

# VALIDATION REPORT

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**Sargam Retails Private Limited (SRPL)**

**13.75 MW wind power project in  
Davangere, Karnataka, India**

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**SGS Climate Change Programme**

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| <b>Date of Issue:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |              | <b>Project Number:</b>                                                                                                      |  |
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| <b>Project Title:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |              |                                                                                                                             |  |
| 13.75 MW wind power project in Davangere, Karnataka, India                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |                                                                                                                             |  |
| <b>Organisation:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              | <b>Client:</b>                                                                                                              |  |
| SGS United Kingdom Limited                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              | Sargam Retails Private Limited (SRPL)                                                                                       |  |
| <b>Publication of PDD for Stakeholders Consultation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |                                                                                                                             |  |
| <b>Commenting Period:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |              | 05/02/2009 to 06/03/2009                                                                                                    |  |
| First PDD Version and Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |              | Version 01, 27/01/2009                                                                                                      |  |
| Final PDD Version and Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |              | Version 02, 02/12/2009                                                                                                      |  |
| <b>Summary:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |                                                                                                                             |  |
| <p>Sargam Retails Private Limited (SRPL) has commissioned SGS to perform the validation of the project: 13.75 MW wind power project in Davangere, Karnataka, India.</p> <p>Methodology Used: AMS I D</p> <p>Version and Date: Version 15.0, EB 50 (Valid from 30/10/2009 onward)</p> <p>The scope of the validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and applicable CDM requirements.</p> <p>The report is based on the assessment of the project design document undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to document reviews, follow up actions (e.g. site visit, telephone or e-mail interviews) and also the review of the applicable simplified methodology and underlying formulae and calculations.</p> <p>The report and the annexed validation describes a total of (11) findings which include:</p> <ul style="list-style-type: none"> <li>• (09) Corrective Action Requests (CARs);</li> <li>• (02) Clarification Requests (CLs); and</li> <li>• (00) Forward Action Requests (FARs);</li> </ul> <p>All findings have been closed satisfactorily. The project will be recommended to the CDM Executive Board with a request for registration</p> |              |                                                                                                                             |  |
| <b>Subject:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              | <b>Document Distribution</b>                                                                                                |  |
| CDM Validation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |                                                                                                                             |  |
| <b>Validation Team:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              | <input checked="" type="checkbox"/> No Distribution (without permission from the Client or responsible organisational unit) |  |
| Abhishek Mahawar – Lead Assessor and Financial Expert<br>Nitin Babber – Assessor & Local Assessor<br>Harsh Raval - Sector Expert                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |              |                                                                                                                             |  |
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| Date: 08-10-2010<br>Name: Kaviraj Singh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |                                                                                                                             |  |
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| Name: Siddharth Yadav<br>Date: 12 <sup>th</sup> October 2010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |                                                                                                                             |  |
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## Abbreviations

|                          |                                                                                       |
|--------------------------|---------------------------------------------------------------------------------------|
| BM                       | Build Margin                                                                          |
| CAR                      | Corrective Action Request                                                             |
| CDM                      | Clean Development Mechanism                                                           |
| CEA                      | Central Electricity Authority                                                         |
| CEF                      | Carbon Emission Factor                                                                |
| CER                      | Certified Emission Reductions                                                         |
| CL                       | Clarification Request                                                                 |
| CM                       | Combined Margin                                                                       |
| CO <sub>2</sub>          | Carbon Dioxide                                                                        |
| CO <sub>2</sub> e        | Carbon dioxide equivalent                                                             |
| COP/MOP                  | Conference of the parties serving as the meeting of the parties to the Kyoto protocol |
| DNA                      | Designated National Authority                                                         |
| DOE                      | Designated Operational Entity                                                         |
| DR                       | Document Review                                                                       |
| EGy                      | Electricity Generated per year                                                        |
| EIA                      | Environmental Impact Assessment                                                       |
| ERU                      | Emission Reduction Units(s)                                                           |
| ERy                      | Emission Reduction per year                                                           |
| FAR                      | Forward Action Request                                                                |
| GHG                      | Green House Gas(es)                                                                   |
| GWP                      | Global Warming Potential                                                              |
| HCA                      | Host country Approval                                                                 |
| I                        | Interview                                                                             |
| IPCC                     | Intergovernmental Panel on Climate Change                                             |
| IRR                      | Internal Rate of Returns                                                              |
| JMR                      | Joint Meter Reading                                                                   |
| kg CO <sub>2</sub> e/kWh | Kilogram of Carbon dioxide equivalent per kilo watt hour.                             |
| KSEB                     | Karnataka State Electricity Board                                                     |
| kWh                      | Kilo Watt hour                                                                        |
| LOA                      | Letter of Approval                                                                    |
| MOC                      | Modalities of Communications                                                          |
| MP                       | Monitoring Plan                                                                       |
| MW                       | Mega Watt                                                                             |
| MWh                      | Mega Watt hour                                                                        |
| NGO                      | Non-governmental Organisation                                                         |
| ODA                      | Official Development Assistance                                                       |
| O&M                      | Operation and Maintenance                                                             |
| PDD                      | Project Design Document                                                               |
| PLF                      | Plant Load Factor                                                                     |
| PLR                      | Prime Lending Rate                                                                    |
| PP                       | Project Proponent                                                                     |
| QA/QC                    | Quality Assurance and Quality Control                                                 |
| RBI                      | Reserve Bank of India                                                                 |
| RES                      | Renewable Energy Source                                                               |
| SEB                      | State Electricity Board                                                               |
| SGS                      | Société Générale de Surveillance                                                      |
| SRPL                     | Sargam Retails Private Limited                                                        |
| UNFCCC                   | United Nations Framework Convention for Climate Change                                |
| WEG                      | Wind Electricity Generators                                                           |
| WTG                      | Wind Turbo-Generators                                                                 |

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## 1. Validation Opinion

SGS United Kingdom Ltd has been contracted by Sargam Retails Private Limited (SRPL) to perform a validation of the project: 13.75 MW wind power project in Davangere, Karnataka, India.

The Validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism (CDM), Validation and Verification Manual version 1 and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The purpose of this project activity is to generate electricity using renewable sources (wind) by installation of five Wind Turbo-Generators (WTGs) of 1.5 MW and five WTGs of 1.25 MW capacity each which adds up to make 13.75 MW in Davangere, Karnataka State, India and supplying the generated electricity to the Southern Grid (The southern grid covers four states and two Union Territories including the states of Tamil Nadu, Andhra Pradesh, Kerala and Karnataka), thereby displacing the grid generated electricity that is highly dependent on fossil fuel fired plants. The project activity will result in reductions of greenhouse gas emissions that are real, measurable and give long-term benefits to the mitigation of climate change.

In our opinion, the project meets all relevant UNFCCC, CDM criteria and all relevant host country criteria. The project correctly applies methodology AMS I D version 15. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The total emission reductions from the project are estimated to be 185325 tCO<sub>2</sub>e over a 7 year crediting period, averaging 26475 tCO<sub>2</sub>e annually. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given the underlying assumptions do not change.

