in the webhosted PDD<sup>/01/</sup> and final PDD\_v7.1<sup>/02/</sup> have been verified by validation team as follows:-

**Southern Grid:**

- i. Weighted generation Operating Margin (OM) emission factor is  $0.9670 \text{ tCO}_2/\text{MWh}$ <sup>/6/</sup>.
- ii. Build Margin (BM) emission factor ( $EF_{BM}$ ) is  $0.7634 \text{ tCO}_2/\text{MWh}$ <sup>/32/</sup>.
- iii. Combined Margin (CM) emission factor ( $EF_y$ ) of  $0.91616 \text{ tCO}_2/\text{MWh}$ <sup>/6/</sup>

The OM and BM are calculated as fixed factors for the entire crediting period by choosing data vintage based on ex-ante data from published database<sup>/32/</sup>. The parameters for determining the GHG emissions reductions have been clearly demonstrated in section B.6.2. of the PDD<sup>/1/</sup>.

The validation team has verified the above information from the data published by Central Electricity Authority of India "CO<sub>2</sub> Baseline Database for Indian Power Sector"<sup>/32/</sup> and confirms that values used are consistent and reasonable.

**Parameters monitored ex-post:**



The project emission and leakage are considered zero, as the project activity is a new wind energy based power project and does not involve transfer of energy generating equipment, which is in conformity with the applied approved monitoring methodology AMS I.D Version 17<sup>/29/</sup>.

The following parameters will be monitored ex-post:

- i. Electricity exported to the Southern grid in kWh.
- ii. Electricity imported from the Southern grid in kWh.
- iii. Total transmission losses from Project activity in kWh.
- iv. Net electricity supplied to the Southern grid in MWh.

The monitoring plan consists of monitoring of the above parameters by metering electricity at the substation-grid connected point to the respective grid. The electricity exported and imported will be directly measured by metering equipment as mentioned in the PPA<sup>/38/-/37/</sup>. The electricity (export, import) will be measured continuously by digital kilowatt hour (kWh) meters and will be recorded on monthly basis. This data will be cross checked against the sales receipt from the grid company. The results from the meter will be supplied by the respective grid company to the developer on a monthly basis.

Every metering system includes a combination of main meter and a back-up meter. The back-up meter will be used in case of failing of the main meter. Calibration will be carried out periodically i.e. yearly. The calibration procedure is clearly described in the PDD, which is in conformity with the "Guidelines for assessing compliance with the calibration frequency requirements", version 01 Annex 60 EB 52 Report<sup>/39/</sup>.

The validation team considers that the monitoring plan has complied with the requirements in the approved methodology.

#### Management system and quality assurance:

The section B.7.2 of the PDD<sup>/1/</sup> clearly describes the detailed monitoring procedures, monitoring structure, monitoring items, training<sup>/15/</sup>, calibration procedure and handling of emergency situation, which in conformity with applied methodology. The authority and responsibility of overall project management, registration, monitoring, measurement and reporting for project lies with Core Carbon X<sup>/40/</sup> and the O & M contractors for the project activity that is SEL<sup>/17/18//20/</sup>. The joint electricity measurement will be carried out once in a month in presence of both parties (the O & M contractor and officials of the respective SEB). During the Joint Meter Reading (JMR), both parties will sign on the recorded reading. The meters will be tested for accuracy and calibration of the machines would be taken care of as per the established practice. The calibration frequency defined in the PDD fulfils the requirements of EB 52, Annex 60. The monthly electricity generation and export data will be archived for 2 years after the crediting period to facilitate cross-checking during the crediting period. In state of Karnataka the energy meters not less than 0.2s accuracy classes will be used to monitor the electricity export and import to or from the Southern grid. The electricity meter will be calibrated as per the frequency prescribed in power purchase agreement or at least once in a year, which is in line with the requirement of general guidelines to SSC CDM methodologies AMS I.D Version 17<sup>/29/</sup>.

#### Apportioning:

It is done for the calculation of the transmission losses. These transmission losses are deducted from the electricity generation readings of the meter installed at the project site in accordance with the Article 6 of the PPA. The electricity generation readings are calculated as the difference of the export and import readings.

The apportioning will be done as per the net electricity generated at controllers of the WTGs of the project activity. The daily generation data on controllers which is monitored from the CMS will be used for deriving a ratio for apportioning.

Karnataka:

Derived Energy (DE)

$$DE = X_1 - (X_1 \times Z\%)$$

$X_1$  = Reading of the energy meter installed at the project site (kWh)

Z= is the percentage transmission line loss incurred in the transmission line between the project and receiving station and shall be as follows:-

$$Z = \frac{(X_1 + X_2 + X_3 + X_4 + \dots) - Y}{(X_1 + X_2 + X_3 + X_4 + \dots)} \times 100$$

Y = Reading of the bulk energy meter installed on the 110kV of the side of receiving station (kWh).

$X_2, X_3, X_4$  = Reading of the energy meters installed at the various individual wind power projects being developed / proposed to be setup in the area and connected to the receiving station.

#### **Findings:**

CL#06 & CL#8 (XV, XVI) were raised and successfully closed out, please refer Annex-2 for details, where same has been discussed completely

#### **Opinion:**

The validation team confirms:

- The monitoring plan mentioned in section B.7 of PDD is in compliance with the applied methodology AMSID, version 17.
- All the values used against sources and the authenticity of sources has been verified and the validation team confirms that all relevant parameters to calculate the GHG emissions reductions of the project have been sufficiently considered and the value of the ex-ante fixed parameter used for emission reduction calculation i.e. grid emission factor has been determined conservatively and the estimation ex-post parameters are reasonable
- Based on the interview with the operation and maintenance personal during the site visit the assessment team confirms that the project participant deputed the competent personal to execute the monitoring approach and to follow the monitoring plan.

### **4.8 Sustainable development**

#### **Discussion:**

The PDD describes the projects contribution towards sustainable development of host country as per indicator stipulated by the Host country DNA<sup>/41/</sup>. The project activity will lead to generation of employment for local villagers during construction/erection and operation of the WEG. Further, the project activity is employing the latest state of the art technology available, which will ensure the efficient utilization of resources to generate cleaner power. The project activity is renewable resource based power generation project and the generated electricity will be displacing the grid electricity, thereby reducing the GHG emission as the Indian grid is dominated by fossil fuel based thermal power plant.

The validation team has cross checked the information provided in PDD through official website of DNA <http://www.envfor.nic.in/cc/cdm/criteria.htm>

And also by interviewing local stakeholders during site visit and found the information provided is consistent.

#### **Opinion:**

The Validation Team is with the opinion that the project activity is in full compliance with all applicable requirements for the CDM by leading to emission reductions in addition to what would have otherwise occurred, providing for reliable and measurable emission reductions with sustainable development in India through improvement of environmental condition, reduction of air pollutants and alleviation of poverty.

### **4.9 Local Stakeholder Comments**

#### **Discussion:**

The local stakeholders were invited through invitation letters handed over to the individuals by meeting coordinators on 5/3/2011<sup>/24-ii/</sup> and were also intimated regarding the wind mill installation process by local news paper advertisement on 18/3/2011<sup>/24-iv/</sup> by. The local stakeholder meeting for the project activity was conducted at project sites on 22/03/2011<sup>/24-ii & iii/</sup>. The comments by local stakeholders have been invited in an open and transparent manner. A summary of the comments received has been provided to the DOE together with a report indicating how due account was taken of the comments received.

The PDD of the project activity has been published for Global Stakeholders' consultation for the period of 25/10/2011—24/11/2011 on UNFCCC website<sup>/42/</sup>, which is later to that a local stakeholders' consultation was conducted on 18/07/2011.

The stakeholder consultation was conducted at the project sites. The local villagers, farmers, shareholders, employees MWP, representatives of state electricity board and Suzlon were invited to site office of Suzlon Infrastructure Services Limited for assessing their comment on the project activity Konchigeri Village, Bellary District, Karnataka. Detailed minute of meeting, along with list of attendees with their signature have been verified by the validation team<sup>/24/</sup>. A detailed description of stakeholder consultation has been provided in

section E of PDD. The questions were raised during the stakeholder consultation shows that the proposed project received support from the local people.

The validation team noted that all the relevant stakeholders were identified are in line with the definition of stakeholders as per latest version of CDM Glossary of terms.

**Findings:**

CAR#07 (a-c) & CL#8 (X) was raised and successfully closed out; please refer Annex-2 for details, where same has been discussed completely

**Opinion:**

During the site visit conducted on 13/12/2011, the DOE met a section of the stakeholders. The stakeholders were mainly farmers, villagers, SEL personnel. The stakeholders confirmed the stakeholder meet held by the PP on 22/03/2011<sup>/36/</sup>, in unbiased manner, that the project participant has explained about the project activity and that they had no concerns with respect to the project activity.

The validation team can confirm that the process for conducting the local stakeholders meeting is adequate and credible, which is in compliance with the requirements of paragraph 130 of VVM, version 01.2<sup>/25/</sup>.

#### **4.10 Environmental Impacts**

**Discussion:**

As per the Ministry of Environment and Forests (MoEF), India Environment Impact Notification dated 1 December 2009<sup>/43/</sup>, wind power projects are not covered under any schedule and thus environmental impact assessment is not required for the project activity. The project is not likely to create any adverse environmental effects. The project complies with environmental regulations in India and the investors have received all the necessary clearances required for the project activity<sup>/12/13/14/21/</sup>.

**Findings:**

No finding was raised, however, during the validation process the PP has revised the PDD using latest version of the tool and has also updated with the latest link. The same has been accepted by the validation team considering the improvement in accuracy and conservativeness.

**Opinion:**

The validation team has verified the regulation related to environmental impact analysis and confirms that the wind power project in India do not require to carry out the environmental impact analysis

#### **4.11 Project design of small-scale CDM project activities**

**Discussion:**

The proposed project activity is grid connected renewable resource (wind) based power project with installed capacity 2.1 MW<sup>/17/18/20/</sup>, the net generated electricity will be supplied to respective regional grid<sup>/37/</sup>, hence the project is eligible type I small-scale CDM project activity and can use the simplified baseline methodology.

The validation team has confirmed the capacity of the proposed project activity by reviewing the purchase orders and during onsite visit and is of opinion that project activity is eligible as small-scale CDM project activity and can use the simplified baseline methodology.

**De-bundling:**

The project activity is an independent activity and not a de-bundled component of a larger project activity as per guideline EB54 Annex 13<sup>/31/</sup>:

- i) The Validation team has validated that there is no registered small scale CDM project activity or a request for registration made by the investor, in the same project category and technology/measure or one that has been registered in the previous two years; whose project boundary is within 1 kilometre of the project boundary of the proposed small scale project activity at the closest point as checked from the UNFCCC website<sup>/42/</sup> (Project Search Interface) and discussions held during the site visit.
- ii) The Validation team has validated that there is no registered small scale CDM project activity or a request for registration made by Malaxmi Wind Power (project participant from host Party) in the same project category and technology/measure or one that has been registered in the previous two years; whose project boundary is within 1 kilometre of the project boundary of the proposed small scale project activity at the closest point as checked from the UNFCCC website<sup>/42/</sup> (Project Search Interface) and discussions held during the site visit.

- iii) It has been validated from document review and UNFCCC official website (Project Search Interface) that there is one project under validation titled: '*8.4 MW Wind Power Project in Rajasthan, India*', where Malaxmi Wind Power has participated as project participant and this project is located at different states of India which is more than 1 km distance from the project location. Hence it can be confirmed that the proposed project activity (Wind Power Project in Karnataka India) cannot be considered as de-bundled component of this project as the project boundary of that the proposed project activity (Wind Power Project in Karnataka India) is not within 1 kilometre of the project boundary of the registered projects, as checked from the UNFCCC website<sup>/42/</sup> (Project Search Interface).

**Findings:**

CAR#11 was raised and successfully closed, please refer Annex-2 for details, where same has been discussed completely

**Opinion:**

Based on discussion above the validation team is of opinion that the project activity complies with the requirement stipulated in para 135 and 136 of VVM, Version-01.2<sup>/25/</sup>.

## **5. Global Stakeholder Consultation Process**

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..

### **5.1 Description of how and when the PDD was made publicly available**

The Project Design Document for this project was made available on <https://cdm.unfccc.int/Projects/Validation/DB/MOL070UVQ23AYY81ZXPIZHQXJCKHIT/view.html> and was open for comments from 25/10/2011 until 23/11/2011.

### **5.2 Compilation of all comments received**

Since no comment where received hence during the global stakeholder consultation. Hence they have not been included here<sup>/42/</sup>.

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

Not applicable.

## 6. References

S. No.	Name of document
/1/	PDD Version: 01 dated 20/10/2011 (Publicly made available)
/2/	PDD Version: 02 dated 30/12/2011; PDD Version 03 dated 04/04/2012; PDD Version 04 dated 21/05/2012; PDD Version 05 dated 30/07/2012; PDD Version 06 dated 02/08/2012; PDD Version 07 dated 28/09/2012, PDD Version 7.1 dated 16/11/2012 (Final)
/3/	CER sheet Version 01 dated 19/08/2011
/4/	CER sheet corresponding to final version of PDD dated 16/11/2012.
/5/	IRR sheet Version: 01 dated 30/12/2011
/6/	IRR sheet corresponding to final version 7.1 of PDD
/7/	Letter of Approval from the DNA, India; Ref No-4/2/2012-CCC dated 09/05/2012
/8/	Modalities of Communication; dated 30/07/2012.
/9/	M/s Malaxmi Wind Power: Investment Board decision; dated 16/12/2010
/10/	Land Lease agreement between M/s Malaxmi Wind Power and KREDL; dated 28/12/2011
/11/	M/s Malaxmi Wind Power: Responsibilities and authorities of key person in CDM; dated 20/12/2011.
/12/	KREDL approval to transfer 2.1 MW to M/s Malaxmi Wind Power; Ref No-KRED/08/MWP (SND-101)-SIL/2011/561; dated 31/01/2011.
/13/	Electrical Inspectorate, Bangalore approval for completion of electrical work of SND-101 of 2.1MW; Ref no-CEIG/EI-1/AE-1/38195-98; dated 17/3/2011.
/14/	Karnataka Power Transmission Corporation Limited (KPTCL): Commissioning certificate (SND-101) on 31/03/2011: Letter no: EEE/220 ASD/blg/10-11/1224-33; dated 31/03/2010- GESCOM, Bellary District
/15/	Training Report; M/s Malaxmi Wind Power dated 20/12/2011
/16/	Prior Consideration of the CDM form (2.1 MW Wind Power Project activities) M/s Malaxmi Wind Power dated 12/05/2011.
/17/	Technical specification Suzlon – S88 (2.1 MW) WTG as annexure 1 to purchase order dated 05/11/2009 <ul style="list-style-type: none"> <li>➤ Technical Life:- Pg 7 of 17</li> <li>➤ Suzlon Product list- <a href="http://www.suzlon.com/products/l2.aspx?l1=2&amp;l2=9">http://www.suzlon.com/products/l2.aspx?l1=2&amp;l2=9</a></li> </ul>
/18/	Proposal/Quotation for supply of two number WTG of 2.1MW each issued by Suzlon Energy Limited : Reference No:- ; dated 09/12/2010

/19/	<p>Loan details from axis Bank</p> <p>a) Bank's Sanction Letter No. AXISB/HYD/RMG/2010-11/266 dated 24/03/2011.</p> <p>b) Axis Bank web link:- <a href="http://www.axisbank.com/business-banking/business-banking.aspx">http://www.axisbank.com/business-banking/business-banking.aspx</a></p> <p>c) Revision of Loan from Axis Bank; AXISB/HYD/RMG/2011-12/050; dated 1/7/2011</p>
/20/	<p>Purchase order for supply WTGs;</p> <p>a) PO for 2 x 2.1 MW; Reference No MWP/KTK/SEL/001:- ;dated 03/01/2011</p> <p>b) Acceptance of Suzlon for two (SND-101, SN-D103) no. of Suzlon 2.1 MW Ref No; MWP/SUBMIT-PO/001- dated 24/02/2011.</p> <p>c) Cancellation of 1 no of 2100 kW Suzlon Wind Turbine Generator at Sindgere, Bellary Dist, Karnataka for location SND -103; dated 4/6/2011.</p> <p>d) Acknowledgement of Cancellation of SN-103; Issued by Suzlon to PP; dated 01/07/2011.</p>
/21/	<p>a) Karnataka Electricity Regulatory Commission, Bangalore, Tariff Order; dated 11/12/2009.</p> <p>b) Working Capital Interest Rate; Pg 03 KERC Tariff Order; dated 11/12/2009.</p> <p>c) Karnataka Electricity Regulatory Commission, Bangalore, Tariff Order; dated 18/01/2002</p>
/22/	M/s Malaxmi Wind Power: Declaration confirming No-capacity addition and capacity of the project activity will not go beyond 2.1MW dated 09/12/2011.
/23/	M/s Malaxmi Wind Power as a proprietorship firm: Certificate of Registration Form B; Ref No-08741613886; Issued by commercial tax division of Jaipur ;dated-14/9/2010.
/24/	<p>M/s. Malaxmi Wind Power: Local Stakeholder consultation;</p> <p>i.) Invitation sent on 05/03/2011.</p> <p>ii.) Minutes of Meeting held on 22/03/2011</p> <p>iii.) List of attendance 22/03/2011.</p> <p>iv.) Newspaper Advertisement</p>
/25/	EB 55, Annex 01: CDM Validation and Verification Manual – Version 01.2, dated 30/07/2010
/26/	True Wind International Certification India: third party conducted PLF study for M/s Malaxmi Wind Power dated 12/12/2010.
/27/	M/s Malaxmi Wind Power: Declaration confirming No-ODA and public funding for project activity dated 09/12/2011.
/27.1/	M/s Malaxmi Wind Power: Annual Report for financial year 2011-12, Annex 4: Expense done for WTG.
/27.2/	M/s Malaxmi Wind Power: Cost summary spreadsheet of WTG on per WTG basis
/27.3/	M/s Malaxmi Wind Power: Cost summary of WTG on per WTG basis
/28/	EB 68, Annex 27: “Guidelines on the demonstration of additionality of small-scale project activities” version 08 dated 29/09/2011
/29/	EB 61, Annex 17: AMS-I.D: Approved small scale methodology for “Grid connected renewable electricity generation”, version 17dated 03/06/2011.
/30/	EB 54 Annex 13 “GUIDELINES ON ASSESSMENT OF DEBUNDLING FOR SSC PROJECT ACTIVITIES,” version 03, dated 28/05/2010
/31/	EB 63, Annex 19: “Tool to calculate the emission factor for an electricity system”, version 02.2.1, dated: 29/09/2011
/32/	Central Electricity Authority (CEA) CO <sub>2</sub> database version 6 , March 2011 available at <a href="http://www.cea.nic.in">www.cea.nic.in</a>



/33/	EB 34, Annex 09: Guidelines for Completing the Simplified Project Design Document (CDM-SSC-PDD) and the Form for Proposed New Small Scale Methodologies (CDM-SSC-NM), version 05 dated 14/09/2007
/34/	Project Design Document form for Small-Scale CDM project activities, version 03 dated 22/12/2006
/35/	<ul style="list-style-type: none"> <li>a) DNA communication by M/s Malaxmi Wind Power made on 10/12/2011.</li> <li>b) UNFCCC secretariat communication by made on 10/12/2011, M/s Malaxmi Wind Power and acknowledgment from UNFCCC made on 10/12/2011.</li> <li>c) Revised DNA communication by M/s Malaxmi Wind Power</li> </ul>
/36/	Audit Plan of Onsite Visit of Konchigere; Bellary, Karnataka, India; dated 13/12/2011.
/37/	<p>Power Purchase agreement between M/s Malaxmi Wind Power and GESCOM; Certificate no:-IN-KA62052779315329J; dated 15/3/2011.</p> <ul style="list-style-type: none"> <li>a) Date of Signing: - Pg 2</li> <li>b) Location:- Pg 2</li> <li>c) Rates and Charges: - Pg 10</li> <li>d) Tariff Invoice and Apportioning: - Pg 11.</li> <li>e) Signatory Authorities: - Pg 20.</li> <li>f) Project and site details: - Pg 21.</li> </ul>
/38/	Photograph of Onsite visit along with Meters
/39/	EB 52 , Annex 60: "Guidelines for assessing compliance with the calibration frequency requirements"
/40/	Ministry of New and Renewable Energy Scheme for Implementation of Generation Based Incentives (GBI) for Grid Interactive Wind Power Projects dated 17/12/2009
/41/	Host Party DNA webpage link for sustainable development criteria: <a href="http://www.envfor.nic.in/cc/cdm/criteria.htm">http://www.envfor.nic.in/cc/cdm/criteria.htm</a>
/42/	<p>UNFCCC webpage link:</p> <ul style="list-style-type: none"> <li>a) <a href="http://unfccc.int/parties_and_observers/parties/items/2352.php">http://unfccc.int/parties_and_observers/parties/items/2352.php</a></li> <li>b) <a href="http://cdm.unfccc.int/Reference/Guidclarif/index.html#meth">http://cdm.unfccc.int/Reference/Guidclarif/index.html#meth</a>.</li> <li>c) <a href="http://cdm.unfccc.int/methodologies/PAmethodologies/approved">http://cdm.unfccc.int/methodologies/PAmethodologies/approved</a></li> <li>d) <a href="http://cdm.unfccc.int/Projects/PriorCDM/notifications/index_html">http://cdm.unfccc.int/Projects/PriorCDM/notifications/index_html</a></li> <li>e) UNFCCC project view[25/10/2011—24/11/2011] <a href="https://cdm.unfccc.int/Projects/Validation/DB/MOL070UVQ23AYY81ZXPZHGXJCKHIT/view.html">https://cdm.unfccc.int/Projects/Validation/DB/MOL070UVQ23AYY81ZXPZHGXJCKHIT/view.html</a></li> <li>f) <a href="http://cdm.unfccc.int/EB/022/eb22_repan3.pdf">http://cdm.unfccc.int/EB/022/eb22_repan3.pdf</a>.</li> <li>g) <a href="http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php">http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php</a>.</li> </ul>
/43/	Environment Impact Notification by MOEF <a href="http://www.envfor.nic.in/legis/env_clr.htm">http://www.envfor.nic.in/legis/env_clr.htm</a>
/44/	Modalities of Communication Form (F-CDM-MOC)
/45/	References checking Geo- coordinates (PLF Report, Site Visit, Prior Intimation)
/46/	EB66_Annex63_GLOSSARY OF CDM TERMS_V6
/47/	EB22_Annex3_Version2: Additional clarifications regarding the treatment of national/sectoral policies and circumstances



/48/	EB 62, Annex 05; GUIDELINES ON THE ASSESSMENT OF INVESTMENT ANALYSIS_V5
/49/	<p>a) Karnataka Electricity Regulatory Commission <a href="http://www.kerc.org/web/ / / / / regulations.html">http://www.kerc.org/web/ / / / / regulations.html</a> (as reviewed on 13/9/2012)</p> <p>a) <a href="http://www.kredl.kar.nic.in">www.kredl.kar.nic.in</a> <a href="http://www.kredltest.in/Windenergyreport.aspx">http://www.kredltest.in/Windenergyreport.aspx</a></p>
/50/	Transfer of 2.1 MW(SND-101) wind power capacity in favour of M/s Malaxmi Wind Power
/51/	Appointment of <i>KBS Certification services Pvt. Ltd</i> for providing the CDM validation services by Ms/ Malaxmi Wind power. Dated 03/09/2011
/52/	EB 50, Annex 13; GUIDELINES FOR OBJECTIVE DEMONSTRATION AND ASSESSMENT OF BARRIERS
/53/	EB66_Anx23_V18; GENERAL GUIDELINES FOR SSC CDM METHODOLOGIES
/54/	EB35_Annex34_Non-binding best practice examples to demonstrate additionality for SSC project activities
/55/	<p>Details Related to Loan Rates and Bank Prime Lending Rate</p> <p>a) BPLR as per the State Bank of India as 12.50% <a href="http://in.reuters.com/article/2010/12/13/india-plr-idINSGE6BC06T20101213">http://in.reuters.com/article/2010/12/13/india-plr-idINSGE6BC06T20101213</a></p> <p>b) UPFRONT FEE FOR FRESH TERM LOANS AND PROCESS FEE FOR RENEWAL/ REVIEW OF TERM LOANS</p> <p>c) "Financial Intermediation and Markets" report published on <a href="http://indiabudget.nic.in/es2011-12/echap-05.pdf">http://indiabudget.nic.in/es2011-12/echap-05.pdf</a> used for crosscheck of BPLR and interest rate.</p>
/56/	<p>a) Generation Data Invoices.</p> <p>b) PLF determined at WTG on the basis of Invoice raised between March 2011 to April 2012.</p>
/57/	<p>a) EB 48, Annex 11_V1; Guidelines for the reporting and validation of plant load factors</p> <p>b) EB 50 annex 15_V1; Tool to determine the remaining lifetime of equipment</p>
/58/	<p>Web links and Source referred for BENCHMARK:-</p> <p>a) <a href="http://www.bseindia.com/about/abindices/bse500.asp">http://www.bseindia.com/about/abindices/bse500.asp</a></p> <p>b) <a href="http://www.rbi.org.in/scripts/BS_ViewBulletin.aspx?Id=12131">http://www.rbi.org.in/scripts/BS_ViewBulletin.aspx?Id=12131</a></p> <p>c) <a href="http://www.moneycontrol.com/stocks/marketinfo/marketcap.php?indcode=Power%20-%20Generation/Distribution&amp;optex=BSE">http://www.moneycontrol.com/stocks/marketinfo/marketcap.php?indcode=Power%20-%20Generation/Distribution&amp;optex=BSE</a></p> <p>d) <a href="http://www.bseindia.com/stockinfo/stockprc.aspx">http://www.bseindia.com/stockinfo/stockprc.aspx</a></p> <p>e) <a href="http://www.bseindia.com/stockinfo/indices.aspx">http://www.bseindia.com/stockinfo/indices.aspx</a></p> <p>f) <a href="http://cercind.gov.in/rep1304.pdf">http://cercind.gov.in/rep1304.pdf</a></p> <p>g) RBI Inflation rate <a href="http://rbi.org.in/scripts/PublicationsView.aspx?id=13554">http://rbi.org.in/scripts/PublicationsView.aspx?id=13554</a></p> <p>h) Inflation Rate in India in 2010. &gt; <a href="http://rbi.org.in/scripts/BS_SpeechesView.aspx?Id=527">http://rbi.org.in/scripts/BS_SpeechesView.aspx?Id=527</a> &gt; <a href="http://www.inflation.eu/inflation-rates/india/historic-inflation/cpi-inflation-india-2010.aspx">http://www.inflation.eu/inflation-rates/india/historic-inflation/cpi-inflation-india-2010.aspx</a></p>

/59/	<p>Web Links and Source referred for Wind Data and Policies:-</p> <ul style="list-style-type: none"> <li>a) Income Tax Rate (30%) <a href="http://indiabudget.nic.in/ub2010-11/fb/bill91.pdf">http://indiabudget.nic.in/ub2010-11/fb/bill91.pdf</a></li> <li>b) Implementation of Generation Based Incentives (GBI) for Grid Interactive Wind Power Projects <a href="http://ireda.gov.in/pdf/OPERATIONAL%20GUIDELINES%20for%20Wind%20GBI%20and%20AD%20as%20on%2026.05.2010.doc">http://ireda.gov.in/pdf/OPERATIONAL%20GUIDELINES%20for%20Wind%20GBI%20and%20AD%20as%20on%2026.05.2010.doc</a></li> <li>c) Cost of Capital for Central Sector Utilities_Report by CRISIL; 13/4/2000. <a href="http://cercind.gov.in/rep1304.pdf">http://cercind.gov.in/rep1304.pdf</a></li> <li>d) <a href="http://www.mnre.gov.in">www.mnre.gov.in</a></li> <li>e) Surcharge (7.5%) <a href="http://indiabudget.nic.in/ub2010-11/bh/bh1.pdf">http://indiabudget.nic.in/ub2010-11/bh/bh1.pdf</a></li> <li>f) Education Cess; Page ¾ point (11) and (12).(3%) <a href="http://indiabudget.nic.in/ub2010-11/fb/bill2.pdf">http://indiabudget.nic.in/ub2010-11/fb/bill2.pdf</a></li> <li>g) Clause 6 under Payment of Service Tax <a href="http://www.servicetax.gov.in/st-proc-home.htm">http://www.servicetax.gov.in/st-proc-home.htm</a></li> <li>h) Schedule XIV of Companies Act, 1956,</li> </ul>
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## Annex 1: Validation Protocol

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

Requirement	Reference Criteria	Assessment	Conclusion
<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 126-127</p> <p>Paragraph 37 CDM Modalities and procedures</p>	<p>The Name of the Party involved is India, which has a nominated DNA named as Ministry of Environment and Forests, the team has confirmed it from the link given below <a href="http://cdm.unfccc.int/DNA/index.html">http://cdm.unfccc.int/DNA/index.html</a> India (Host Party ) has ratified the Kyoto protocol dated 26 August, 2006, the team has confirmed it from the link provided below; <a href="http://unfccc.int/parties_and_observers/parties/items/2352.php">http://unfccc.int/parties_and_observers/parties/items/2352.php</a> CL08 (1):- LoA from host country (India) has not been received. Title of the project will also be verified with the Host Country Approval letter issued by the DNA of India CL08 (1):- Will be closed when reason for revision of Title mentioned in LoA/HCA as received from MOEF, India(DNA), would be revised in the final PDD <a href="http://cdm.unfccc.int/DNA/index.html">http://cdm.unfccc.int/DNA/index.html</a> <a href="http://unfccc.int/parties_and_observers/parties/items/2352.php">http://unfccc.int/parties_and_observers/parties/items/2352.php</a></p>	<p><del>CL08(1)</del> OK</p>
<p>2. Please state the project participants listed in the PDD and check with which of these project participants does KBS have a contract for the projects validation.</p>	<p>Para 37 CDM M &amp; P Para 7 EB 50 Annex 48</p>	<p>There is only one participant “ Malaxmi Wind Power ” listed and consistent in the PDD. KBS has contractual agreement with “ Malaxmi Wind Power ”. CL08(2) is being raised for completed and duly signed Modalities of Communication from the PP/PP;s. CL08(2) has been closed as MOC from the PP had been</p>	<p>CL08(2) OK</p>