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

**Signed on Behalf of the Validation Body by Authorized Signatory**



Signature:

Name: Siddharth Yadav

Date: 12<sup>th</sup> October 2010

## 2. Introduction

### 2.1 Objective

Sargam Retails Private Limited (SRPL) has commissioned SGS to perform the validation of the project: 13.75 MW wind power project in Davangere, Karnataka, India with regard to the relevant requirements for Clean Development Mechanism (CDM) project activities. The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP) and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reduction (CER). UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities and related decisions by the COP/MOP and the CDM Executive Board.

### 2.2 Scope

The scope of the validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. SGS has employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

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

### 2.3 GHG Project Description

The project activity proposed by Sargam Retails Private Limited (SRPL) involves the installation and operation of 10 wind electricity generators (WEG) located in Yaraganal and Kudurekonda Village, Honnali Taluka, Davangere District, Karnataka State, India. The total installed capacity of the project activity is 13.75 MW that comprises of 10 wind electricity turbines (WEG), five of 1.5 MW and five of 1.25 MW. The turbines are under contract with the supplier M/s SUZLON Energy Ltd. for their turn-key operation and maintenance. The power generated by the project is exported to the Southern regional grid, thus the project activity leads to reduced greenhouse gas emissions by displacing the electricity from fossil fuel dependent grid.

The project activity is already commissioned and the total estimated GHG reduction from the project activity of the project is expected to be 185325 t CO<sub>2</sub>e for the renewable seven year crediting period starting from 01/08/2010. The date of registration would be considered as the start date for the first crediting period. The project participants will not commence the crediting period prior to the date of registration.

The project follows applicability criteria for the chosen methodology (AMS ID –indicative simplified baseline and monitoring methodology “Grid connected renewable electricity generation “ version 15, EB 50 (Valid from 30/10/2009 onward)) as it provides grid-connected renewable power generation based on wind sources.

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

| Assessment Team  | Role                               |
|------------------|------------------------------------|
| Abhishek Mahawar | Lead Assessor and Financial Expert |
| Nitin Babber     | Assessor and Local Assessor        |
| Harsh Raval      | Sectoral Expert Scope 1            |

| Technical Review Team | Role                    |
|-----------------------|-------------------------|
| Kaviraj Singh         | Technical Reviewer      |
| Vikas Bankar          | Sectoral Expert Scope 1 |



### 3. Methodology

#### 3.1 Review of CDM-PDD and Additional Documentation

The validation is performed primarily as a document review of the publicly available project document version 01 dated 27/01/2009 and the subsequent version 02 dated 02/12/2009 (final version). The assessment is performed by trained assessors using a validation protocol attached as Annex 2 Table 2

The site visit was performed on 14/03/2009 – 15/03/2009. The results are summarised as Annexes in the validation report. The validation team has checked the statements mentioned in the PDD through review of the documents and contacts with stakeholders. All the additional background documents related to the project design, baseline and additionality were assessed during the validation.

#### 3.2 Use of the Validation Protocol

The validation protocol used for the assessment is designed in accordance with the Validation and Verification Manual, Version 1.2 dated 30<sup>th</sup> July 2010. It serves the following purposes:

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

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

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

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

#### 3.3 Findings

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

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

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

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

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

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

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

### **3.4 Internal Quality Control**

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

## 4. Validation Findings

### 4.1 Approval

The host party for this project is India. India has ratified the Kyoto protocol on 26/08/2002. A Letter of Approval from Indian DNA was not submitted by the project proponent. CAR 01 was raised asking the project proponent to submit the Letter of Approval from the Indian DNA. The project proponent has received the Host country approval for the present project activity on 29/09/2009 issued by the Indian DNA (reference number 4/4/2009-CCC) (/3/). This letter was checked by the validation team with the original copy and the project activity name and Project Participant name indicated in the HCA and in section A.1 of the PDD were found to be the same. The authenticity of the Host Country Approval was further cross-checked from the DNA website [http://cdmindia.in/reports\\_list\\_details.php?id=Karnataka&reporttype=2](http://cdmindia.in/reports_list_details.php?id=Karnataka&reporttype=2) (Project ID - 1356-09). The Letter of Approval clearly confirms that Government of India has ratified the Kyoto Protocol in August 2002; participation is voluntarily for the project activity and the project activity contributes to sustainable development of India. It has been confirmed that the LoA is unconditional with respect to party to the Kyoto Protocol, voluntarily participation, contribution towards sustainable development and title of the project activity. Thus Letter of Approval is in accordance with paragraphs 45-48 of the Validation and Verification Manual (VVM) and CAR 01 was closed.

### 4.2 Participation Requirements

The host Party for this project is India. India has ratified the Kyoto protocol on 26/08/2002. This was checked from the UNFCCC website <http://maindb.unfccc.int/public/country.pl?country=IN>.

The PP has provided the Host country approval letter as mentioned above in section 4.1. The project activity is being proposed as a unilateral project by Sargam Retails Private Limited (SRPL), which is the sole Project Participant. No Annex I Party has been identified in the PDD and therefore no further Letter of Approval was available. It is observed that the CDM EB has agreed that the registration of a CDM project activity can take place without an Annex I Party being involved at the stage of registration although it should be noted that before CERs can be transferred to an Annex 1 Party, a Letter of Approval from Annex 1 Party will need to be submitted.

CAR 02 was raised against the submission of the MOC I(13/) for validation. Upon the finding, the MOC was produced. The name of the person mentioned in the MOC and the correct latest version of the MOC as per EB 45 annex 60 was used and checked with the name mentioned in the PDD. The assessment team checked and verified the MOC and it was found to be matching and hence this was accepted. Thus CAR 02 was closed.

The proposed CDM project has been web hosted on the UNFCCC website <http://cdm.unfccc.int/Projects/Validation/DB/ML6GGQXE7I9A9990U8XIB024L6J7B/view.html> for global stakeholder's process to invite comment as per the CDM requirements. As per the CDM EB guidelines the proposed CDM project has been webhosted from 05/02/2009 to 06/03/2009.

### 4.3 Project Design Document including Project Description

The purpose of the project activity is to harness the renewable resources of wind power in Yaraganal and Kudurekonda Village, Honnali Taluka, Davangere District, Karnataka State, India and thereby enable displacement of non-renewable natural resources. The Activities which are involved are construction, operation and maintenance of wind energy based electric generators supplying electricity to the Karnataka state grid.

The PDD (/2/) was prepared in accordance with the 'Guidance for completion of the Project Design Document (CDM-SSC-PDD)' version 6.2 (/33/) and PDD template version 3. The PP had not mentioned much information as per the template requirement in the PDD which were raised as CAR 03. To address this issue the project participant has revised the PDD which was found to be as per the CDM-SSC-PDD template requirement, thus CAR 03 is closed.

The technology used in the project activity is the installation of 13.75 MW wind power project of which 5 WTGs of 1.5 MW (Suzlon S.82 make) and 5 WTGs of 1.25 MW (Suzlon S.64 make) capacities each. Out

of the ten numbers three WTGs are installed in Kudurekonda village and the remaining seven WTGs in Yaraganal village, in district Davangere in the state of Karnataka by Sargam Retails Private Limited (SRPL). The wind project will reduce the GHG emissions generated by the current generation energy mix in India's Power Grid, which is dominated by power generated from other conventional sources such as coal. The technology applied is deemed current good practice and is not expected to be replaced within the crediting period.

The technology used in the project is available in India and no transfer of technology is envisaged. The proposed project is expected to export a net amount of 28560 MWh to the Karnataka State Electricity Board (KSEB) per year, which is a part of the southern grid. Plant load factor of 23.74% for 1.25 MW WTGs and 27.39% for 1.5 MW WTGs is considered for the estimation gross generation by the project activity. This has been confirmed during the site visit by the validation team interviewing the WTG owner and the supplier of the WTGs regarding data submitted by the supplier. The purchase orders and specifications /19/ of wind turbine generator are submitted by the PP. The technical specifications and all the additional documents with website links for analysing the PLF in the region have been checked during the site visit and were found to be acceptable. The combined average PLF from both 1.5 MW and 1.25 MW turbines were calculated to 25.74% for the project activity of 13.75 MW.

Operational lifetime and the technical specifications mentioned for the project activity were checked with the purchase orders (/10/) and were found to be acceptable. This complies with the requirement of the EB50 annex 15. The operation lifetime was accepted as 20 years after reviewing the technical specifications for the project activity. The operation and maintenance is being carried out by M/s SUZLON Energy Ltd. and has proper procedures for providing training to its employee's (/23/). The ISO certificates specifying the scope and the controlled copy of ISO procedure (/22/), (/23/) from the supplier providing the O&M to the project activity were checked for the monitoring procedure and are acceptable.

No public funding (/21/) from parties is received as listed in Annex 1 of the PDD. All the parameters in the financing structure considered for project financial analysis is checked against the relevant documentary evidence and it was found to be satisfactory.

#### **4.4 Eligibility as a Small Scale Project**

The project activity is a new wind based electricity generating system connected to the regional southern grid and complies with the applicability criteria of the selected methodology AMS I.D. version 15 (/8/). The project electricity generation capacity is 13.75 MW which is less than 15 MW and is accordance to the UNFCCC directives established in this regard and same has been verified during the site visit by the validation team.

The PDD mentions that the PP does not have any other registered or applied for registration CDM project activities in the 1 km area from the present project activity by the same PP within 2 years in the same project category and technology. The project activity is not a de-bundled project activity as mentioned in the PDD; this has been checked through UNFCCC web site and during the site visit by the assessment team. The project activity is not a bundle of several small scale activities as per the PDD which has been checked during the site visit and was found to be satisfactory.

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

From the above discussion under section 4.4, it is clear that the proposed CDM project activity is a small scale project and it applies approved baseline methodology for small scale, AMS I.D version 15 to evaluate the amount of GHG emission reductions from the regional grid which would otherwise be emitted by fossil fuel based power plants in the grid which are highly fossil fuel dependent.

The project is a new installation of WEGs having a total capacity of less than 15 MW and does not involve in any addition or retrofit or modification and thus benign renewable energy (wind) generating unit qualifies the criteria of AMS I.D version 15.

CAR 03 was raised against the version 01 of the PDD on applying AMS I.D version 13. The PDD was revised to version 02 with the updated latest version of the methodology AMS ID version 15 and fulfilling all the requirements against it to the project activity. The PDD version 2 was checked and verified by the assessment team and was found to be acceptable. Therefore CAR 03 was closed.

#### 4.6 Project Boundary

As per the guidelines mentioned in the methodology AMS I.D, version 15, "The project boundary encompasses the physical, geographical site of the renewable generation source". The project activity will supply electricity to the southern grid. The project boundary includes the WTGs and southern grid which has been shown pictorially in the PDD. The monitoring meters are located at the feeder end and also at the sub station which is the part of the project boundary. SGS has verified the grid availability with CEA data /4/at the time of project development and has accepted the consideration of southern grid.

It was not addressed clearly in the PDD version 01 about the pictorial metering locations for the project activity WTGs. Thus CAR 07 was raised. The revised PDD, version 02 has been provided by the PP which reveals clear monitoring procedure. The revised PDD (version 2) was checked and verified by the assessment team and was found to be satisfactory. Hence, CAR 07 on the project boundary clarification was closed.

#### 4.7 Baseline Selection and Additionality

The project has applied baseline as mentioned in the approved small scale methodology AMS I.D, version 15 "Grid connected renewable electricity generation". The project activity is feeding power to the Karnataka State Electricity Board (KSEB) grid which is a part of southern regional grid of India and thus replaces electricity which would have been generated by fossil fuel dominated power plant and hence it is accepted. The baseline for the project remains to be the kWh produced by the renewable generating unit multiplied by an emission coefficient (measure in kg CO<sub>2</sub>e/kWh) calculated in a transparent and conservative manner as the combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the applicable methodology.

The project participant uses the latest version of CEA data available at the time of PDD submission for validation ([www.cea.nic.in/planning/c%20and%20e/user\\_guide\\_ver4.pdf](http://www.cea.nic.in/planning/c%20and%20e/user_guide_ver4.pdf)) for baseline determination.

The baseline emission factor is established ex-ante as per the "Tool to calculate the emission factor for an electricity system"/34/ and based on the operating and build margin emission coefficients for the southern regional grid published by the Central Electricity Authority (CEA) of India. The Central electricity authority, Ministry of Power, Government of India has published the database of carbon dioxide emission factors from the power sector in India based on detailed authenticated information obtained from all operating power stations in the country. This database provides information obtained from all operating power stations in the country. This database provides information about the OM and BM factors of all the regional electricity grids in India (/4/). The assessment team confirms that the database is an official publication of the Government of India for the purpose of CDM projects and that the OM in the CEA database is calculated ex-ante using the simple OM approach and the BM is calculated based on 20% most recent capacity additions in the grid based on net generation as described in the "Tool to calculate the emission factor for an electricity system". The average of the OM for the three years 2005-06, 2006-07, 2007-08 has been determined and verified to be 1.00 t CO<sub>2</sub>e/Mwh and the BM (2007-2008) to be 0.71 t CO<sub>2</sub>e/MWh. The weighted average of the "operating margin" and the "build margin" emission coefficient for southern regional grid of India has thus been determined to be 0.927 t CO<sub>2</sub>e/MWh (fixed ex-ante), using a OM:BM weight of 75:25 as recommended for wind projects in the "Tool to calculate the emission factor for an electricity system".