		<u>provided.</u>	
2.1. If the project participant(s) listed in the PDD published at international stakeholder 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	The names of the Project Participants enlisted in the PDD published at international stakeholder consultation are the same in the PDD submitted to request for registration.	<del>CL08(1),</del> <del>CL08(2)</del> OK
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	Refer 2.1	<del>CL08(1), CL08(2)</del> OK
2.3. Project participants who are listed in the PDD (submitted for global stakeholder consultation) but who do not have a contractual relationship with KBS for the purposes of the validation activity may be removed from the PDD which is submitted for registration	EB50 Annex 48 Para.7-9	No, existing project participant was removed from the PDD which is submitted for registration.	OK
2.4. KBS 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 as this is a first validation with new contract being done with KBS, the name of the project participants and title of the project has been searched on UNFCCC website ( <a href="http://cdm.unfccc.int/Projects/projsearch.html">http://cdm.unfccc.int/Projects/projsearch.html</a> ) and local search engine, which confirms that same PP was not contracted before with any other DOE.	OK
2.5. The letter/s of approval are unconditional with respect to 1.1.a) to 1.1.d)above	VVM Para. 49/54	Refer 1 & CL08 (1)	<del>CL08 (1)</del> OK
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	VVM Para. 54  Marrakech Accords, CDM Modalities §29 and §30 Kyoto Protocol Art. 12.2, Marrakech Accords, CDM Modalities §40a	Refer 1 & CL08 (1)	<del>CL08 (1)</del> OK
4. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation	VVM Para. 40-42	The PDD dated 20/10/2011, version 01.1 was made publicly available on UNFCCC website	OK

requirements for a minimum of 30 days, and the project design document and comments have been made publicly available	Marrakech Accords, CDM Modalities, §40	( <a href="https://cdm.unfccc.int/Projects/Validation/DB/MOL070UVQ23AYY81ZXPIZHQXJCKHIT/view.html">https://cdm.unfccc.int/Projects/Validation/DB/MOL070UVQ23AYY81ZXPIZHQXJCKHIT/view.html</a> ) Parties, stakeholders and UNFCCC accredited non-governmental organizations were invited through the CDM-UNFCCC website to provide comments during a 30 days period from 25/10/2011 to 23/11/2011.	
5. The project design document is in accordance with the applicable CDM requirements for completing PDDs.	VVM Para. 55 - 57  Marrakech Accords, CDM Modalities, Appendix B, EB Decisions  EB 25 Annex 15 EB 41 Annex 12	The team has checked the UNFCCC website <a href="http://cdm.unfccc.int/Reference/PDDs_Forms/PDDs/index.html">http://cdm.unfccc.int/Reference/PDDs_Forms/PDDs/index.html</a> and confirms if the latest template (current version 3.0) is applied by the PDD. The team has checked the UNFCCC website <a href="http://cdm.unfccc.int/Reference/Guidclarif/pdd/index.html">http://cdm.unfccc.int/Reference/Guidclarif/pdd/index.html</a> and found following information to be corrected which are not in compliance to the latest guidance for completing PDD: CAR04:- PP to justify the compliance of project activity with the national and sectoral policies (E+ and E-policies) as mentioned in Section B.5 of the PDD. CAR05:- is being raised for following:- Equation used for determination of expected Ex-Ante calculation of emission reductions (baseline, project and leakage emission) should be consistent among the Section B.6.1 and Section B.6.3 of the PDD. The format of the Years used for specifying crediting period should be consistent among the Section A.4.3 and Section B.6.4 of the PDD. <u>CAR04, CAR05 were subsequently closed during validation review according to the support documents furnished along with the response.</u>	<del>CAR04,</del> <del>CAR05</del> OK
6. Has the MoC been completed as per the latest Procedures for MoC between the project participants and the Executive Board?	EB 48 Annex 60 EB 45 Annex 59	Refer 2 & CL08(2)	<del>CL08(2)</del> OK

**Table 2 - PDD**

Checklist Question	Ref Criteria	MoV*	KBS Assessment	Conclusion	
				Draft	Final
A. General Description of Project Activity					
A.1. Project Title					
A.1.1. Does the used project title clearly enable the reader to identify the unique CDM activity?	VVM Para.56	DR	The project title 'Wind Power Project in Karnataka India' is readable and during the search on UNFCCC it was found that there is no other project with this name. and the same can be checked from the project view page. <a href="https://cdm.unfccc.int/Projects/Validation/DB/MOL070UVQ23AYY81ZXPIZHGXJCKHIT/view.html">https://cdm.unfccc.int/Projects/Validation/DB/MOL070UVQ23AYY81ZXPIZHGXJCKHIT/view.html</a> Besides this, there was change in the project title during validation. CL#8(1) :- PP is requested to provide LoA	CL#8(1)	OK
A.1.2. Is there an indication of a version number and the date of the version?	VVM Para.56	DR	As per the Section A.1, date of PDD is 20/10/2011 and the version of PDD is 1	OK	OK
A.2. Description of the Project Activity					
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	DR/I	Based on the description of the project mentioned in the PDD. And as per the site visit of this project was conducted at Bellary by the team (Dinesh & Ambuj) from 13/12/2011 to 15/12/2011. It was found that this is part of is Greenfield project activity. And during site visit it was found that the PP has one WTG of Suzlon of 2.1 MW commissioned on site, which was exporting and importing power to/from the grid via Gulbarga Electricity Supply Company Limited (GESCOM). However based on site assessment following clarification is sought from the client:- a) CL-8_04 ;Commissioning Certificate b) CL-8_07;Purchase Order c) CL-8_09;Copy of pages of PPA between PP & GESCOM. d) CL-8_07;Land lease agreement (if any). <u>CL-8_04, CL-8_07, CL-8_09 were subsequently closed during validation review according to the support documents furnished along with the response.</u>	CL-8_04, CL-8_07 CL-8_09,	OK

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?	VVM Para.58-59 VVM Para. 64(a)	DR/I	Section A.2 describes that 'wind power project activity is to generate renewable electricity using wind power resources' The project also briefly describes four indicators for sustainable development under social well being, economic well being, environmental well being and technological well being.	<del>CL-8_4</del>	OK
A.2.3. If the project activity involves the alternation of an existing installation or process, does the project description clearly state the differences resulting from the project activity compared to the pre-project situation?	VVM Para.63	DR/I	The project activity is a Greenfield project activity, the same was verified during the site visit. CL08(9):- has been raised to clarify whether the generated electricity is being wheeled or not <u>CL-8_09 was subsequently closed during validation review according to the support documents furnished along with the response.</u>	CL08(9)	OK
A.2.4. Is all information provided consistent and in compliance with the actual situation or planning?	VVM Para.64	DR/I	Refer A.2.1	<del>CL-8_04,</del> <del>CL-8_07</del> <del>CL-8_09,</del>	OK
A.2.5. Is all information with respect to project description deemed accurate and complete?	VVM Para.64(b)	DR/I	Same as A.2.1	<del>CL-8_04,</del> <del>CL-8_07</del> <del>CL-8_09,</del>	OK
<b>A.3. Project Participants</b>					
A.3.1. Is the table required for the indication of project participants correctly applied?	VVM Para. 51-54	DR/I	Section A.3 of PDD describe 'Malaxmi Wind Power ' as project participants. And details of Host country, entity of PP and denial from CER sharing has been indicated columnwise in the Section A.3 of the PDD. CL 8_13: has been raised to provide a supporting documents as 'Proof of the proprietorship firm as per the Central Sales Tax Act-1956" Besides this, same can be checked from Annex 1 of the PDD. <u>CL 8_13 was subsequently closed during validation review according to the support documents furnished along with the response.</u>	<del>CL-8_13</del>	OK



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?	VVM Para. 52	DR/I	These details are to be cross-checked with the LoA	<del>CL 8_1</del>	OK
A.3.3. Is all information provided in consistency with details provided by further chapters of the PDD (in particular Annex 1)?	VVM Para. 51	DR/I	As per the details of Annex 1, Mr. Arun Kumar Subramanyam is the authorized representative of Malaxmi.	OK	OK
<b>A.4. Technical Description of the Project Activity</b>					
A.4.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	VVM Para.64	DR/I	Section A.4 of the PDD describes that project is located in the outskirts of Bellary district of Karnataka. Hence exact location cannot be assessed from PDD. However the Latitude/Longitude of the project site has been mentioned. CAR 7(d): has been raised in support of geographic coordinates <u>CAR 7(d): was subsequently closed during validation review according to the support documents furnished along with the response.</u>	<del>CAR 7(d)</del>	OK
A.4.2. Are the latitude and longitude of the site indicated (decimal points)	PDD section A.4	DR	As per details mentioned in section A.4.1.4 Latitude & longitude has been mentioned in required Degree/Minute/Second format.	OK	OK
A.4.3. Does the proposed CDM project activity involve the alteration of existing installations or process?	VVM Para.64	DR	Since its as Greenfield project there has been NO alteration of existing installations or process. Besides this, based on description of technology implemented on the Site we had also asked for the technical specification sheet of S88 as mentioned in the PDD and same has point has been incorporated as CL 8_14. <u>CL 8_14 was subsequently closed during validation review according to the support documents furnished along with the response.</u>	<del>CL 8_14</del>	OK
A.4.4. Is the category(ies) of the project activity correctly identified?	VVM Para.64	DR	As per the list of scopes available of UNFCCC site, project has been identified in the correct category D of Electricity Generation for a system.	OK	OK
A.4.5 Is the Type of the project activity correct, if applicable?	VVM Para 135	DR	The project activity comes under the type I – Renewable Energy Projects.	OK	OK

A.4.6 Is the project activity not a debundled component of a large scale project, if applicable?	VVM Para 136 EB 54 Annex 13	DR	Section A4.5 describes that proposed PA of 2.1MW is a not a debundled component of a large-scale project. However PP also needs provide a self declaration for debundling. <u>CAR01- self declaration for de-bundling, was subsequently closed during validation review according to the support documents furnished along with the response.</u>	<del>CAR01</del>	OK
A.4.7. Is all information provided in compliance with actual situation or planning as available by the project participants?	VVM Para.64	DR	Refer section A4.1	<del>CAR 7,</del> <del>CAR 4</del>	OK
A.4.8. Is the projected emission reductions in consistency with the ex-ante estimation in Section B.6.4?	VVM Para.64	DR	The description of the estimated emission reduction provided in the Table of Section A.4.3 is consistent with table of Section B.6.4	OK	OK
A.4.9. Is the project bundled CDM project activity, if applicable?	Guidance to fill CDM-SSC-PDD	DR	Refer A.4.6	<del>CAR 4</del>	OK
<b>A.5. Public Funding</b>					
A.5.1. Does the information on public funding provided conform to the actual situation or planning as presented by the project participants?	PDD section A.4.5	DR	CL 8_17: has been raised to clarify and substantiate with the supporting documents/evidence, whether any public funding is being used in the project activity or not. And <u>was subsequently closed during validation review according to the support documents furnished along with the response.</u>	<del>CL 8_17:</del>	OK
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	PP had confirmed that there has been NO Public funding involved from any Annex 1 country in this project activity of 2.1 MW. And will be providing a Self declaration of the same, Hence CL 8_XVII has been raised	<del>CL 8_17:</del>	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		Refer section A.5.1.	<del>CL 8_17:</del>	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 EB?	VVM Para.65 VVM Para 68	DR	Section B.1 of PDD describes details of Type, Category, reference, scope and validity which has been found of latest version and also approved by EB (valid from 17/06/2011).And same can be checked from the link below(as observed on 17/01/2012):- <a href="http://cdm.unfccc.int/methodologies/DB/RSCTZ8SKT4F7N1CFDXCSA7BDQ7FU1X">http://cdm.unfccc.int/methodologies/DB/RSCTZ8SKT4F7N1CFDXCSA7BDQ7FU1X</a>	OK	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	DR	Section B.1 of PDD describes latest tool 'Tool to calculate the emission factor for an electricity system', Version 02.2.1, EB 63'	OK	OK
<b>B.2. Choice and Applicability of methodology</b>					
B.2.1. Is the selected approved methodology applicable to the project activity in the PDD?	VVM Para.75/ 66a/68/ 73 EB 27 Para 75	DR	The selected methodology AMS-I.D is applicable to the project activity as it is a small scale wind renewable energy generation project.	OK	OK
B.2.2. Is the discussion in the PDD in conformance with all applicability criteria of the applied methodology?	VVM Para.70-76	DR	As per the table given in section B.2, following criteria is being met: a) Justification is in line with the applicability condition 1. b) Justification is in line with the applicability condition 2, but CL-8_IX has been raised to indentify whether 'Project supplies electricity to an identified consumer facility via national/regional grid' c) Justification is in line with the applicability condition 3. d) Justification is in line with the applicability condition 4. e) Justification is in line with the applicability condition 5. f) Justification is in line with the applicability condition 6. g) Justification is in line with the applicability condition 7. h) Justification is in line with the applicability condition 8.	<del>CL-8_09,</del>	OK



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.	VVM Para 77	DR	During site visit of the Wind Farm ,it was found that there was only 1 WTG of 2.1 MW commissioned by the PP, which was exporting electricity to grid and also importing the electricity from the grid at low speed for starting. Hence there was NO DG or any other equipment consuming the fuel. Hence no GHG emission occurring within the project boundary.	OK	OK
B.2.4. Is the applicability of the selected methodology satisfied?	VVM Para.76	DR	Though the applicability of the selected methodology is satisfied. But during site visit it was observed that site contains only ONE WTG of 2.1MW but in PO they has mentioned two WTG. But still PP need to substantiate the installed capacity is less than the eligibility limit of 15 MW due to which project qualifies as a small scale project activity under Type I of the small scale methodologies which is consistent with its description in PDD. CAR 3: has been raised has been raised to clarify and substantiate with the supporting documents/evidence, whether/not the project activity will cross the eligibility limit of 15 MW. And <u>was subsequently closed during validation review according to the support documents furnished along with the response.</u>	<del>CAR 3</del>	OK
<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	DR	During site it was found that description stated in the PDD was in line with the On site arrangement at the bellary. However to support this we had raised a CL-8_XII-2 hs been raised for electrical commissioning certificate of substation and transformer as approved by Electrical inspector . And <u>was subsequently closed during validation review according to the support documents furnished along with the response.</u>	<del>CL-8_09,</del> <del>CL-8_12[2]</del>	OK
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	DR	Since its is a electricity generation from WTG, hence there are no emission of gas from the project within the boundary.	OK	OK

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	DR	The electricity generated from the project is being exported to Gulbarga Electricity Supply Company Limited (GESCOM) which is also connected to the Southern grid. Above mentioned details can be checked from PP signed by the PP, a CL 03 has been raised and copy this documents have been requested from PP. CL09(2):has been raised to provide the ER sheet along with CM calculation: And <u>was subsequently closed during validation review according to the support documents furnished along with the response.</u>	CL-8_9 <del>CL09(2)</del>	
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	DR	A flow diagram of PA and grid has been included in the PDD.	OK	OK
<b>B.4 Identification of baseline and its development</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	DR	As per the Pg 3 of the "Tool to calculate the emission factor for an electricity system". PP has demonstrated the steps involved in determination of CM in the PDD and should also provide the spreadsheet for it.	OK	OK
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	The applicable CDM requirements have been taken into account in the identification of the baseline scenario, including relevant national and/or sectoral policies and circumstances. The validation team was guided by the local expert in order to confirm the local and sectoral policies of the host country.	OK	OK

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	DR	Section A.4 of the PDD briefs that 'The electricity generated by the project activity is being sold/will be sold to Gulbarga Electricity Supply Company Limited (GESCOM) which is also connected to the Southern grid. In the absence of the project activity electricity generated from the WTGs would have been generated by the operation of existing/proposed grid connected fossil fuel based power plants connected to Southern grid.'	OK	OK
B.4.4. Is conservativeness addressed in the way of identifying the baseline?	VVM Para.90	DR	The PDD describes the selected baseline as conservative as per applied approved methodology AMS I.D version-17.	OK	OK
B.4.5. Is there a verifiable description of the baseline scenario? Does this include a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed CDM project activity?	VVM Para.86	DR	CAR02: Appropriate reference of the methodology provided in section B.1 of the PDD has not been provided and <u>was subsequently closed during validation review according to the support documents furnished along with the response.</u>	CAR02	OK
B4.6) Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	VVM Para.87	DR	PDD identifies the most likely baseline scenario with references and assumptions used in accordance with applied approved methodology AMS I.D version-17, "tool to calculate emission factor of an electricity system" version 2.2.0 and "tool for demonstration and assessment of additionality" version-6. PP needs to provide the supportive documents of all the assumptions, references and rules/regulations related to project activity from host country.	OK	OK
<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	DR	In section B.5 of the PDD of the description of the additionality is provided using the latest version of the "Tool for the demonstration and assessment of additionality, Version 6.0". It also follows the steps as described in applied approved methodology.	OK	OK