The discussion on baseline was not comprehensive in PDD section B.4 and there is no discussion on the identification of most likely baseline scenario in PDD version 01 and thus CAR 04 was issued. In response to that, the PP has updated the corrections in the final version of the PDD which has been checked from the PDD and found to be correct. The PP has defined the baseline and baseline emission calculation as per the AMS I D methodology, para 10 which has been reflected in the revised PDD and the emission factor used in the project activity is combined margin approach. Thus, CAR 04 were closed out.

| Emissions | GHGs involved   | Description                                                |
|-----------|-----------------|------------------------------------------------------------|
| Baseline  | CO <sub>2</sub> | For the net electricity displaced from the grid            |
| Project   | Nil             | No project emissions are envisaged in the project activity |
| leakage   | Nil             | No leakage envisaged in the project.                       |

Although national policies favour the development of renewable energy sources, the negligible contribution by renewable resource based power generation continues to prevail in spite of many governmental schemes to attract new investments into this sector. In spite of many fillip given by the Indian government, SGS was able to confirm that investment in the wind power sector is not common practice. Hence, it can be concluded that, India will remain dependant on fossil fuel energy for the next crediting period. (Source:

[http://www.cea.nic.in/power\\_sec\\_reports/Executive\\_Summary/index\\_Executive\\_Summary.html](http://www.cea.nic.in/power_sec_reports/Executive_Summary/index_Executive_Summary.html) ,  
<http://windpowerindia.com/statstate.html>./31/

CAR 05 was raised on the credibility of baseline data and the web links, the PDD was updated with the latest information to prove that wind power generation is not the common practice in the country and also in the region. Ministry of Power (govt. authority) clearly evident that only 9% is added by Renewable Energy Sectors (RES – including wind, solar, biomass, tidal and geothermal etc) projects to the total installed capacity in India. SGS has assessed the web link and confirms the data to be authentic as the data published is publically available and government owned data (Source: <http://www.cea.nic.in> ). CAR 05 was thus closed.

#### 4.7.1 Additionality

In accordance with paragraph 28 of the simplified modalities and procedures for small scale CDM projects (/6/), a simplified baseline and monitoring methodology listed in Appendix B may be used if the PP can demonstrate that the project activity would otherwise not be implemented due to the existence of one or more barrier(s) listed in the Attachment A to Appendix B. In the proposed CDM project activity, the PP has used investment barrier to demonstrate the additionality. All these barriers and its assessment are discussed below.

The financial calculations for the project activity have been discussed using the benchmark analysis, where in the project IRR is compared against the benchmark for the project 12.25%, taken as prime lending rate (PLR) provided by Reserve Bank of India (RBI) for the year 2008 (source: <http://rbidocs.rbi.org.in/rdocs/AnnualReport/PDFs/86591.pdf>) (/32/). RBI is the India's central bank and it regulates financial system in the country. It also works as a regulatory body for all banking system in the country. RBI publishes the interest rates on weekly basis, including prime lending rates related to five major banks of the country. All the figures in the financial analysis were evidenced with the supporting document and from web reference to SGS and the same is evident in PDD version 02 and the IRR sheet. The project activity financials on which the CDM decision was made were on the estimative market proposal figures (i.e. at the time of CDM decision for the project, the financial workout by the company considered the project cost and PLF as per the proposal, the tariff rate as per the prevailing market figure of the State Govt. KERC order, the interest rate as per the prevailing market price.). Financials were also carried for the project on actual values. Thus two financials were assessed by SGS during validation for the project viability.

It has been demonstrated that the project IRR for the project activity without any CDM revenues is estimated to be 9.20% which is lower than the benchmark of 12.25%. The financial analysis worksheets and the benchmarks have been evidenced and verified by SGS and found to be appropriate. All documents pertaining to the source of input values presented in the analysis have been verified by SGS from the following documents:

- Contracts for supply of the equipments /19/
- Contracts for erection and commissioning /14/
- Contracts for maintenance, service and availability /20/
- Proposal by equipment supplier on land, equipments, O & M /11/
- Insurance cost/12/,/29/
- PLF analysis /12/,/29/
- Moratorium /12/,/29/
- Technical specifications of WTGs /35/ and
- Corporate tax rate, Minimum Alternative tax rate and service tax. /29/
- IT Depreciation/29/
- PLR from RBI for the year./4/

- PPA agreement. /10/

As per the Guidance on the Assessment of Investment Analysis, Version 03, EB 51, Annex 58, in the project activity, benchmark analysis has been chosen as the analysis method and Prime Lending Rate (PLR) is used as the suitable benchmark. The PLR for the year 2007 - 2008 was ranging from 12.25% - 14% and at the time of financial decision (i.e August 2008, the PLR was varying from 12.75% - 14% <http://rbi.org.in/scripts/WSSView.aspx?Id=12696>). The minimum of 12.25% was considered as conservative benchmark for the year. (<http://rbidocs.rbi.org.in/rdocs/AnnualReport/PDFs/86591.pdf>). These data is verified by the assessment team and was found to be satisfactory.

The project developer has checked the robustness of the financial model through a sensitivity analysis. Sensitivity analysis has been conducted against variations in PLF, project investment cost, O&M cost and power tariff rate. Each variable was varied within the range of  $\pm 10\%$  to check the additionality of the project in different possible scenarios. The project was found to be additional in all the possible scenarios considered in sensitivity analysis.

Financial parameters and assumptions used by the PP at the time of decision making were verified against the evidence available at the time of decision making and the same parameters were also crosschecked with the actual data wherever possible. A complete assessment of the same is tabulated below:

| Sr. No. | Parameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Webhosted PDD | Final PDD | Validation Remarks                                                                                                                                                                                                          | Related CL/CAR            |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| 1.      | <b>CAPEX</b><br>Wind Mills,<br>Overhead<br>Lines etc<br><br>For<br><b>5 x 1.50<br/>MW</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 4490 Lakh     | 4565 Lakh | The CAPEX has been validated from the proposals issued by the technology supplier <sup>11/</sup> (i.e. Suzlon) dated 06 <sup>th</sup> September 2008. This has been validated to be a credible source and found acceptable. | CAR 03<br>& CAR<br>05 (3) |
|         | <b>5 x 1.25<br/>MW</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 3250 Lakh     | 3295 Lakh |                                                                                                                                                                                                                             |                           |
|         | <b>Justification</b> – The CAPEX estimation available at the time of decision making was verified from the proposals issued by the technology supplier <sup>11/</sup> (i.e. Suzlon) dated 06 <sup>th</sup> September 2008 during the validation process. The sources were found to be credible and authentic and hence accepted.<br><br>The values used in the web-hosted PDD were taken from purchase orders issued by the PP <sup>19/</sup> dated 14 October 2008. The actual CAPEX was found to be lower than the estimated CAPEX. However, as per the guidelines of EB 51 Annex 58, input values available at the time of decision making were validated by the assessment team. Hence, the CAPEX estimation available on the basis of proposals issued by the technology supplier was validated by the assessment team. The same is used in the IRR calculations and the PDD (final) submitted for request for registration. Further, it has been checked by the assessment team that the sensitivity analysis covers the realistic variation in the CAPEX and project is additional with the actual values as well. |               |           |                                                                                                                                                                                                                             |                           |

| Sr .No. | Parameter                          | Webhosted PDD | Final PDD | Validation Remarks                                                                                                                                          | Related CL/CAR |
|---------|------------------------------------|---------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 3.      | Operation and Maintenance Cost(Per |               |           | The operation and maintenance cost of the WTGs has been validated from the proposals issued by the technology supplier (i.e. Suzlon) dated 06 <sup>th</sup> | CAR 05 (3)     |

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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                          |                        |                        |                                                             |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|------------------------|------------------------|-------------------------------------------------------------|--|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | windmill)                                |                        |                        | September 2008. This is approximately 1.7% of the WTG cost. |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>5 x 1.50 MW</b><br><b>5 x 1.25 MW</b> | 13.25 Lakh<br>10.5Lakh | 14.5 Lakh<br>11.5Lakhs |                                                             |  |
| <p><b>Justification</b> – The values used in the web-hosted PDD were taken from the purchase order issued by Project Proponent dated 14 October 2008.</p> <p>Following the guidelines of EB 51 Annex 58, input values available at the time of decision making shall be validated by the assessment team. Hence, the values were revised in the latest version of the PDD to reflect the values available in the proposals issued at the time of decision making. The assessment team has validated the O&amp;M estimation based on the proposals available at the time of decision making.</p> |                                          |                        |                        |                                                             |  |

| Sr .No.                                                                                                                                                                                                                                           | Parameter                                                                            | Webhosted PDD | Final PDD | Validation Remarks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Related CL/CAR |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 4.                                                                                                                                                                                                                                                | Escalation in Operation and Maintenance cost (%)<br><b>7.50 MW</b><br><b>6.25 MW</b> | 5%<br>5%      | 5%<br>5%  | The escalation in operation and maintenance cost of the WTGs has been validated from the proposals issued by the technology supplier (i.e. Suzlon) dated 06 <sup>th</sup> September 2008. The escalation in O& M cost installed in state of Karnataka has been found in the range of 5.0% ( <a href="http://www.kerc.org/order2005/Order%20on%20NCE%20Tariff%20(FINAL).doc">http://www.kerc.org/order2005/Order%20on%20NCE%20Tariff%20(FINAL).doc</a> ) and this is consistent to the assumptions used by the PP at the time of decision making. | CAR 05         |
| <b>Justification</b> – The same is further validated by the purchase order issued by Project Proponent dated 14 October 2008 and the values were found to be consistent with the issued proposals. Hence, the values were found to be acceptable. |                                                                                      |               |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |

| Sr .No.                                 | Parameter                                                                             | Webhosted PDD    | Final PDD        | Validation Remarks                                                                                                                                                                                                                                                                                                                                                                                    | Related CL/CAR |
|-----------------------------------------|---------------------------------------------------------------------------------------|------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 5.                                      | Insurance (Fire/Burglary/Breakdown + Service Tax)<br><b>7.50 MW</b><br><b>6.25 MW</b> | 0.28 %<br>0.28 % | 0.31 %<br>0.31 % | The cost of the insurance has been checked with Bajaj Allianz policy dated 22nd April 2008 issued for SRPL Maharashtra Wind Mill. This has been validated to be a credible source and found acceptable.<br><br>The same has been further validated by insurance company (Bajaj Allianz) Quotation dated 21 Jan 2009 for the project. Thus the value taken at the time of decision making was correct. | CAR 05         |
| <b>Justification</b> – Discussed above. |                                                                                       |                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                       |                |

| Sr. No.                                 | Parameter                                                                        | Webhosted PDD   | Final PDD       | Validation Remarks                                                                                                                                                                                                                                            | Related CL/CAR |
|-----------------------------------------|----------------------------------------------------------------------------------|-----------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 6.                                      | Annual Depreciation as per companies act (%)<br><b>7.50 MW</b><br><b>6.25 MW</b> | 5.28 %<br>5.28% | 5.28 %<br>5.28% | This has been checked from the company act ( <a href="http://www.mca.gov.in/Ministry/actsbills/pdf/Companies_Act_1956_Part_2.pdf">http://www.mca.gov.in/Ministry/actsbills/pdf/Companies_Act_1956_Part_2.pdf</a> page 77) and the value mentioned is correct. | CAR 05 (3)     |
| <b>Justification</b> – Discussed above. |                                                                                  |                 |                 |                                                                                                                                                                                                                                                               |                |

| Sr .No.                                                                                                                                                                                                                                                                                                                                                      | Parameter                                       | Webhosted PDD                                                                | Final PDD                                                            | Validation Remarks                                                                       | Related CL/CAR |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------|
| 7.                                                                                                                                                                                                                                                                                                                                                           | Rate of Depreciation as per Income tax Act(%) - | 50% (1st Year)<br><br>40 (2nd Year)<br><br>10 (3 <sup>rd</sup> year onwards) | 50% (1 <sup>st</sup> Year)<br><br>80%( 2 <sup>nd</sup> year onwards) | Refer pages 110 & 112 of V.G.Mehta's Income tax Ready Reckoner, Assessment year 2009-10) | CAR 05 (3)     |
| <p><b>Justification</b> – In the web-hosted PDD, the depreciation was calculated on the basis of original asset value. Hence, different depreciation rates were mentioned in the web-hosted PDD.</p> <p>In the final PDD, the depreciation rates were corrected as per the provisions of the income tax act of India. The same was validated by the DOE.</p> |                                                 |                                                                              |                                                                      |                                                                                          |                |

| Sr .No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Parameter | Webhosted PDD          | Final PDD               | Validation Remarks                                                                                                                                                                                                                                                                                                                | Related CL/CAR |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 8.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Equity    | 1190 lakh<br>870 Lakhs | 1205 Lakhs<br>875 Lakhs | This has been validated by Letter from Bank (Bank of Maharashtra) dated 8th September 2008 in which it is said that maximum finance will be 75% of the Total cost of the Plant and machineries and rest amount will be arranged by Project proponent. It is also mentioned that no finance will be provided against land portion. | CAR 05         |
| <p><b>Justification</b> – In the web-hosted PDD, the equity was calculated on the basis of debt amount equivalent to 75% of the total cost of plant and machineries as per the purchase orders.</p> <p>However, the total cost of plant and machineries in the final PDD were revised considering the total cost of plant and machineries available at the time of decision making as per the proposals issued by Suzlon. Hence, as per the guidelines of EB 51 Annex 58, input value for equity, available at the time of decision making were validated by the DOE.</p> |           |                        |                         |                                                                                                                                                                                                                                                                                                                                   |                |

| Sr .No.                                                                                                                                                                                                                                                                                                                                  | Parameter | Webhosted PDD           | Final PDD                | Validation Remarks                                                                                                                                                                                                                                                   | Related CL/CAR |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 9.                                                                                                                                                                                                                                                                                                                                       | Debt      | 3300 lakh<br>2380 lakhs | 3360 Lakhs<br>2420 Lakhs | As stated above this has been validated by Letter from Bank(Bank of Maharashtra) dated 8th September 2008 in which it is said that maximum finance will be 75% of the Total cost of the Plant and machineries and rest amount will be arranged by Project proponent. | CAR 05         |
| <p><b>Justification</b> – In the web-hosted PDD, the debt amount was taken as per the values mentioned in the Loan Document.</p> <p>However, the total cost of plant and machineries in the final PDD were revised considering the total cost of plant and machineries available at the time of decision making as per the proposals</p> |           |                         |                          |                                                                                                                                                                                                                                                                      |                |