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, please confirm its validity of use? Are all steps followed in a transparent manner?	PDD Section	DR	The PDD has applied the "Tool for demonstration and assessment of additionality" version-5,2, which was latest version of the tool available on UNFCCC site. The PDD has demonstrated additionality following the steps of additionality tool.	OK	OK
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?	VVM Para.93/91	DR	CL10_I- Basis for consideration of admin and overhead costs CL10_III- Clarify whether source of considered interest rate is valid at the time of investment decision CL10_X,- Substantiate with appropriate documents for considering the "Cost of capital" and "Cost of equity" in the spreadsheet CL10_XVI- Support document to consider Loan Processing Charges (assumed as 1% of the loan applied) at time of decision making along with parameters used for its calculation has not been provided CL10_XVII- Support document for considering the Debt:Equity ratio is 70:30 at the time of decision making is to be provided <u>All the above were subsequently closed during validation review according to the support documents furnished along with the response.</u>	<del>CL10(I,II,III,XIV,XVII,)</del>	OK
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 date of publication of the PDD, is it discussed how the CDM was taken into account in the decision to go ahead with the project activity?	VVM Para.98-99 VVM Para.103-104	DR	The start date of the project activity is mention in PDD as 03/01/2011 and the date of notification to DNA and CDM EB as 12/05/2011. The PDD made public for global stakeholder comments on 25/10/2011. The start date of the project activity is prior to the date of commencement of global stakeholder comment period CL10(VII) Clarification for considering starting year for investment analysis as March 2010 instead of March 2011. And <u>was subsequently closed during validation review according to the support documents furnished along with the response.</u>	CL10(VII)	OK
B.5.5. Is the start date of the project activity prior to 2 <sup>nd</sup> Aug 2008? How is the early consideration demonstrated?	VVM Para.100-102 PDD Section B.5	DR	The PDD indicates the start date of the project activity 03/01/2011, which after 2 <sup>nd</sup> August, 2008. CL08_03:- Proof of starting date of CDM project activity CL08_04:- Proof of start of commercial operation of the project. CL08_05:- Proof of prior consideration of CDM (information to UNFCCC Secretariat). CL08_06:- Proof of the investment decision of this project activity with CDM consideration. CL08_08:- Proof of Conformity of PLF as per Annex 11, EB 48.	CL08(3,4,5,6,8,20,21,22)	OK



			<p>CL08_20:- O &amp; M contractual document</p> <p>CL08_21:- Generation report of electricity from WTG's since commissioned</p> <p>CL08_22:- Annual report of the PP from the Time of Decision making</p> <p>However, the PP required submitting the supportive.</p> <p><u>Above CL08 was subsequently closed during validation review according to the support documents furnished along with the response.</u></p>		
B.5.6. For 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?	EB 62, annex.3	DR	Not applicable as start date of the project activity is after 2 <sup>nd</sup> August, 2008	OK	OK
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?	VVM Para.10 5-107	DR/I	The PDD has correctly identified the credible alternatives according to the methodology AMS I.D Version 17, which are the continuation of the current scenario and the propose project undertaken without CDM. The consistency of the alternatives with the applicable laws and legislation was confirmed by review of the PDD and sectoral expertise of the validation team.	<del>CL08(3,4,5,6,8,20,21,22)</del>	OK
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 the revenue from the sale of CERs.	VVM Para. 108-109	DR	<p>The PP has performed an investment analysis to demonstrate that the project activity is not a financially attractive alternative. The investment analysis follows a Benchmark analysis approach which is in line with the "Tool for the demonstration and assessment of additionality", Version 05.2.</p> <p>PDD describes that the project activity is not financially attractive. The submitted PDD and excel calculation sheets are reviewed by the validation team to confirm the same. Project developer has demonstrated that the selected baseline scenario is financially less attractive option than other alternatives available.</p> <p>The PP need to provide the documentary evidences against all the input values used for investment analysis.</p> <p>CL10_XIII:- PLF considered for the IRR determination i.e third party PLF report</p>	<del>CL10(XIII, XIV, XV, XVI, XVII, XVIII, XIX, XX)</del>	OK

			<p>(20.8%) is very less in comparison to the KERC order (26.4%)</p> <p>CL10_XIV:- Current Web Link for GBI is not working and also clarification is sought that how the calculation to 13.02 million is obtained based on GBI guidelines</p> <p>CL10_XV:- Approach of Tariff in Post PPA period ie..After 10 year along with its comparison in existing scenario/spreadsheet has not been provided.</p> <p>CL10_XVI:- Support document to consider Loan Processing Charges (assumed as 1% of the loan applied) at time of decision making along with parameters used for its calculation has not been provided.</p> <p>CL10_XVII:- Support document for considering the Debt:Equity ratio is 70:30 at the time of decision making is to be provided</p> <p>CL10_XVIII:- As per pg 13 of KERC project Deprecitaion is considered as 7%, under SLM , which is not consistent with the value considered in ASSUMPTION(C38) [5.24%] also with the income tax link(5.28%) provided.</p> <p>CL10_XIX:- Based on the desk review of Assumptions considered in the IRR Sheet, it was observed that the appropriate link along with Reference for considering 30% Income Tax is not provided</p> <p>CL10_XX:- Based on the desk review of Assumptions considered in the IRR Sheet, as it was observed that the appropriate link with reference for considering O &amp;M expenses [60days] in WORKING CAPITAL (B52) is to be provided, as the current reference of KERC order not clarifying the details of O &amp;M expenses.</p> <p><u>Above points of CL08 was subsequently closed during validation review according to the support documents furnished along with the response.</u></p>		
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	The investment analysis is carried out in accordance with EB guidance applicable to project activity.	CL10(XIII, XIV,XV, XVI,XVII, XVIII,XIX ,XX)-	OK

B.5.10. Is the investment analysis complete and accurate?	VVM Para. 111 EB 62 Annex 5 EB 63 Para 23 EB 53 Annex 32	DR	The PDD has demonstrated the additionality in using latest version of the “tool for demonstration and assessment of analysis” version 5.2, “Guidelines on assessment of the investment analysis” version-5. However, the validation team has observed inconsistency in investment analysis spread sheet provided and the input values used in PDD to demonstrated additionality. The source for all the input values used for investment analysis to be provided by PP.	<del>CL10(XIII, XIV, XV, XVI, XVII, XVIII, XIX, XX)</del>	OK
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	DR	Refer B,5.4-B.5.10	<del>CL10(XIII, XIV, XV, XVI, XVII, XVIII, XIX, XX)</del>	OK
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 EB 62 Annex 5 EB 51 Annex 59 EB40 Para 40	DR	The project activity is a grid connected wind energy based power generation project and has taken Loan from the bank(D:E:70:30). As per applied methodology the project participant has choice to invest or not to invest in the project activity. A benchmark analysis has been carried out for the demonstration of additionality, which is in accordance with the requirements of the tools and methodology applicable. The PP has referred the project IRR from the Prime lending rate given by SBI on 21/10/2010 as 12.50% which is at the time of decision making . The approach selected in PDD is in accordance with EB guidance. CL10_I:- Basis for consideration of admin and overhead costs. CL10_II:- Date of investment decision in PDD. CL10_IV:- Valid Reference weblink of KERC Order considered in the PDD CL10_V:- Interlinking of the values provided in IRR spreadsheet CL10_VI:- Clarification of considering 8760 hrs in the IRR spreadsheet CL10_VIII:- As per the document reviewed on site the project was commissioned on 31/03/2011 then how O & M cost is considered from March 2012 instead from March 2013, as free period is of 2 years CL10_IX:- Project IRR mentioned in PDD (9.74%) is inconsistent with the spreadsheet (8.21%). CL10_XI:- Why source of “Working Capital Interest Rate” is not considered as KERC order instead of BPLR	<del>CL10_(I, II, IV, V, VI, VIII, IX, XI, XII, XIII, XIV, XV, XVI, XVII, XVIII, XIX, XX)</del>	OK

			CL10_XII:- During site visit it was found that the evidence for considering PLF in PDD is inconsistent with the IRR sheet. <u>Above points of CL10 was subsequently closed during validation review according to the support documents furnished along with the response.</u>		
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.11 5/118	DR	Not applicable as the PP has chosen investment analysis CL09_1: Clarification is sought for considering current project IRR (chosen) as suitable financial indicator for the project activity as mentioned in para 4 of Investment Barrier in Section B.5 of the PDD CL09_2: Support document for determination of Emission reduction, CM, BM and OM has not been provided. <i>Refer VVM Para. 67c, 89-90, 93</i> <u>Above points of CL09 was subsequently closed during validation review according to the support documents furnished along with the response.</u>	CL09(1,2) }	OK
B.5.14. Is the discussion on additionality consistent with the identification of all plausible and credible baseline scenarios?	VVM Para. 105	DR	The discussion on additionality is consistent with the identification of all plausible and credible baseline scenarios	OK	OK
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. 116-118	DR	Not applicable	OK	OK
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?	VVM Para 116-117 EB 50 Annex 13	DR	Not applicable	OK	OK
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?	VVM Para. 105	DR	The baseline scenarios identified as stipulated in applied approved methodology, which is the project activity and continuation of current practice, both alternatives are in compliance with host country requirement.	OK	OK

B.5.18. Is the proposed project type be justified as first-of-its kind?	VVM Para. 119 EB 63 Annex 11	DR	Not applicable since the PDD does not describes the project activity as first-of-its kind.	OK	OK
B.5.19. Is the project activity not common practice?	VVM Para. 120-121 EB 63 Annex 12	DR	The project activity is eligible to use simplified baseline methodology and as per simplified modalities and procedure, does not require to carry out common practice analysis	OK	OK
B.5.20. What are the key distinctions between the project activity and any similar projects that are widely used as common practice?	VVM Para. 118, 119c/d	DR	Not applicable		
B.5.21. Is the proposed project activity additional?	PDD Section B.5	DR	Since <u>CL10 (I, II,IV,V,VI,VIII,IX,XI,XII,XIII,XIV,XV,XVI,XVII,XVIII,XIX,XX) were subsequently closed during validation review, according to the support documents furnished along with the response.</u> <u>Hence it can be inferred that proposed CDM project activity was additional at the time of decision making pertaining to capacity, cost and investment climate.</u>	<del>CL10 (I, II,IV,V,VI,VIII,IX,XI,XII,XIII,XIV,XV,XVI,XVII,XVIII,XIX,XX)</del>	OK
<b>B.6. Algorithms and/or formulae used to determine emission reductions</b>					



B.6.1. Are the steps and equations applied to calculate baseline emissions in compliance with the requirements of selected baseline and monitoring methodology?	VVM Para. 67c VVM Para. 89-90 VVM Para. 93	DR	<p>The PDD has correctly followed the steps specified and correctly applied the equations as per approved baseline and monitoring methodology AMS I.D version-17 and tool to calculate emission factor of an electricity to calculate the baseline emission, version-2.20.</p> <p>CL06_a: Source of data (Form B or Monthly billing records) which will be referred for the Net electricity generated by the project, as mentioned under B.7.1 PP is not consistent within the PDD.</p> <p>CL06_b: 'X' and 'Y' Values required for calculation of '<math>EG_{T-E,y, \text{Karnataka}}</math>' need to be substantiated with supporting documents as mentioned in Pg 25 of Section B.7.1</p> <p>CL06_c: Accuracy class and recording frequency of meters used for determine the values of X &amp; Y, as mentioned in Pg 25 of Section B.7.1 has not been substantiated</p> <p>CL06_d: During site visit it was found that the transmission losses are provided by KSEB and are not calculated which is against the description mentioned on Pg 25 of Section B.7.1.</p> <p>CL06_g: Value of Total Transmission losses '<math>EG_{T-E,y, \text{Karnataka}}</math>' associated with the project activity is Calculated, hence PP need to justify the basis of not considering in description of section B.7.2.</p> <p><u>Since point raised in CL06 were subsequently closed during validation review, according to the support documents furnished along with the response.</u></p>	CL06 (a,b,c,d,g) , CL09(1,2) , CL10(V)	OK
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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	DR	<p>The PDD has followed the steps specified and correctly applied the equations as per approved methodology to calculate the project emission. As per applied methodology AMS I.D, version-17, the project emissions are considered zero (0), as project activity claims no use of fossil fuel.</p> <p>As per the "Tool to calculate the emission factor for an electricity system, Version 02.2.1" section B6.1 explain all 6 steps as</p> <ul style="list-style-type: none"> <li>• Step 1. Identify the relevant electricity systems.</li> <li>• Step 2: Choose whether to include off-grid power plants in the project electricity system (optional).</li> <li>• Step 3. Select an operating margin (OM) method.</li> <li>• Step 4. Calculate the operating margin emission factor according to the selected method (OM).</li> <li>• Step 5. Calculate the build margin emission factor.</li> <li>• Step 6. Calculate the combined margin emission factor</li> </ul> <p>However, project description to be verified during onsite assessment.</p>	CL06 (a,b,c,d,g) CL09(1,2) CL10(V)	OK
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	DR	<p>As per applied approved methodology AMS I.D version-17, the leakage due to project activity is to be considered if there is transfer of energy generating equipment. The PDD claims leakage as zero, as there is no transfer of energy generating equipment.</p>	CL06 (a,b,c,d,g) CL09(1,2) CL10(V)	OK
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	DR	<p>The PDD has correctly applied all the steps and equations as per applied approved methodology AMS I.D, version-17 and tool to calculate emission factor of an electricity system, version-2.2.0.</p> <p>The validation team has reviewed the calculation and equations used and found in conformance to the applied meth and tool.</p> <p>However, the PP needs to provide the detailed spreadsheets for all calculations (project/baseline emissions, emission reductions ex-ante &amp; ex-post) to be provided, indicating formulas and/or default values/data sources.</p>	CL06 (a,b,c,d,g) CL09(1,2) CL10(V)	OK



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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?	VVM Para.89/90/91 PDD Section B (B.6.2 -B.7.1)	DR	The project activity is renewable resource (wind energy) based grid connected new power plant, as per applied the methodology for the renewable resource based project there are no choice for calculation of baseline emission. Further, as per latest version of "Tool to calculate emission factor of an electricity system" version-2.2.0, the project proponent has chosen the simple OM to calculate OM emission factor as the low cost must run resources accounts less than 50% of the total capacity in India. The PDD has correctly shown the calculation of emission factor of electricity system identified and baseline emission. The PP need to provide the all the documentary evidence against references used.	CL06 (a,b,c,d,g) CL09(1,2) CL10(V)	OK
B.6.6. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	PDD Sections B.5	DR	The uncertainties in estimation of GHG emission reduction are properly addressed in PDD and emission reduction sheet.	CL06 (a,b,c,d,g) CL09(1,2) CL10(V)	OK
B.6.7. Are the ex-ante fixed data provided in compliance with the methodology and/or relevant tools (if applicable)?	VVM Para. 67c, 91, 93 PDD Section B.6.3B.6.4	DR	The ex-ante data shown in PDD are in compliance with applied approved methodology AMS I.D ersion-17 and "tool to calculate emission factor of an electricity system", version-2.2.0.	OK	OK
B.6.8. Is all the data derived from official data sources or replicable records and have these been correctly quoted?	VVM Para. 91a/b PDD Section B.6.3/B. 6.4	DR	According to approved methodology, AMS I.D, Version 17, the baseline emissions are the product of electrical energy baseline EGBL,y expressed in kWh of electricity produced by the renewable generating unit multiplied by an emission factor. Operating Margin (OM) and Build margin (BM) emission factors are correctly taken from the "CO2 Baseline Database for Indian Power System" version-6.0 issued by CEA. The referred document is a publicly available document and available on the website. Validation team has reviewed the above referred document and concluded that the value considered for the ex-ante fixed parameters are correct and appropriate.	CL06 (a,b,c,d,g) CL09(1,2) CL10(V)	OK
B.6.9. Is the vintage of the baseline data correct?	PDD Section	DR	The vintage of baseline data is correctly mentioned in the PDD. The Operating Margin (OM) and Build margin (BM) emission to calculate the combined margin are correctly	CL06 (a,b,c,d,g)	OK

	B.6.3/B.6.4		taken from the "CO2 Baseline Database for Indian Power System" version-6.0 issued by CEA. The referred document is a publicly available document and available on the website. Validation team has reviewed the above referred document and concluded that the value considered for the ex-ante fixed parameters are correct and appropriate.	CL06 (a,b,c,d,g) CL09(1,2) CL10(V)	
B.6.10. Is all the data appropriate and correctly applied to the CDM project activity?	VVM Para. 91c PDD Section B.6.3/B.6.4	DR	The data used for estimation of baseline emission are sourced from data made available by Central Electricity Authority of India. The PP has correctly used all the values in PDD.	CL06 (a,b,c,d,g) CL09(1,2) CL10(V)	OK
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. 90 PDD Section B.6.3/B.6.4	DR	PDD documents all the fixed parameter that are not being monitored throughout crediting period are conservatively and correctly as per applied approved methodology AMS I.D, version-17 and Tool to calculate emission factor of an electricity system, version 2.2.0	CL06 (a,b,c,d,g) CL09(1,2) CL10(V)	OK
B.6.12. Are the ex-post monitored data estimated appropriated for calculation of ex-ante emission reductions?	VVM Para. 67c, 91, 93 PDD Section B.6.3B.6.4	DR	The monitoring parameter in PDD are feasible to monitor and will result credible and realistic emission reduction calculation	CL06 (a,b,c,d,g) CL09(1,2) CL10(V)	OK
B.6.13. Is sampling approach used for any parameters?	EB 65 Annex 2	DR	The PP has not adopted sampling approach for any of the parameter used in PDD	CL06 (a,b,c,d,g) CL09(1,2) CL10(V)	OK