|  |                                                                                                                                                             |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | issued by Suzlon. Hence, as per the guidelines of EB 51 Annex 58, input value for debt, available at the time of decision making, was validated by the DOE. |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Sr .No.                                 | Parameter                                         | Webhosted PDD | Final PDD | Validation Remarks                                                                                                                                                                                                                                                                                                              | Related CL/CAR |
|-----------------------------------------|---------------------------------------------------|---------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 10.                                     | Loan Duration (Years) including Moratorium Period | 6.5 Years     | 6.5 Years | This has been validated by Letter from Bank (Bank of Maharashtra) dated 8th September 2008 in which Loan is requested for 78 months including 6 months moratorium period. This has been further validated by Loan sanction letter from Bank of Baroda dated 30/12/2008 in which also the Loan tenure is mentioned as 6.5 years. | CAR 05         |
| <b>Justification</b> – Discussed above. |                                                   |               |           |                                                                                                                                                                                                                                                                                                                                 |                |

| Sr .No.                                 | Parameter     | Webhosted PDD | Final PDD | Validation Remarks                                                                                                                                                                                                                                                                                                                                                                                                                            | Related CL/CAR |
|-----------------------------------------|---------------|---------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 11.                                     | Interest Rate | 11.75%        | 11.75%    | This has been validated by Letter from Bank (Bank of Maharashtra) dated 8th September 2008 in which it is stated that Bank will accommodate the interest rate in between 11.5 to 12.0%. This has been further validated by Loan sanction letter from Bank of Baroda dated 30/12/2008 in which it is mentioned that interest rate will be 1.5% below BPLR i.e. 11.75%. Thus interest taken at the time of decision making is found acceptable. | CAR 05         |
| <b>Justification</b> – Discussed above. |               |               |           |                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |

| Sr..No.                                 | Parameter   | Webhosted PDD                                                                                                       | Final PDD                                                                        | Validation Remarks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Related CL/CAR |
|-----------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 12                                      | Tariff Rate | 3.40 Rs/Kwh<br>(1 <sup>st</sup> year – 10 <sup>th</sup> year)<br><br>4.08<br>Rs/Kwh (10 <sup>th</sup> year onwards) | 3.40<br>Rs/Kwh (1st year – 10th year))<br><br>4.08<br>Rs/Kwh (10th year onwards) | <p>The Tariff has been validated from KERC (Karnataka Electricity Regulatory Commission, Bangalore) Order dated 18-01-2005. The value has also been cross-checked with Power purchase agreement dated 25 July 2009 and the values for first 10 years were found consistent with the values taken at the time of investment decision.</p> <p>Considering the present scenario in India where cost based approach is used for tariff determination, it is very likely that tariff rate for later years will reduce due to no loan liability. However, as a conservative approach, PP has used 20% escalation on the present tariff rate to determine the expected tariff rate from 11<sup>th</sup> year onwards. The assumption was found reasonable by the DOE and hence accepted.</p> | CAR 05         |
| <b>Justification</b> – Discussed above. |             |                                                                                                                     |                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |

| Sr..No.                                 | Parameter                                               | Webhosted PDD          | Final PDD              | Validation Remarks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Related CL/CAR |
|-----------------------------------------|---------------------------------------------------------|------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 15                                      | Generated Units<br><br><b>7.50 MW</b><br><b>6.25 MW</b> | 36 Lacs<br><br>26 Lacs | 36 Lacs<br><br>26 Lacs | <p>The same has been validated from the proposals issued by the technology supplier (i.e. Suzlon) dated 06<sup>th</sup> September 2008. As per EB-48 Annex-11 requirement the same has been cross checked with the Term Loan application submitted to the Bank (Bank of Baroda) dated 22 Oct 2008. In the application, it is mentioned that 7.5 MW and 6.25 MW turbines are expected to generate 36 Lacs units and 26 Lacs units respectively. This has been validated to be a credible source and found acceptable.</p> | CAR 05         |
| <b>Justification</b> – Discussed above. |                                                         |                        |                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                |

| Sr..No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Parameter | Webhosted PDD | Final PDD | Validation Remarks                                                                                                                                                                                                                                                                                            | Related CL/CAR |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | IRR       | 9.90 %        | 9.20 %    | All the input parameters have been revised during validation to reflect the values available at the time of decision making, which was not done in the web-hosted PDD. The DOE has validated all the input values as discussed above and confirm that the same were available at the time of decision making. |                |
| <b>Justification</b> – In the web-hosted PDD, the actual input values were used to calculate the IRR. However, as per EB51 Annex 58, input values used to calculate IRR shall be available at the time of decision making. Hence, the input values were revised in the final PDD to reflect the values available at the time of decision making. It was also cross-check by the DOE that IRR will not cross the benchmark even after using the actual values to calculate the IRR. |           |               |           |                                                                                                                                                                                                                                                                                                               |                |

| Sr..No.                                                                                                                                                                                                                                   | Parameter | Webhosted PDD | Final PDD | Validation Remarks                                                                                                                                                                                                                                                                                                                                                                 | Related CL/CAR |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 17                                                                                                                                                                                                                                        | Benchmark | 12.25 %       | 12.25 %   | The benchmark for the project 12.25%, taken as prime lending rate (PLR) provided by Reserve Bank of India (RBI) for the financial year 2008. The PLR for the year 2007 - 2008 was ranging from 12.25% - 14% and at the time of investment decision (August 2008), the PLR was varying from 12.75-14%. The minimum of 12.25% was considered as conservative benchmark for the year. |                |
| <b>Justification</b> – SGS Financial Expert reviewed the Benchmark value and confirmed that the benchmark value is conservative considering the project type and macro-economic factors existing in India at the time of decision making. |           |               |           |                                                                                                                                                                                                                                                                                                                                                                                    |                |

Based on the financial data and analysis provided by the PP, it has been demonstrated that investment barrier existed at the time of the project activity and the project would have not implemented without CDM benefits. Thus the project activity cannot be considered as a business as usual scenario and is not a likely baseline scenario. SGS concludes that the emission reductions from the project are additional.

CAR 05 was raised for the issues discussed hereafter. The project proponent has not submitted additionality arguments with appropriate evidences in reference to the starting date of the project activity. The project participant has not submitted the excel spreadsheet for financial calculation and has not mentioned evidence for each value used in financial calculation and basis for calculations. Justification for the selected benchmark was not provided in light with para 40 of general guidance of EB 40 meeting report. It was not clear how the barrier analysis like investment analysis and barrier due to prevailing practice are specific to project activity.