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 PDD has correctly applied the steps and equations in estimating the GHG emission reduction, baseline emission, project emission and leakage in a conservative manner. The emission reduction sheet is reproducible	CL06 (a,b,c,d,g) CL09(1,2) CL10(V)	OK
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 contracted by the project participants (e.g. an engineering company)	EB 48 Annex 11	DR	The PDD has sourced the ex-ante value used for PLF from Third Party Report. The validation team has reviewed the PLF report and found that PLF used in PDD is acceptable as per para 3(a) of "Guidelines for the reporting and validation of plant load factors, version-01".	CL06 (a,b,c,d,g) CL09(1,2) CL10(V)	OK
<b>B.7. Monitoring methodology and Monitoring Plan</b>					
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? Are all parameters and data that are available at validation consistent with the approved methodology. Has this data been interpreted and applied correctly?	VVM Para. 67e PDD Section B.7-B.8 see also Annex 4	DR	Para 11 of AMS ID, V17 requires determination of $EG_{BL,y}$ (in terms of MWh) for each year, And description provided explains about the ' net electricity supplied by the WTG"s installed in Karnataka is calculated as the difference between Export and the import readings and the Transmission Losses' <b><math>EG_{BL,y} = (EG_{export,y,Karnataka} - EG_{Import,y,,Karnataka} - EG_{T-E,y,,Karnataka})</math> .....Eg 1</b> During site visit it was observed those parameters used in Equation 1 are monitored at substation through bulk meters. However following points here raised in CL 6 . (a) PP need to be consistent with source of data (Form B or Monthly billing records) which will be referred for the Net electricity generated by the project,as mentioned under B.7.1 of PDD. (b) 'X' and 'Y' Values required for calculation of 'EGT-E,y, Karnataka ' need to be substantiated with supporting documents as mentioned in Pg 25 of Section	CL 6 (a,b,c,d)	OK

			<p>B.7.1.</p> <p>(c) PP need to substantiate the accuracy class and recording frequency of meters used for determining the values of X &amp; Y, as mentioned in Pg 25 of Section B.7.1</p> <p>(d) During site visit it was found that the transmission losses are provided by KSEB and are not calculated which is against the description mentioned on Pg 25 of Section B.7.1.</p> <p><u>Since point raised in CL06 were subsequently closed during validation review, according to the support documents furnished along with the response</u></p>		
B.7.2. Is the <b>monitoring plan</b> compliant with the approved monitoring methodology and/or relevant tools (if applicable)?	VVM Para. 123(a) PDD Section B.7	DR	<p>The monitoring plan in the PDD is in compliance with the applied approved monitoring methodology and it contains all the necessary parameter as per applied methodology and tool to calculate emission factor of an electricity system for estimation of emission reduction within project boundary.</p> <p>However, the parameters used within project boundary need to be verified during site visit.</p> <p>According to the site visit CL06_(e,f) where raised.</p> <p>CL06_e:- Justification for considering half hourly recording of the electricity generated as mentioned in 2nd paragraph of Section B.7.2 of the PDD has not been provided</p> <p>CL06_f:- Based on description illustrated in B.7.2, the generation renewable electricity by WEG is not line with the description provided in Schedule 6 of PPA and besides this, details Apportioning mechanism in not in line with the details mentioned in Article 6 PPA.</p> <p>Since point raised in CL06 were subsequently closed during validation review, according to the support documents furnished along with the response</p>	<del>CL 6(a,b,c,d,e,f,g), CL 8(XI,V)</del>	OK
B.7.3. Is the implementation of <b>monitoring plan</b> feasible and verifiable.	VVM Para. 123(b) PDD Section B.7		<p>During the site visit it was observed that Substation meter was recording on continuous basis which is against the description of half hourly basis. Hence the CL 6-D</p> <p>d) PP need to justify the basis of considering Half hourly recording of the electricity generated as mentioned in 2nd paragraph of Section B.7.2 of the PDD.</p> <p>Section also describes the regarding the roles and responsibility that would be followed on site. A CL 8_XI has been raised for determination following:-</p> <p>CL 8_XI: Proof of Operational and management structure for implementation and monitoring of project activity.</p> <p>CL 8_V: Training documents</p> <p><u>Since point raised in CL06 &amp; 08 were subsequently closed during validation review,</u></p>	<del>CL 6(a,b,c,d,e,f,g), CL 8(XI,V)</del>	OK

			<u>according to the support documents furnished along with the response.</u>		
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	The monitoring equipments have to be calibrated in a defined frequency i.e. annually from the third party as per the requirement of monitoring plan. The detail mechanism of ensuring the maintenance and calibration of monitoring equipments is defined against each parameter to be monitored in PDD. The same was also confirmed during the site visit by interviewing the concerned persons. . However the CAR 06 was raised due to some inconsistencies.	CL <del>6(a,b,c,d, e,f,g), CL 8(XI, V)</del>	OK
B.7.5. Is the proposed <b>monitoring plan</b> compliance with the methodology/tools and feasible for implementation?	VVM Para. 124 EB 27 Para 75	DR	The proposed monitoring plan in the PDD is feasible to be implemented and in compliance with applied approved methodology. The validation team has reviewed the monitoring plan presented in PDD and the detailed procedure for monitoring and calibration of equipments and concludes that proposed plan is feasible to implement. . However the CAR 06 was raised due to some inconsistencies.	CL <del>6(a,b,c,d, e,f,g), CL 8(XI, V)</del>	OK
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/	Description of the monitoring plan has been described in section B.7.2. And NO Supplementary information has been provided in Annex 4. However the CAR 06 was raised due to some inconsistencies.	CL <del>6(a,b,c,d, e,f,g), CL 8(XI, V)</del>	OK
B.7.7. Does the <b>monitoring plan</b> 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 within the project boundary during the crediting period?	VVM Para. 91a/91d /121/79 PDD Section B.7- B.7.2 EB 27 Para 75	DR/I	The proposed monitoring plan in section B.7 of the PDD clearly indicates the procedure for collection and archiving of all relevant data necessary for estimation of emission reduction within project boundary during crediting period, which are in compliance with applied approved monitoring methodology. However CAR 06 was raised for the inconsistencies observed.	<del>CAR</del> <del>6(a,b,c,d, e,f,g), CL 8(XI, V)</del>	OK
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	The choices of GHG indicators are reasonable and are in compliance with approved methodology and tool.	<del>CAR#6(</del> <del>a,b,c,d,e, f,g), CL 8(XI, V)</del>	OK

B.7.9. Will it be possible to determine the specified project GHG indicators?	PDD Section B.6.2-B.8	DR	All the parameter included in monitoring plan are feasible to monitor and will lead to real and credible emission reduction calculation.	<del>CAR# 6(a,b,c,d,e,f,g), CL 8(XI, V)</del>	OK
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	The information regarding the each monitoring variable is sufficient to ensure the verification of a proper implementation of the monitoring plan	<del>CAR#6(a,b,c,d,e,f,g), CL 8(XI, V)</del>	OK
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/I	The monitoring approach in line with current good practice, the same was confirmed by the local and sectoral expertise of validation team.	<del>CAR #6(a,b,c,d,e,f,g), CL 8(XI, V)</del>	OK
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	All the formula used for estimation of GHG emission reductions are in compliance with monitoring methodology applied.	<del>CAR# 6(a,b,c,d), CL 8(XI, V)</del>	OK
<b>B.8. Operational and Management Structure</b>					
B.8.1. Is the authority and responsibility of project management clearly described?	PDD Section B.7.2, Annex 4	DR/I	The information regarding organization chart including the responsibilities, what records to keep, storage of records etc are incorporated correctly in the section B.7 of the PDD. The same was confirmed by interview with the project proponent. The validation team concluded that the procedure for the data management is identified by the project proponent.	<del>CAR 06(e,f,g)</del>	OK
B.8.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD Section B.7.2, Annex 4	DR/I	The authority and responsibility for registration, monitoring, measurement and reporting clearly described in the PDD. The same was confirmed by document review and interviewing concern person during onsite verification.	<del>CAR 06(e,f,g)</del>	OK
B.8.3. Are procedures identified for training of monitoring personnel?	PDD Section B.7.2, Annex 4	DR/I	The procedures identified for training of monitoring personnel is included under section B.7.2 of PDD. The same was confirmed by interview with the concern person during onsite verification.	<del>CAR 06(e,f,g)</del>	OK



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	The information contained in Annex 3 is consistent with the Section B.4, B.5 and B.6.	OK	OK
B.9.2. Is there any indication of a date when determining the baseline?	PDD Section B.8/Annex 3	DR	Yes the date of baseline completion is mentioned in section B.8 of webhosted PDD.	OK	OK
B.9.3. Is this consistent with the time line of the PDD history?	PDD Section B.8	DR	The date of baseline completion: 20/10/2011 this is consistent with version history of PDD.	OK	OK
B.9.4. Is all data required provided in a complete manner by annex 3 of the PDD?	PDD Annex 3	DR	Yes the data required provided in a complete manner by annex 3 of the PDD	OK	OK
B.9.5. What is the documented crediting period of the project? Is this in line with available data?	PDD	DR	PP has opted for the 10 years of fixed crediting period against the life time of 20 years of project activity.	OK	OK
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	Not applicable since the project activity is new wind energy based power generation project.	OK	OK



B.9.7. In cases where the 'Tool to determine the remaining lifetime of equipment' has been used the project participants may use one of the following options to determine the remaining lifetime of the equipment: i. Use manufacturer's information on the technical lifetime of equipment and compare to the date of first commissioning; ii. Obtain an expert evaluation; iii. Use default values.	EB 50 Annex 15	DR	Not applicable	OK	OK
<b>C. Duration of the Project / Crediting Period</b>					
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	VVM Para. 99 PDD Section C.1.1/C. 1.2	DR	Section C.1.1 describes the starting date of project activity as 3/1/2011. And Expected operational lifetime of the project activity as 20 years 0 months. CL-8_4: CL-8_9:- Purchase order, commissioning certificate, Land Lease Agreement and Technical Specification sheet Suzlon. <u>Since point raised in CL08(4,9) were subsequently closed during validation review, according to the support documents furnished along with the response</u>	<del>CL-8_4,</del> <del>CL-8_9:</del>	OK
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)?	VVM Para. 102a PDD Section C.2/C.2. 1/C.2.2	DR	Section C.2.2 specifies that PP has chosen 'Fixed Crediting period'.	OK	OK
C.1.3. Does the project's operational lifetime exceed the crediting period	VVM Para. 102a PDD Section C.1.2/C. 2.1.1/C.	DR	Not applicable as the ten years fixed crediting period has been opted against the 20 years of technical lifetime of the project activity.	OK	OK

	2.1.2				
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		The project is green field project and is already commission on 31/03/2011. Besides this, Section C.2.2.1 specifies that the 'date is not earlier than the date of registration' and had chosen length as '10 years 0 Months'	CL-8_4, CL-8_9	OK
<b>D. Environmental Impacts</b>					
D.1.1. Has an analysis of the environmental impacts of the project activity been sufficiently described?	VVM Para. 131-133 PDD section D	DR	Section D.1 briefs that 'As per the Ministry of Environment and Forests (Government of India) notification the project activity does not fall under the purview of the Environmental impact Assessment thus the project activity is exempted from the environmental clearances.' And same can be checked from the link below provided as footnote(13) in the PDD <a href="http://moef.nic.in/downloads/rules-and-regulations/3067.pdf">http://moef.nic.in/downloads/rules-and-regulations/3067.pdf</a>	OK	OK
D.1.2. 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	Section D.1 briefs that EIA is not a regulatory requirement for wind energy projects in India. And same can be checked from the link below provided as footnote(13) in the PDD <a href="http://moef.nic.in/downloads/rules-and-regulations/3067.pdf">http://moef.nic.in/downloads/rules-and-regulations/3067.pdf</a>	OK	OK
D.1.3. Will the project create any adverse environmental effects?	VVM Para. 131-133 PDD section D	/DR/	Same as D.1.3	OK	OK
D.1.4. Are trans-boundary environmental impacts considered in the analysis?	VVM Para. 131-133 PDD section D	/DR/	Same as D.1.3	OK	OK

D.1.5. Have identified environmental impacts been addressed in the project design?	VVM Para. 131-133 PDD section D	/DR/	Same as D.1.3	OK	OK
<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	/DR/	Section E.1 briefs that 'local stakeholder consultation meeting for the wind mill installations by MWP' was conducted 'on 22/03/2011 at office of Suzlon Infrastructure Services Limited (Site office), Konchigeri Village, Bellary District, Karnataka.' This date LSC is before the date of PDD webhosting on UNFCCC as 25/09/2011. And same can be checked from the link below; <a href="https://cdm.unfccc.int/Projects/Validation/DB/MOL070UVQ23AYY81ZXPIZHGXJCKHIT/view.html">https://cdm.unfccc.int/Projects/Validation/DB/MOL070UVQ23AYY81ZXPIZHGXJCKHIT/view.html</a>	OK	OK
E.1.2. Have appropriate media been used to invite comments by local stakeholders?	VVM Para. 128-129 PDD Section E.1	/DR/	Section E.1 briefs that 'stakeholders were duly informed on 05/03/2011 by means of Personal Invitation letter to local stakeholders and on 18/03/2011 by means of newspaper advertisement.' CAR 7: has been raised to provide the copy newspaper advertisement and Personal Invitation letter. <u>Since point raised in CAR07 were subsequently closed during validation review, according to the support documents furnished along with the response.</u>	<del>CAR 7</del>	OK
E.1.3. Is the undertaken stakeholder process described in a complete and transparent manner?	VVM Para. 128-129 PDD Section E.1	/DR/	PP need to summarize the questions and comment raised by participants during the LSC process. CL 8_10:- PP need to demonstrate in PDD the LSC along with supporting documents such as Attendance sheet and list of questionnaires distributed at the time of LSC <u>Since point raised in CL08_10 were subsequently closed during validation review, according to the support documents furnished along with the response</u>	<del>CL 8_10</del>	OK
E.1.4. Is a summary of the stakeholder comments received provided?	VVM Para. 128-129 PDD Section E.2	/DR/	Section E.2 briefs regarding the 'points/concerns raised during the stakeholder meeting' along with replies.	<del>CL 8_10</del>	OK



E.1.5. Has due account been taken of any stakeholder comments received?	VVM Para. 128-129 PDD Section E.3	/DR/	Section E.2 briefs that clarification where provided on the issues raised.	<del>CL 8_10</del>	OK
E.1.6. How the team validated the adequacy of stakeholder consultation?	VVM Para. 130	/DR/	Onsite team has referred Attendance sheet , Stakeholder consultation and invitation advertisement documents, And the same documents where requested.	<del>CAR 7(A,B,C), CL 8_10</del>	OK

## Annex 2: Detailed Findings

### Nature of findings:

Total Number raised	CARs	CLs	FARs
	07	04	-

Date	Type & Number	Raised by	Reference
16/01/2012	CAR#1	Validation Team	Validation Protocol
<b>Non conformities raised</b>			
Reference of 'Guidelines on assessment of de-bundling for SSC project activities' i.e. annex 13 of EB 54 in section A.4.5 of the PDD has not been provided.			
<b>Project participant response</b>		<b>Date:</b> 29/01/2012	
The reference of 'Guidelines on assessment of de-bundling for SSC project activities' i.e. annex 13 of EB 54 in section A.4.5 of the PDD to confirm that the project activity is not a debundled component of a large scale project activity is included in the revised PDD.			
<b>Documentation Provided as Evidence by Project Participant</b>			
PDD_30_12			
<b>Information Verified by Lead Assessor</b>		<b>Date of review:</b> 2/2/2012	
Based on the response provided by the PP this point is CLOSED as appropriate para & reference of 'Guidelines on assessment of de-bundling for SSC project activities' has been provided in the section A.4.5 of the revised Draft PDD. And same can also be checked from the self declaration provided by PP as dated on 9/12/2011.			
<b>Reasoning for not acceptance or close out</b>			
Same as above			
<b>Date of acceptance or non-acceptance</b>		<b>Date:</b> 2/2/2012	<b>Status:</b> CLOSED