The source for project cost, cost of O&M, PLF, insurance cost, depreciation as per companies act, income tax, tariff, debts and equity, moratorium of loan, cash inflow and outflow was not clear. The break up cost has not been mentioned clearly. The financials were produced to the actual purchase order whereas the board decisions were made on the proposal price for the project activity. Power generation guarantee offered by M/s Suzlon energy Ltd. to the PP was not evidenced. It was not clear whether the financial indicator is post tax project IRR. The justification for the selection of parameters used

calculation basis for the sensitivity analysis has not mentioned. The project participant was not clearly demonstrating the additionally application as per Attachment A of Appendix B.

In response to CAR 03, the PP has revised the PDD to version 02 (/2/) incorporating all the requirements in making the project more detailed and clear with evidence for validation. The PDD version 02 was assessed by SGS in accepting and closure of findings. Financial risk is argued on the basis of benchmark analysis. The benchmark for the project is calculated based on the PLR considering the data provided by Reserve Bank of India (RBI) for the particular year and minimal value are considered as conservative for the calculation

The additionality of the project activity has been demonstrated by means of investment analysis as per Attachment A of Appendix B. Investment analysis of the project activity has been carried out using information and data that are specific to the project activity. Plant Load Factor (PLF) is calculated based on the equipment supplier's estimate of power generation per WTG in their proposal for 1.5MW and 1.25MW. The proposals from the equipment supplier for the WTGs have been submitted. The Same PLF has been used while availing the loan from the bank (/12/) (/31/) and the same is evidenced through letter from the bank (/31/) and thus inline with the EB48 annex 11 requirements (/38/). The project cost has been checked with the proposals from the equipment supplier which was available at the time of conceptualization of project activity and also the purchase order for actual (/11/), (/19/).

The project participant has submitted the revised detailed excel spreadsheets (/29/) for the financial calculations and detailed description is also incorporated in the Section B.5 of the revised PDD. The proposed project activity generates financial and economic benefits other than CDM related income, through the export of power to the regional grid; hence the participants decided to apply benchmark analysis. As per the Guidance 11 in 'Guidance on the Assessment of Investment Analysis' Version 3 (EB 51 Annex 58), project IRR has been chosen as the financial indicator, PLR is the suitable benchmark. The project participant has considered the pre tax project IRR as a financial indicator and compared with the benchmark to check the feasibility of the project activity. The investment decision was taken in the month of September 2008. The seriousness of CDM consideration and chronology of events was discussed in section 4.7.2 of the report.

The sensitivity analysis can be carried out for the critical parameters like investment, O&M cost, PLF and power rate. Even then investment cost is usually a fixed value, since the project financials were carried out on the bases of proposal, the investment cost was also triggered for sensitive analysis. The variable parameters like investment, PLF, O&M cost and power rate cost that can affect 20% of the project cost as per para 17 of the Annex 58 of EB 51.

SGS validated both the financial analysis worksheets (proposal based at the time of decision made for the project and also the worksheet based on actual cost)

The result of sensitivity analysis with variation in +10% and -10% are as follows

| <b>Variation in project cost</b> | <b>-10%</b> | <b>0%</b> | <b>+10%</b> |
|----------------------------------|-------------|-----------|-------------|
| Project IRR proposal based       | 10.83%      | 9.20%     | 7.80%       |
| Project IRR actual cost          | 11.41%      | 9.75%     | 8.33%       |
| <b>Variation in PLF</b>          | <b>-10%</b> | <b>0%</b> | <b>+10%</b> |
| Project IRR proposal based       | 7.35%       | 9.20%     | 11.01%      |
| Project IRR actual cost          | 7.83%       | 9.75%     | 11.55%      |
| <b>Variation in O&amp;M cost</b> | <b>-10%</b> | <b>0%</b> | <b>+10%</b> |
| Project IRR proposal based       | 9.53%       | 9.20%     | 8.87%       |
| Project IRR actual cost          | 10.05%      | 9.75%     | 9.45%       |
| <b>Variation in Power rate</b>   | <b>-10%</b> | <b>0%</b> | <b>+10%</b> |
| Project IRR proposal based       | 7.35%       | 9.20%     | 11.01%      |
| Project IRR actual cost          | 7.83%       | 9.75%     | 11.55%      |

The above table indicates that the project IRR on proposal at the time of CDM decision is 9.20% and 9.75% on actual cost of project activity. The IRR on both cases is less when compared against the conservative benchmark of 12.25% (PLR).

The conservative PLR from the RBI was considered as benchmark for the project activity. The interest rate was considered from "the Letter from Bank of Maharashtra dated 8<sup>th</sup> September 2008" prior to the

decision making and it is as per the requirement of EB 51 annex 58 “Guidelines on the assessment of investment analysis”. SGS as analysed the chances of increase of PLF, O&M cost, power rate more than 10%. The actual average PLF for the 2007-2008 were directly analysed for the region and it is found that the average PLF is less then or near to the PLF projected by the equipment supplier. O&M cost is already contracted in the increasing trend and thus would not affect and also the increasing trend would rather lower the IRR. There is unlikely of power rate increase up to 10% within the project crediting period. This power rate variation is observed by SGS from the state Electricity authority reports and accepts that variation of 10% is not likely. The Power Purchase Agreement (PPA) signed with the state electricity board is fixed price of 3.4 Rupees per kilowatt hour.

This established facts and the supported documents for the financials were checked thoroughly by validation team on both proposal and actual cost of the project. In summary, project IRR is not crossing the benchmark of 12.25% for the project activity. The barrier due to prevailing practice was removed in the revised PDD version 02 since the barrier was not demonstrated as per CDM guidelines. Thus CAR 05 was closed out. Based on the analysis of all facts and figure, the project activity is financially unattractive and proved to be additional.

#### 4.7.2 Prior Consideration of the Clean Development Mechanism

The project participant has not provided the evidences for serious CDM consideration as per EB 49, Annex 22 and chronology of events of the project with documentary evidences has not been mentioned in section B.5 of the PDD, thus CAR 03 was raised.

In response to that the PP has mentioned the chronology of events in section B.5 of the PDD. The prior consideration of the CDM for the proposed CDM project activity is revealed from the Memorandum dated 6<sup>th</sup> September 2008 (/11/) of the PP and communication held with the equipment supplier regarding CDM consultancy. The minutes of meeting of Board of Directors (/16/) dated 10<sup>th</sup> September 2008, was checked and found that CDM has been considered seriously as a decisive factor for the proposed project activity. The activities are dated prior to the project start date which signifies that the PP has got prior knowledge of CDM. The start date of the project activity for the proposed CDM project activity is 14<sup>th</sup> October 2008 which is the date of supply agreement (/19/) which has been signed with the WTG supplier and it has been found to be in line with para 67, EB 41 (/38/) and is accepted. The project proponent has intimated UNFCCCC on 9<sup>th</sup> December 2008 (/18/) regarding the project and was confirmed by SGS against the acknowledgement from UNFCCCC regarding the intimation. The parallel actions taken to secure the CDM status are as follows and all the evidence related to the chronology event are evidenced by SGS and accepted for the genuine reason of time gap taken for the project activity under CDM.