Date	Type & Number	Raised by	Reference
16/01/2012	CAR# 2	Validation Team	Validation Protocol
Non conformities raised			
Appropriate reference of the methodology provided in section B.1 of the PDD has not been provided.			
Project participant response		Date: 29/01/2012	
The reference of the methodology is corrected in section B.1 of the PDD by providing the link of methodology from UNFCCC website.			
Documentation Provided as Evidence by Project Participant			
PDD_30_12			
Information Verified by Lead Assessor		Date of review: 2/2/2012	
Revised PDD			
Reasoning for not acceptance or close out			
The CAR 2 can be closed as the reference of the Methodology has been provided.			
Date of acceptance or non-acceptance		Date:2/2/2012	Status: CLOSED

Date	Type & Number	Raised by	Reference
16/01/2012	CAR# 3	Validation Team	4.5.1, 4.5.2
Non conformities raised			
Supportive documents and confirmation, that the installed capacity of the project activity will not increase beyond the limit provided for Type 1 project activity i.e. 15 megawatt (MW) as mentioned in Section B.2 of the PDD. [Refer Section iii (a) of Annex 21 of EB 61].			
Project participant response		Date: 29/01/2012	
The reference of the total installed capacity is 2.1 MW; which is the Purchase Order copy placed on Suzlon is included in the revised PDD.			
Documentation Provided as Evidence by Project Participant			

PO		
Information Verified by Lead Assessor	Date of review: 2/2/2012	
See below		
Reasoning for not acceptance or close out		
The CAR is closed as PP has provided the justification in the 3 <sup>rd</sup> Applicability condition along with PO (WTG SND 101 & SND103) as dated on 24/02/2011 along with Cancellation of PO of SND 103 as dated on 04/06/2011.		
Date of acceptance or non-acceptance	Date: 2/2/2012	Status: CLOSED

Date	Type & Number	Raised by	Reference
16/01/2012	CAR#4	Validation Team	Validation Protocol
Non conformities raised			
With reference to Section B.5 of the PDD, Compliance of project activity with the national and sectoral policies (E+ and E- policies) has not been provided <i>refer Guidelines for Completing the Simplified Project Design Document (CDM-SSC-PDD) and The Form for Proposed New Small Scale Methodologies (CDM-SSC-NM), version 05 and EB 22, Annex 3.</i>			
Project participant response		Date: 29/01/2012	
The national and sector policies are summarized in section B.5 of the revised PDD.			
Documentation Provided as Evidence by Project Participant			
Revised PDD			
Information Verified by Lead Assessor		Date of review: 2/2/2012	
Revised PDD			
Reasoning for not acceptance or close out			
Based on the response provided this point is closed.			
Date of acceptance or non-acceptance		Date: : 02/02/2012	Status: CLOSED

Date	Type & Number	Raised by	Reference
16/01/2012	CAR#5	Validation Team	Validation Protocol
<b>Non conformities raised</b>			
As per Guidelines for Completing the Simplified Project Design Document (CDM-SSC-PDD) and The Form for Proposed New Small Scale Methodologies (CDM-SSC-NM), version 05 and EB 22, Annex 3			
a) Equation used for determination of expected Ex-Ante calculation of emission reductions (baseline, project and leakage emission) is in-consistent, among the Section B.6.1 and Section B.6.3 of the PDD.			
b) The format of the Years used for specifying crediting period is in-consistent among the Section A.4.3 and Section B.6.4 of the PDD.			
<b>Project participant response</b>		<b>Date:</b> 29/01/2012	
The equation used for the calculation of the CO <sub>2</sub> Emission Factor of grid in year y; t CO <sub>2</sub> e/MWh is included in Section B.6.3 of the revised PDD.			
The format of the years is made consistent in the revised PDD.			
<b>Documentation Provided as Evidence by Project Participant</b>			
<i>Please mention the document provided to KBS along with the above response</i>			
<b>Information Verified by Lead Assessor</b>		<b>Date of review:</b> 2/2/2012	
- PDD_30_12			
<b>Reasoning for not acceptance or close out</b>			
Based on the response provided by the PP following point is closed as:-			
a) 'Equation used for determination of expected Ex-Ante calculation of emission reductions (baseline, project and leakage emission)' have been made consistent among the Section B.6.1 and B.6.3.			
b) 'Format of year' used for 'estimation of emission reductions' is consistent among the section A.4.3 and B.6.4.			
<b>Date of acceptance or non-acceptance</b>		<b>Date:</b> 2/2/2012	Status: CLOSED

Date	Type & Number	Raised by	Reference
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16/01/2012	CAR#6	Validation Team	Validation Protocol
Non conformities raised			
<p>(a) Source of data (Form B or Monthly billing records) which will be referred for the Net electricity generated by the project, as mentioned under B.7.1 is not consistent within the PDD.</p> <p>(b) 'X' and 'Y' Values required for calculation of 'EG<sub>T-E,y, Karnataka</sub>' need to be substantiated with supporting documents as mentioned in Pg 25 of Section B.7.1.</p> <p>(c) Accuracy class and recording frequency of meters used for determine the values of X &amp; Y, as mentioned in Pg 25 of Section B.7.1 has not been substantiate.</p> <p>(d) During site visit it was found that the transmission losses are provided by KSEB and are not calculated which is against the description mentioned on Pg 25 of Section B.7.1.</p> <p>(e) Justification for considering half hourly recording of the electricity generated as mentioned in 2<sup>nd</sup> paragraph of Section B.7.2 of the PDD has not been provided.</p> <p>(f) Based on description illustrated in B.7.2, the generation renewable electricity by WEG is not line with the description provided in Schedule 6 of PPA and besides this, details Apportioning mechanism in not in line with the details mentioned in Article 6 PPA.</p> <p>(g) Value of Total Transmission losses 'EG<sub>T-E,y, Karnataka</sub>' associated with the project activity is Calculated, hence PP need to justify the basis of not considering in description of section B.7.2.</p>			
Project participant response		Date: 29/01/2012	
<p>a) The net electricity generation will be referred from Form B. The same is stated in the revised PDD. The parameter EG<sub>BL,y</sub> is calculated from the parameterrs electricity exported to the grid, the electricity imported from grid and the transmission losses. As the cross checking for the parameters used for the calculation of EG<sub>BL,y</sub> is included in the PDD, the cross checking procedures for EG<sub>BL,y</sub> are not included.</p> <p>b) The notations "X" and "Y" are deleted from the revised PDD.</p> <p>d) The transmission loss provided by ESCOM is included as the source in the revised PDD.</p> <p>e) The statement for considering the Half Hourly recording is deleted in the revised PDD.</p>			
Documentation Provided as Evidence by Project Participant			
Revised PDD			
Information Verified by Lead Assessor		Date of review: 2/2/2012	
Revised PDD_30_12			
Reasoning for not acceptance or close out			
<p>a) Based on the response provided by the PP following point is Closed as PP has been made details Net electricity generated by the project, consistent in the various section B.7.1 along with the source of Data (form B) which is used for referring the losses or electricity[Import/export] generated by the project and the same can be checked from Invoices raised by PP.</p> <p>b) Based on the response provided by the PP following point is closed. As PP has modified the statement as now mentioned at page 28 of the PDD.</p> <p>c) No response provided. Open.</p> <p>d) Based on the response provided by the PP following point is Closed, as PP has modified the statement as now mentioned at page 29 of the PDD.</p> <p>Based on the response provided by the PP following point is Closed as PP has modified the statement as now been modified in the PDD.</p> <p>e) No response provided. Open.</p> <p>f) No response provided. Open.</p> <p>g) .No response provided. Open.</p>			
Date of acceptance or non acceptance		Date:2/2/2012	Status: OPEN
Project participant response		Date: 21/05/2012	
<p>c) The transmission losses are reported in the Form B issued to project proponent by ESCOM. The transmission losses are calculated using the bulk meter which also records the electricity generated by the WTG's located in the wind farm. The meter details are not included as the same is not under the purview of the PP.</p> <p>f) The apportioning is done for the calculation of the transmission losses. The transmission losses are deducted from the electricity generation readings of the meter installed at the project site in accordance with the Article 6 of the PPA. The electricity generation readings are calculated as the difference of the export and import readings. The same is described in the PDD. As the Form B issued by the ESCOM to the PP directly</p>			

gives the readings of the transmission losses, the description of the mechanism used in arriving the transmission losses is not described in the PDD.		
g) The transmission losses are provided in the Form B issued by the ESCOM to the PP. The transmission losses as provided in the Form B are used for the emission reduction calculation. The transmission losses as provided in Form B issued by the ESCOM is also cross checked with the invoices raised by the PP. Hence as the Transmission losses are directly sourced from the Form B which is authentic source of data provided by the ESCOM, hence the calculation procedure is not detailed in the section B.7.2.		
<b>Documentation Provided as Evidence by Project Participant</b>		
Revised PDD _19_05		
<b>Information Verified by Lead Assessor</b>	<b>Date of review:</b> 1/6/2012	
Revised PDD _19_05		
<b>Reasoning for not acceptance or close out</b>		
c) Team has accepted the response, but PP need to provide the description of Transmission Loss along with equation(X &Y) used to arrive at the $EG_{T-E,y,Karnataka}$ .		
f) Team has accepted the response, but PP needs to provide the apportioning Equation (X, Y) in Section B.7.2 and annex 4.		
g) Team has accepted the response, but PP need to provide the reference of article 6 of PPA has not been provided in measurement & procedure section of B.7.2.		
<b>Date of acceptance or non acceptance</b>	<b>Date:</b> 1/6/2012	<b>Status:</b> OPEN
<b>Project participant response</b>	<b>Date:</b> 30/07/2012	
c) The description of the transmission loss along with the equation is incorporated in section B.7.2 of the PDD		
f) The apportioning equation is provided in the section B.7.2 of the revised PDD.		
g) The reference for the article 6 of PPA is provided in the section B.7.2 of the revised PDD.		
<b>Documentation Provided as Evidence by Project Participant</b>		
Revised PDD _30_07_2012		
<b>Information Verified by Lead Assessor</b>	<b>Date of review:</b> 1/8/2012	
Revised PDD _30_07_2012_v5		
<b>Reasoning for not acceptance or close out</b>		
The response has been found satisfactory for all the issues raise now and thus, the finding is closed out.		
<b>Date of acceptance or non acceptance</b>	<b>Date:</b> 1/8/2012	<b>Status:</b> CLOSED

Date	Type & Number	Raised by	Reference
16/01/2012	CAR#7	Validation Team	Validation Protocol
Non conformities raised			
a) Invitation of Stakeholders during local stakeholder consultation should be substantiate with the supporting documents, as mentioned in Section E.1 of the PDD.			
b) Comments made by the concerned local stakeholders have not been transparently provided in Section E.2 of the PDD.			
c) Archiving of comment received should be in Section E.3 as mentioned in Section E.2.			
Project participant response		Date: 29/01/2012	
The supporting document for the invitation of the stakeholder document vis-à-vis the advertisement in the news paper is submitted to the DOE. The local stakeholders those having made the comments are identified and included in the revised PDD. The replies provided by the PP in response to the queries raised by the stakeholders are reported in section E.3			
Documentation Provided as Evidence by Project Participant			
<ul style="list-style-type: none"><li>- News_Paper_cutting.</li><li>- Attendance sheet (22/3/2011)</li></ul>			
Information Verified by Lead Assessor		Date of review: 2/2/2012	
<ul style="list-style-type: none"><li>- <a href="https://cdm.unfccc.int/Projects/Validation/DB/MOL070UVQ23AYY81ZXPIZHGXJCKHIT/view.html">https://cdm.unfccc.int/Projects/Validation/DB/MOL070UVQ23AYY81ZXPIZHGXJCKHIT/view.html</a></li><li>- News_Paper_cutting</li><li>- Attendance sheet (22/3/2011)</li></ul>			
Reasoning for not acceptance or close out			
a) Based on the response provided by the PP above point is closed as scan copy of Newspaper cutting			



<p>from local newspaper required for 'Invitation of Stakeholders during local stakeholder consultation' has been provided, which was conducted on 22/03/2011. Besides this, date is before GSC 25/10/2011. Same can be checked from the project view.</p> <p>b) Based on the response provided by the PP above point is closed as PP has updated the section E.2 of PDD with 'Comments made by the concerned local stakeholders' and have also provided the attendance sheet (22/03/2011) in support of LSC.</p> <p>c) Based on the response provided by the PP following point is Closed as PP has archived the section E.3 PDD with 'comment received'.</p>		
<b>Date of acceptance or non acceptance</b>	<b>Date: 5/03/2012</b>	<b>Status: CLOSED</b>

Date	Type & Number	Raised by	Reference
16/01/2012	CL#8	Validation Team	Validation Protocol

#### Non conformities raised

The following documents are to be submitted to Validation Team:-

- I). Host Country Approval issued by DNA of India
- II). Modalities of Communication.
- III). Proof of starting date of CDM project activity, dated 03/01/2011
- IV). Proof of start of commercial operation of the project.
- V). Proof of prior consideration of CDM (information to UNFCCC Secretariat).
- VI). Proof of the investment decision of this project activity with CDM consideration.
- VII). Purchase Orders related to the project activity including lease agreement for land and O&M agreement with the WTGs supplier
- VIII). Proof of Conformity of PLF as per Annex 11, EB 48
- IX). Power Purchase Agreement of PP with the ESCOM b/w MWP & GESOM on 15/03/2011.
- X). Relevant proofs of local stakeholder consultation process.
- XI). Proof of Operational and management structure for implementation and monitoring of project activity.
- XII). Statuary clearances:
- XIII). Proof of the Proof of the proprietorship firm
- XIV). Technical specifications for key equipment (including proof for capacity of 2100 kW Suzlon Make WTG and life time provided by the equipment manufacturer),
- XV). Training documents.
- XVI). Key photographs of the current site activities along with photographs of the name plates of generating equipments
- XVII). Declaration for non diversion of ODA funding for the project activity by MWP
- XVIII). Quotation provided to Malaxmi Wind Power by Suzlon Energy Limited
- XIX). Note on the Project submitted for the investment decision to the Proprietor
- XX). O & M contractual document.
- XXI). Generation report of electricity from WTG's since commissioned.
- XXII). Annual report of the PP from the Time of Decision making.

#### Project participant response

**Date: 29/01/2012**

1. The PDD and PCN have been uploaded for Host Country Approval. The same will be submitted as soon as received.
2. The modalities of communications will be submitted at the time of RFR due to the number of revisions happening in the MOC.
3. The Purchase Order for the project activity has been submitted to the DOE during the site visit
4. The commissioning certificate indicating the commissioning date for the project activity has been submitted during the site visit.
5. The proof of the prior consideration mail sent to UNFCCC and the Indian DNA is submitted to the DOE during the site visit
6. Proof of the investment decision of this project activity with CDM consideration is submitted to the DOE during the site visit.
7. The lease agreement for land is being submitted as Annex\_land. The O&M agreement has not yet been signed as the WTG is still covered under the free O&M.
8. The third party PLF report for the Proof of Conformity of PLF as per Annex 11, EB 48 has been submitted to the DOE during the site visit.

9. Power Purchase Agreement with the ESCOM has been submitted to the DOE during the site visit.
10. Relevant proofs of local stakeholder consultation process has been submitted to the DOE during the site visit.
11. Proof of Operational and management structure for implementation and monitoring of project activity is being submitted as Annex\_operation\_management
12. All the relevant statutory clearances are submitted to the DOE during the site visit.
13. Proof of the proprietorship firm name as per the VAT Registration certificate is submitted to the DOE during the site visit.
14. Technical Specification of the 2100 kW Suzlon mate WTG is submitted as Annex\_specifications
15. The training plan for the project activity is submitted as Annex\_training
16. The declaration of non diversion of ODA, quotation provided to Malaxmi Wind Power has been submitted to the DOE during the site visit
17. The project note submitted for investment decision submitted to the Proprietor forms the part of the investment decision by the management which was submitted to the DOE during the site visit.

**Documentation Provided as Evidence by Project Participant**

*Annex\_land, Annex\_operation\_management, Annex\_training, Annex\_specifications.*

**Information Verified by Lead Assessor**

**Date of review:** 5/3/2012

- Malaxmi wind power Undertaking
- purchase order (MWP/KTK/SEL/001) dated 03/01/2011,
- Commissioning Certificate [CEE(TA& QC/SEE/(PLG)/EE(PLG)/KCO-93/26245/F-8891-17/12879-92 ] issued by KPTCL on 31/3/2011
- DNA\_intimation on 12/05/2011
- DNA\_acknowledgement on 16/05/2011.
- UNFCCC\_intimation on 12/05/2011.
- UNFCCC\_confirmation on 13/05/2011.
- Investment Decision on 16/12/2010.
- Land lease agreement between KREDL and MWP on 28/12/2011.
- Free 2years O&M agreement between MWP & Suzlon, same can be checked from Pg 4 Point 8 of purchase order (MWP/KTK/SEL/001) dated 03/01/2011
- "TWIC Report for PLF Certification( PLFD/2010-11/MD-198)" on 12/12/2010
- PPA-Malaxmi Wind Power-SND 101' ie.. PPA b/w MWP & GESOM on 15/03/2011
- Resp and Authority Letter of key persons' on 20/12/2011.
- KREDL approval - SND101 as on 31/1/2011.
- Approval from Electrical Inspectorate i.e. Elec. inspectorate approval sld on 17/3/2011
- R VAT Reg Cert ie..'Form Certificate of Registration issued as on 18/09/2011 .
- S-88, 'Annex\_technical\_specifications'
- 'ODA Self Declaration of MWP as on 9/12/2011.
- Quotation of Malaxmi wind power Proposal' on 09/12/2010.
- Axis Bank, Revised Term Loan 7.5C on 1/7/2011

**Reasoning for not acceptance or close out**

- I). Based on the response provided by the PP, this point is NOT CLOSED as PP has yet to submit the LoA.
- II). Based on the response provided by the PP, this point is NOT CLOSED as PP has yet to submit the MoC.
- III). Based on the response provided by the PP, this point is **closed** as PP has provided purchase order (MWP/KTK/SEL/001) dated 03/01/2011, which is consistent with the C.1.1 of the PDD. And same can be checked from file POs
- IV). Based on the response provided by the PP, this point is **closed** as PP has provided Commissioning Certificate issued by KPTCL on 31/3/2011.
- V). Based on the response provided by the PP, this point is **closed** as PP has provided following supporting documents as a 'Proof of prior consideration of CDM':
  - a) DNA\_intimation on 12/05/2011.
  - b) DNA\_acknowledgement on 16/05/2011.
  - c) UNFCCC\_intimation on 12/05/2011.
  - d) UNFCCC\_confirmation on 13/05/2011

<p>VI). Based on the response provided by the PP, this point is closed as PP has provided 'Proof of the investment decision of this project activity with CDM consideration' as dated 16/12/2010. And same can be checked from document of Investment Decision</p> <p>VII). Based on the response provided by the PP, this point is <b>closed</b> as PP has provided following supporting documents.</p> <p>a) Land lease agreement between KREDL and MWP on 28/12/2011.</p> <p>b) Free 2years O&amp;M agreement between MWP &amp; Suzlon, same has been checked from Pg 4 Point 8 of purchase order (MWP/KTK/SEL/001) dated 03/01/2011</p> <p>VIII). Based on the response provided by the PP, this point is closed as PP has provided "TWIC Report for PLF Certification (PLFD/2010-11/MD-198)" as a proof of PLF conformity as dated on 12/12/2010.</p> <p>IX). Based on the response provided by the PP, this point is closed as PP has provided 'PPA-Malaxmi Wind Power-SND 101' ie.. PPA b/w MWP &amp; GESOM on 15/03/2011.</p> <p>X). Based on the response provided by the PP, this point is closed.</p> <p>XI). Based on the response provided by the PP, this point is closed as PP has provided 'Responsibility and Authority Letter of key persons' as self Declaration as Issued on 20/12/2011.</p> <p>XII). Based on the response provided by the PP, this point is <b>closed</b> as PP has provided following supporting documents:-</p> <p>1) KREDL approval - SND101 as on 31/1/2011.</p> <p>2) Approval from Electrical Inspectorate i.e. Elec. inspectorate approval sld on 17/3/2011</p> <p>XIII). Based on the response provided by the PP, this point is <b>closed</b> as PP has provided R VAT Reg Cert ie.. 'Form Certificate of Registration issued as on 18/09/2011'.</p> <p>XIV). Based on the response provided by the PP, this point is closed; as PP has provided the technical specifications of WTGs.</p> <p>XV). Based on the response provided by the PP, this point is closed; as PP has provided.</p> <p>XVI). Based on the response provided by the PP, this point is NOT closed as photographs of the name plates of generating equipments have not been provided.</p> <p>XVII). Based on the response provided by the PP, this point is closed as PP has provided a Self Declaration for the project activity as on 9/12/2011.</p> <p>XVIII). Based on the response provided by the PP, this point is closed; as PP has provided 'Malaxmi wind power Proposal' as a proof of Quotation provided to Malaxmi Wind Power by Suzlon Energy Limited on 09/12/2010.</p> <p>XIX). Based on the response provided by the PP, this point is closed; as PP has provided 'Axis Bank, Revised Term Loan' as Note on the Project submitted for the investment decision to the Proprietor as on 1/7/2011.</p> <p>XX). Based on the response provided by the PP, this point is closed; as PP has provided on Pt10, Pg 22 of purchase order.</p> <p>XXI). Response still awaited from PP.CL is open</p> <p>XXII). Response still awaited from PP.CL is open</p>		
<b>Date of <del>acceptance</del> or non acceptance</b>	<b>Date: 5/3/2012</b>	Status: <i>OPEN</i>
<b>Project participant response</b>	<b>Date: 14/4/2012</b>	
PDD has been updated and supportive documents have been provided.		
<b>Documentation Provided as Evidence by Project Participant</b>		
Annex_photos		
<b>Information Verified by Lead Assessor</b>	<b>Date of review: 1/5/2012</b>	
Annex_photos		
<b>Reasoning for not acceptance or close out</b>		
<p>i) Based on the response provided by the PP, this point is open as PP has not submitted the LoA.</p> <p>ii) Based on the response provided by the PP, this point is open as PP has not submitted the MoC.</p> <p>xiv) Based on the response provided by the PP, this point is closed as PP has provided the on site photos. Based on which following can be concluded:-</p>		

Make: LT(ER 300P)		
Type:- 3 phase, 4 wire, Electronic Tri vector Meter		
Class:- 0.2s for Active & 0.5s for Reactive		
S/n:- MAIN :-09142755 & CHECK:-09142751.		
xxi) Response still awaited.		
xxii) Response still awaited		
<b>Date of <del>acceptance or non acceptance</del></b>	<b>Date: 1/5/2012</b>	<b>Status: OPEN</b>
<b>Project participant response</b>	<b>Date: 21/05/2012</b>	
1. The LoA for the project activity is submitted as Annex_LoA		
2. The MoC for the project activity is submitted as Annex_MOC		
22.. The electricity generation report since commissioning is submitted as Annex_ generation		
24. The proprietorship firm didn't have annual report at the time of decision making. The annual report for the subsequent year is submitted as Annex_annualreport		
<b>Documentation Provided as Evidence by Project Participant</b>		
Annex_LoA, Annex_MOC, Annex_generaiton, Annex_annualreport		
<b>Information Verified by Lead Assessor</b>	<b>Date of review: 1/6/2012</b>	
Annex_LoA, Annex_MOC		
<b>Reasoning for not acceptance or close-out</b>		
I). Project Title mentioned in HCA issued by DNA of India is not in line with the project title mentioned in PDD. Moreover the project title mentioned in the prior intimation to UNFCCC is different from the title mentioned in PDD and HCA. CL is open.		
II). Team has not accepted this point, refer the point above CL08 (1).		
XXII). Team has reviewed the response and has accepted the justification and document provided for electricity generation report.		
XXIV). Team has reviewed the response and has accepted the justification and document provided for Annual report.		
<b>Date of <del>acceptance or non acceptance</del></b>	<b>Date: 1/6/2012</b>	<b>Status: OPEN</b>
<b>Project participant response</b>	<b>Date: 30/07/2012</b>	
I). The title in the PDD is revised to be in consistent with the HCA issued by the Indian DNA. The title mentioned in the prior intimation to UNFCCC was for 2 WTG's each of 2.1 MW capacity at locations SND 101, SND 103. However the manufacturer couldn't commission the WTG at SND 103 by 31 <sup>st</sup> March 2011, hence the PP had to cancel the Purchase Order for the WTG at location SND 103. Subsequently the PDD has been developed only for one WTG at location SND 101. Hence the title for the PDD is different from the title mentioned in the prior intimation form to UNFCCC.		
II). The revised MOC for the project activity is submitted as Annex_MOC_1.		
<b>Documentation Provided as Evidence by Project Participant</b>		
PDD_30_07_2012		
<b>Information Verified by Lead Assessor</b>	<b>Date of review: 1/8/2012</b>	
- PDD_30_07_2012		
- Annex_LOA		
- Annex_MOC		
<b>Reasoning for not acceptance or close-out</b>		
I). Team has reviewed the response and not accepted it as title of the webhosted PDD is not consistent with the HCA. However as per para 50 of VVM, the title of the PDD along with various version could be indicated in section A.1 of the revised PDD along with justification for changing it.		
II). Team could not review the response as revised MOC (Annex_MOC_1) have not been provided.		
<b>Date of acceptance or non acceptance</b>	<b>Date: 1/8/2012</b>	<b>Status: Open</b>
<b>Project participant response</b>	<b>Date: 2/8/2012</b>	

1) The title of the PDD has been revised to "Wind Power Project in Karnataka India" to maintain the consistency of the title with HCA from Indian DNA. The same has been included in section A.1 of the revised PDD.		
2) The revised MOC for the project activity is submitted as Annex MOC.		
<b>Documentation Provided as Evidence by Project Participant</b>		
Annex MOC		
<b>Information Verified by Lead Assessor</b>	<b>Date of review:</b> 22/8/2012	
Annex MOC PDD_02_08_2012		
<b>Reasoning for not acceptance or close out</b>		
<p>I). Team has reviewed and accepted the response as title has been made consistent with the PDD and version have been mentioned in section A.1 of PDD. The geographical coordinates were validated to confirm the uniqueness of project from the prior intimation sent to UNFCCC and the same were verified during site visit. Based on the validated geographical coordinates, assessment team confirms that the project activity is the same project activity to which PP had intimated the UNFCCC and DNA for the serious consideration of CDM. Moreover the geographical coordinates mentioned in the PLF assessment also reveals the uniqueness of project activity.</p> <p>II). Team has reviewed and accepted the response as title of MOC is made consistent with title mentioned in section A.1 of PDD.</p>		
<b>Date of acceptance or non acceptance</b>	<b>Date:</b> 22/8/2012	<b>Status:</b> CLOSED

Date	Type & Number	Raised by	Reference
16/01/2012	CL#9	Validation Team	Validation Protocol
Non conformities raised			
1] Clarification is sought for considering current project IRR (chosen) as suitable financial indicator for the project activity as mentioned in para 4 of Investment Barrier in Section B.5 of the PDD.			
2] Support document for determination of Emission reduction, CM, BM and OM has not been provided. Refer VVM Para. 67c, 89-90, 93.			
3] Clarification along with support document is sought as the capacity of the project activity considered is not in line with the management decision and prior intimation submitted to UNFCCC.			
Project participant response		Date: 29/01/2012	
1] The purpose of the project IRR calculation is to determine the viability of the project to service debt. As 70% of the project cost is serviced by Debt, hence Project IRR is considered appropriate financial indicator to assess the financial viability of the project activity. The same is included in the revised PDD.			
Documentation Provided as Evidence by Project Participant			
IRR sheet			
Information Verified by Lead Assessor		Date of review: 7/3/2012	
-IRR sheet			
Reasoning for not acceptance or close out			
1] Based on the response provided by the PP the above CL is closed. As PP has justified that the project IRR calculation is to determine the viability of the project to service debt. And for this project 70% of the project cost is serviced by Debt. Hence Project IRR is considered appropriate financial indicator to assess the financial viability of the project activity.			
2] Response awaited.			
3] Response awaited.			
Date of acceptance or non acceptance		Date: 7/3/2012	Status: OPEN
Project participant response		Date: 21/05/2012	
The supporting for the Emission reduction calculation along with the calculation of OM, BM and CM is submitted as Annex_CER			
Documentation Provided as Evidence by Project Participant			
Annex_CER			
Information Verified by Lead Assessor		Date of review: 1/6/2012	

Annex_CER		
<b>Reasoning for not acceptance or close out</b>		
2] Team has accepted this point as emission reduction calculations along with the calculation of OM, BM and CM have been checked from Annex_CER.		
3] Response awaited.		
<b>Date of <del>acceptance or non acceptance</del></b>	<b>Date:</b> 1/6/2012	<b>Status:</b> OPEN
<b>Project participant response</b>	<b>Date:</b> 2/8/2012	
3] The PP had allotted the funding and made the management decision to install WTG of capacity 2.1 MW in Karnataka considering the GBI benefits and the CDM revenue from the installation of the 2.1 MW WTG. The management decision was based on the parameters (i.e. the expenses and cost reflection) of 2.1 MW WTG. The PP had placed the order for 2 numbers of 2.1 MW WTG at locations SND 101 and SND 103 assuming that the machines will be commissioned before 31 <sup>st</sup> march 2011. As the manufacturer couldn't commission the WTG at SND 103 by 31 <sup>st</sup> March 2011, the PP had to cancel the Purchase Order for the WTG at location SND 103. The cancellation of purchase order to Suzlon is submitted as Annex_cancellation_PO.		
<b>Documentation Provided as Evidence by Project Participant</b>		
Annex_Cancellation P.O		
<b>Information Verified by Lead Assessor</b>	<b>Date of review:</b> 22/8/2012	
MWP Board Investment Decision;2012.12.16		
Annex_Cancellation P.O		
<b>Reasoning for not acceptance or close out</b>		
3] Team has reviewed and accepted the response as PP has considered the 2.1 MW capacity in the Investment decisions.		
<b>Date of <del>acceptance or non acceptance</del></b>	<b>Date:</b> 22/8/2012	<b>Status:</b> CLOSED

Date	Type & Number	Raised by	Reference
16/01/2012	CL#10	Validation Team	Validation Protocol
<b>Non conformities raised</b>			
PP is to requested clarify following queries related to investment analysis in PDD and spreadsheet :			
I). Basis for consideration of administrative and overhead costs.			
II). Date of investment decision in PDD.			
III). Clarify whether source of considered interest rate is valid at the time of investment decision.			
IV). Valid Reference web link of KERC Order considered in the PDD.			
V). Interlinking of the values provided in IRR spreadsheet.			
VI). Clarification of considering 8760 hrs in the IRR spreadsheet.			
VII). Clarification for considering starting year for investment analysis as March 2010 instead of March 2011.			
VIII). As per the document reviewed on site the project was commissioned on 31/03/2011 then how O & M cost is considered from March 2012 instead from March 2013, as free period is of 2 years			
IX). Project IRR mentioned in PDD (9.74%) is inconsistent with the spreadsheet (8.21%)			
X). Substantiate with appropriate documents for considering the “Cost of capital “and “Cost of equity “in the spreadsheet.			
XI). Why source of “Working Capital Interest Rate” is not considered as KERC order instead of BPLR.			
XII). During site visit it was found that the evidence for considering PLF in PDD is inconsistent with the IRR sheet.			
<b>Project participant response</b>		<b>Date:</b> 29/01/2012	
I). Basis for consideration of admin and overhead costs is referred from the Investment decision by the Management to implement the project activity dated 16/12/2010 in the revised PDD.			
II). The investment decision date of 16/12/2010 is included in the revised PDD.			
III). The interest rate is sourced from the prime lending rate of SBI which is the leading banking institution of India published by Reuters India on 13/12/2010 which is available at the time of investment decision. Hence the source of considered interest rate in the revised PDD is valid at the time of investment decision taken			
IV). The reference weblink of KERC Order is provided in PDD.			
V). All the values provided in IRR spreadsheet are interlinked.			



<p>VI). The total operating days in a year correspond to 365 and the number of hours in a day corresponds to 24, hence the total operating hours in year is considered as 8760. The same is elaborated in the PDD.</p> <p>VII). The starting year for investment analysis is inadvertently considered as March 2010 instead of March 2011, the same is revised to March 2011 in the revised IRR sheet.</p> <p>VIII). O &amp; M cost is considered from March 2013, as free period is of 2 years in the revised IRR calculation sheet.</p> <p>IX). The project IRR is corrected in the PDD in conjecture with the value presented in the spread sheet.</p> <p>X). The “Cost of capital “, “Cost of equity “in spreadsheet are redundant, hence the same are deleted in the revised IRR calculation sheet.</p> <p>XI). The source of “Working Capital Interest Rate” is considered as KERC order instead of BPLR in the revised PDD.</p> <p>XII). The evidence for the substantiating the PLF is revised in the IRR spreadsheet and the PDD.</p>		
<b>Documentation Provided as Evidence by Project Participant</b>		
<ul style="list-style-type: none"> <li>- PDD_30_12</li> <li>- IRR_30_12</li> <li>- TWIC Report for PLF Certification ( PLFD/2010-11/MD-198)” on 12/12/2010.</li> <li>- Purchase order (PO:-MWP/KTK/SEL/001 as dated 03/01/2011)</li> <li>- Commission Certificate as dated 31/3/2011</li> </ul>		
<b>Information Verified by Lead Assessor</b>		<b>Date of review: 7/3/2012</b>
<ul style="list-style-type: none"> <li>- PDD_30_12</li> <li>- IRR_30_12</li> <li>- TWIC Report for PLF Certification ( PLFD/2010-11/MD-198)” on 12/12/2010.</li> <li>- Purchase order (PO:-MWP/KTK/SEL/001 as dated 03/01/2011)</li> <li>- Commission Certificate as dated 31/3/2011</li> </ul>		
<b>Reasoning for not acceptance or close out</b>		
<p>I) Based on the response provided by the PP the above CL is not closed. As PP as basis for considering it in Proprietorship firm Board Note i.e. ‘Investment in Wind Power in Karnataka’ dated on 16/12/2010 , has not been provided.</p> <p>II) Based on the response provided by the PP the above CL is closed. As PP has updated the pg 17 &amp; 19 of PDD, and same can be checked from board note ‘Investment in Wind Power in Karnataka’ as dated on 16/12/2010.</p> <p>III) Based on the response provided by the PP the above CL is closed. As PP has updated the footnote 12 provided on Pg 16 of PDD, which is before the date of investment decision (16/12/2010). And same can be checked from the link.</p> <p>IV) Based on the response provided by the PP the above CL is closed. As PP has updated the Pg 17 of PDD.</p> <p>V) Based on the response provided by the PP the above CL cannot be closed. As traceability of few formulae is still not clear in the revised IRR sheet.</p> <p>VI) Based on the response provided by the PP the above CL is closed.</p> <p>VII) Based on the response provided by the PP the above CL is closed. As IRR sheet (E20) has been revised by the PP.</p> <p>VIII) Based on the response provided by the PP the above CL is closed. As free period of 2 years of O &amp; M cost can be checked from Pg 4 point 8 of Purchase order (PO:-MWP/KTK/SEL/001 as dated 03/01/2011) &amp; Commission Certificate as dated 31/3/2011.</p> <p>IX) Based on the response provided by the PP the above CL is closed. As IRR (8.10) has been consistent among PDD (Pg 19) and IRR sheet (C102).</p> <p>X) Based on the response provided by the PP the above is CL is not closed. As basis of Debt –equity ratio (70:30) at the time of decision making is not reflecting in IRR (assumption) and PDD.</p> <p>XI) Based on the response provided by the PP the above is CL is not closed. As details of “Working Capital Interest Rate’ and BPLR w.r.t decision making date is to be reflected in PDD &amp; IRR sheet.</p> <p>XII) Based on the response provided by the PP the above CL is closed. As details of PLF can be checked from ‘TWIC Report for PLF Certification( PLFD/2010-11/MD-198)” on 12/12/2010</p>		
<b>Date of acceptance or non acceptance</b>		<b>Date: 7/3/2012</b> Status: <i>OPEN</i>
<b>Project participant response</b>		<b>Date: 24/02/2012</b>
<p>V) All the values provided in IRR spreadsheet are interlinked</p> <p>X) The basis of the debt equity ratio of 70:30 has already been provided in the IRR assumption sheet and the</p>		

PDD as the KERC Order "In the matter of Determination of Tariff in respect of Renewable Sources of Energy" dated 11/12/2009. The debt: equity ratio as considered by the commission is reported in page No. 03 of the order as 70:30. The loan processing charges add to the equity. XI) The details of the working capital interest rate and the BPLR which are sourced from the PLR as per the State Bank of India (also know as State Bank Advance Rate) as published on 13/12/2010 which was available at the time of decision making is incorporated in the revised PDD.		
Documentation Provided as Evidence by Project Participant		
PDD_02_08_2012_v6 IRR_03_08		
Information Verified by Lead Assessor	Date of review: 01/04/2012	
PDD_02_08_2012_v6 IRR_03_08		
Reasoning for not acceptance or close out		
V) Based on the response this point is closed as the values provided in IRR spreadsheet have been interlinked. X) Based on the response this point is not closed as per 'Pg 8 of 'KERC Order- In the matter of Determination of Tariff in respect of Renewable Sources of Energy..dated 11/12/2009" the debt: equity ratio is 70:30 which taken inconsistent with the value(64.69 : 35.31) mentioned on Pg 1of Axis bank Loan revision document, AXISB/HYD/RMG/2011-12/050; dated 1/7/2011. Hence clarification is sought for not considering it in sensitivity analysis due to variation in both the mentioned D:E ratios . XI) Based on the response this point is closed, as the link of working capital interest rate has been provided in PDD.		
Based on the review of assumptions considered in the IRR Sheet, following new clarifications have been raised:- XIII). PLF assumed for the project activity is very less in comparison to the KERC tariff order i.e. 26.4%. XIV). Current web link for GBI is not valid and also clarify is sought that how the calculation to 13.02 million is obtained based on GBI guidelines. XV). Support document to consider loan processing charges (assumed as 1% of the loan applied) at time of decision making along with parameters used for its calculation has not been provided. XVI). Support document for considering the Debt: Equity ratio is 70:30 at the time of decision making is to be provided. XVII). As per pg 13 of KERC project depreciation is considered as 7%, under SLM , which is not consistent with the value considered in assumption (C38) [5.24%] also with the income tax link(5.28%) provided. XVIII). Based on the desk review of assumptions considered in the IRR Sheet, it was observed that the appropriate link along with reference for considering 30% income tax is to be provided XIX). Based on the desk review of Assumptions considered in the IRR Sheet, as it was observed that the appropriate link with reference for considering O&M expenses [60days] in WORKING CAPITAL (B52) is to be provided, as the current reference of KERC order not clarifying the details of O &M expenses.		
Date of acceptance or non acceptance	Date: 01/04/2012	Status: OPEN
Project participant response	Date: 21/05/2012	
X) The IRR sheet considering the actual parameters in the loan sanction letter is submitted as Annex_loan to substantiate the additionality conclusion that the project activity is not feasible without the carbon revenue. XIII) It should be noted that the PLF used in tariff orders by the KERCs are not site specific rather represent the average value taken over multiple potential project sites in the Karnataka state. Thus, the investor usually does not rely on this figure during the investment decision. The project developer had done a third party site specific PLF study and had used the same data for PLF input value during the investment decision. It has also been observed that the actual first year generation PLF of 20.87% is also near to the estimated third party PLF study figure of 20.80%. We would also like to clarify that the load factor value given in regional tariff orders published by State Electricity Regulatory Commissions is not considered to be consistent with the guidelines for the reporting and validation of the plant load factor as per EB 48, annex 11. Thus, the input value from third party PLF study is appropriate. XIV) The revised working web link for the GBI scheme is incorporated in the revised PDD. The GB		



guidelines stipulates the “GBI will be provided at @ Re. 0.50 per unit of electricity fed into the grid with a cap of Rs.62 Lakh/MW.” Hence the maximum GBI benefit that can be availed is INR 62 Lakhs \* 2.1 MW = INR 13.02 Million.

XV) The link to substantiate the loan processing fee has been submitted to assessment team.

XVI) The Debt Equity ratio of 70:30 is sourced from KERC Order "In the matter of Determination of Tariff in respect of Renewable Sources of Energy" dated 11/12/2009. The reference for the same is provided as the web link in the PDD.

XVII) The depreciation rate is revised to 5.28% in accordance with the book depreciation rate as provided in the company's Act Schedule XIV.

XVIII) The appropriate references to the Indian Union Budget 2010-2011 presented on February 26, 2010 is included as the references for the Income Tax Rates in the revised PDD. Closed.

XIX) The KERC in its order dated 11/12/2009 stated only *‘two months bill can be considered as working capital requirement on a normative level’*. The bills also refer to the bills raised by the O&M contractor for the Operation and Maintenance Services. Usually the Operation and Maintenance charges are collected prior to the due date. Hence the O&M costs pertaining to the 2 months are also considered for the working capital requirement.

#### Documentation Provided as Evidence by Project Participant

Revised PDD and IRR sheet

#### Information Verified by Lead Assessor

Date of review: 21/05/2012

Revised PDD and IRR sheet

#### Reasoning for not acceptance or close out

X] Team has reviewed the response and accepted it. CL is closed.

XIII] KERC recommends general PLF which not the site specific PLF and PP has considered PLF of 20.8% which is site specific and has been supported by 3<sup>rd</sup> party PLF report, hence it is in conformity with EB48, Annex11. Moreover, the actual PLF achieved by Project activity in first year is also 20.87% which close to the value of PLF assumed by the PP. hence team has accepted this point.

XIV] Team has reviewed the 'IRR\_19\_05 spreadsheet' and has cross checked the calculation corresponding to GBI guidelines of 13.02 millions.

XV] Team has reviewed the response and accepted it by crosschecking the link provided.

XVI] Team has reviewed the response and accepted it by crosschecking the KERC tariff order.

XVII] Team has reviewed the response and accepted it.

XVIII] Team has reviewed the response and accepted it by crosschecking the link provided in PDD.

XIX] Team has reviewed the response and accepted it by crosschecking the KERC tariff order.

Date of acceptance or non acceptance

Date: 28/07/2012

Status: Closed

Date	Type & Number	Raised by	Reference
16/11/2012	CL#11	TR	Validation Protocol
Non conformities raised			
The project activity is conceptualized with the installation of 2 WTGs of 4.2 MW capacity at the time of decision making and the financial analysis is carried out on actual implementation i.e. for 01 WTG of 2.1 MW; clarify how this approach is in line to the guidance 06 of EB 62, Annex 05.			
Project participant response		Date:16/11/2012	
As the initial investment decision was conceived for the installation of 2 WTG's each of 2.1 MW in the state of Karnataka; Project IRR was also computed considering 2 WTG's each of 2.1 MW in line with guidance 06 of EB 62, Annex 05. The Project IRR works out to be 8.98% for the scenario of considering 4.2 MW as the installed capacity (i.e. 2 WTG's each of 2.1 MW) which is lower than the benchmark of 12.50%. The same is included in the section B.5 of the revised PDD. Further the Sensitivity Analysis considering 2 WTG's each of 2.1 MW (As conceived at the time of investment decision is also included in the revised PDD. Moreover the provision for the calculation of the Project IRR considering 2 WTG's of 2.1 MW is also included in the revised IRR sheet.			
Documentation Provided as Evidence by Project Participant			
Revised PDD, version 7.1, Revised IRR sheet			

<b>Information Verified by Lead Assessor</b>		<b>Date of review:</b> 17/11/2012	
As responded by PP the IRR sheet has been revised by adding the additional logic to compute the IRR based on the decision making and actual implementation; the sensitivity analysis has also been added on both scenarios. Assessment team has reviewed the revised PDD and IRR sheet and found the project is additional on both the scenarios. CL is closed.			
<b>Reasoning for not acceptance or close out</b>			
Same as above			
<b>Date of acceptance or non-acceptance</b>		<b>Date:</b> 17/11/2012	<b>Status:</b> CLOSED

### Annex 3: Certificate of Competence

<b>Personnel Name:</b>		<b>Sanjay Kandari</b>	
<b>Qualified to work as:</b>			
Team Leader	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>
Validator/Verifier	<input checked="" type="checkbox"/>	Financial Expert	<input type="checkbox"/>
Technical Reviewer	<input type="checkbox"/>	Local Expert (India)	<input checked="" type="checkbox"/>
<b>Area(s) of Technical Expertise</b>			
<b>Sectoral Scope</b>		<b>Technical Area</b>	
Energy industries (renewable/non-renewable sources)		TA 1.2: Energy generation from renewable energy sources	
Approved by (Manager C & T)		Mayank Kumar Jain	
Approval date:		09/02/2012	

<b>Personnel Name:</b>		<b>Ambuj Adhwaryu</b>	
<b>Qualified to work as:</b>			
Team Leader	<input type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>
Validator/Verifier	<input checked="" type="checkbox"/>	Financial Expert	<input type="checkbox"/>
Technical Reviewer	<input type="checkbox"/>	Local Expert (India)	<input checked="" type="checkbox"/>
<b>Area(s) of Technical Expertise</b>			
<b>Sectoral Scope</b>		<b>Technical Area</b>	
Energy Demand		TA 3.1 Energy Demand	
Approved by (Manager C & T)		Mayank Kumar Jain	
Approval date:		12 /12/2011	

<b>Personnel Name:</b>		<b>Abhishek Mahawar</b>	
<b>Qualified to work as:</b>			
Team Leader	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>
Validator/Verifier	<input checked="" type="checkbox"/>	Financial Expert	<input checked="" type="checkbox"/>
Technical Reviewer	<input checked="" type="checkbox"/>	Local Expert	<input checked="" type="checkbox"/>
<b>Area(s) of Technical Expertise</b>			

Sectoral Scope	Technical Area
Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources
Approved by (Manager C& T)	Mayank Kumar Jain
Approval date:	06/04/2012

Personnel Name:		Phool Chand	
Qualified to work as:			
Team Leader	<input type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>
Validator/Verifier	<input checked="" type="checkbox"/>	Financial Expert	<input type="checkbox"/>
Technical Reviewer	<input type="checkbox"/>	Local Expert (India)	<input checked="" type="checkbox"/>
Area(s) of Technical Expertise			
Sectoral Scope		Technical Area	
Energy industries (renewable/non-renewable sources)		TA 1.2: Energy generation from renewable energy sources	
Approved by (Manager C & T)		Mayank Kumar Jain	
Approval date:		12/12/2011	

Personnel Name:		Sunil Kathuria	
Qualified to work as:			
Team Leader	<input type="checkbox"/>	Technical Expert	<input type="checkbox"/>
Validator/Verifier	<input type="checkbox"/>	Financial Expert	<input type="checkbox"/>
Technical Reviewer	<input checked="" type="checkbox"/>	Local Expert (India)	<input type="checkbox"/>
Area(s) of Technical Expertise			
Sectoral Scope		Technical Area	
Not applicable		Not applicable	
Approved by (Manager C & T)		Mayank Kumar Jain	
Approval date:		10/09/2012	

#### History of the document

Version	Date	Nature of revision	Reviewed by	Approved by
2.0	31/12/2011	Comprehensively revised	Manager CDM Quality 31/12/2011	Managing Director 31/12/2011