| Date                    | Events                                           | Reference |
|-------------------------|--------------------------------------------------|-----------|
| 06/09/2008              | Proposal from the Suzlon                         | /11/      |
| 10/09/2008              | Board Decision for implementation of the project | /16/      |
| 03/10/2008              | Enquiry with various consultants                 | /15/      |
| 06/10/2008              | Proposal by consultant appointed                 | /15/      |
| 16/10/2008 – 21/10/2008 | PP negotiation with consultant                   | /15/      |
| 14/10/2008              | P.O of WTG,s                                     | /19/      |
| 12/11/2008              | Appointment of CDM Consultant                    | /15/      |
| 09/12/2008              | UNFCCCC intimation                               | /18/      |
| 09/12/2008              | UNFCCCC acknowledgement to intimation            | /18/      |
| 10/12/2008              | Stakeholder meeting                              | /26/      |
| 05/01/2009              | Appointing DOE                                   | /17/      |
| 05/02/2009 – 06/03/2009 | Web Hosting of the PDD                           | /1/       |
| 03/03/2009              | MOEF Presentation                                | /3/       |
| 14/03/2009 – 15/03/2009 | DOE visit to site                                | /36/      |
| 29/09/2009              | HCA Granted                                      | /3/       |

#### 4.7.3 Identification of alternatives (if applicable)

Not Applicable.

#### 4.7.4 Investment analysis (if applicable)

The project participant has demonstrated financial calculations to demonstrate the additionality and the same are discussed in above section 4.7.1 of the report.

#### 4.7.5 Barrier analysis (if applicable)

Not applicable

#### 4.7.6 Common practice analysis

Not applicable

### 4.8 Application of Baseline Methodology and Calculation of Emission Factors

The project has applied baseline methodology as mentioned in the small scale methodology AMS I.D version 15 (/8/), Grid connected renewable electricity generation, as per Appendix B of the simplified modalities and procedures for small-scale CDM project activities. Baseline methodology for projects under Type I.D has been detailed in paragraphs 8-13 of the applied methodology AMS I.D, version 15. Paragraph 11 (Type I.D) using a combined margin approach consisting 75% operating margin and 25% build margin approach applies to this project activity. For the proposed project activity the baseline emission reduction (ERy) is the MWh produced (EGy) by the renewable generating unit multiplied by an emission coefficient. EGy is calculated by multiplying and addition of relevant capacities with the Plant load Factor (PLF) percentage of the WTGs. The project participant has adopted the combined margin approach for the emission coefficient as per Tool to calculate the emission factor for an electricity system (/34/).

The combined margin emission coefficient for the southern regional grid of India has been determined to be 0.927 kgCO<sub>2</sub>e/kWh. The operating margin has been estimated to be 1.00 kgCO<sub>2</sub>e/kWh and the build margin to be 0.71 kgCO<sub>2</sub>e/kWh. The emission coefficients are determined from the official data published by the Central Electricity Authority CO<sub>2</sub> Baseline database. Central Electricity Authority (CEA) (/4/), which is an official source of Ministry of Power, Government of India have worked out baseline emission factor for various grids in India and made them publicly available CO<sub>2</sub> baseline database for the Indian Power Sector User Guide version 4.0 database (<http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm>). The calculations and assumptions have been verified by the assessment team and were found to be correct.

The project activity uses wind power to generate electricity and hence there are no emissions from the project activity. Leakage emissions on account of the project activity is considered as zero as neither the Wind Energy Generators are transferred from another activity nor any existing equipment of the project site would be transferred from the project site in accordance with the applied methodology (/8/) which has been verified by the validation team during the site visit and from purchase orders (/10/) and it was found that there is no transfer of equipment that takes place and hence, it was found to be satisfactory.

The data required to be monitored ex-post are the amount of electricity export to the grid and the amount of electricity imported from the grid. The net electricity supplied to the southern grid will be monitored by the State Electricity Board in presence of representatives of the PP and the reading would be jointly certified. The measurement of electricity is carried out as per the guidelines of the State Electricity Board /10/. The meters are under the control of the Board. The data will be kept for two years following the end of the crediting period.

CAR 06 was raised as the project participant has not submitted the excel spreadsheet with sources of each value and the data calculated from CEA was not clear. The calculations of the emission factor were not clear and it was not clear whether the emission factor is ex-ante or ex-post parameter. The proportioning procedure for the project activity and consideration of PLF was not been mentioned in the PDD. In response to the CAR, the PP has revised the excel spreadsheet for the calculations of emission reductions and all the corrections have been done to arrive at the baseline. The combined margin emission factor is the ex ante parameter and will be fixed for the entire crediting period. The JMR calculation indicates that the losses have been calculated by feeder wise and will be subtracted from the controller reading of each turbine. The PP has provided clarification on the proportioning procedure used for the calculation of net electricity supplied to grid in the PDD along with formulae which is that the emission reduction due to the project activity is calculated on the basis of the Monthly Report submitted

by the electricity board based on joint meter readings. The readings noted by electricity board in the Monthly Report are final and binding. It is acceptable, CAR 06 was closed.

The start date of the project activity is 14<sup>th</sup> October 2008 which is the date of signing of supply agreement between the PP and the WTG supplier and the operation lifetime is 20 years as described in the PDD which has been checked from the technical specification (/35/) of the WTGs. Renewable crediting period of 7 years has been selected for the project activity and it is reasonable. The project operational life is expected to be 20 years which exceeds the crediting period of 7 years (/37/). This is also supported and evidenced through Supplier letter to the PP (/37/). The PP shall not be entitled to claim any carbon credits in-case of any refurbished/renovation to the WTG between the crediting period of 21 years. The start date of the crediting period as mentioned in the PDD is 01/08/2010. The date of registration would be considered as the start date for the first crediting period. The project participants will not commence the crediting period prior to the date of registration.

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

The present CDM project activity uses monitoring methodology AMS I.D version 15 (/8/) valid from 30<sup>th</sup> October 2009 for "Grid connected renewable electricity generation". The monitoring methodology applies consistently the choice of the option selected for monitoring both project and baseline emissions. The monitoring plan provides for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period. The information given for each monitoring variable by the presented table is sufficient to ensure the verification of a proper implementation of the monitoring plan. The project participant has mentioned the proportioning procedure for the calculation of net electricity supplied to grid and included required parameters in monitoring section B.7.1 of PDD (/2/).

CAR 07 and CAR 08 were issued as the PP has not submitted the QA/QC procedure for project activity and the monitoring parameters were unclear. The procedure for data uncertainty, emergency preparedness, roles and responsibility, operational and management structure has not been mentioned in the PDD. The project participant has not mentioned the calibration procedure for the on board energy meters or controller meter. In response to that the project participant has submitted the ISO certificates of WTG supplier for QA/QC procedures. The WTG supplier is involved in the operation, maintenance and data monitoring. The revised PDD has been reviewed to check that the procedure for data uncertainty, emergency preparedness, roles and responsibility, operational and management structure are mention in PDD. The calibration is carried out annually by the State Electricity Board.

The monitoring plan completely describes all measures to be implemented for monitoring all parameters required. The parameter used for the calculation of emission reductions is net electricity supplied to the grid by the project activity. This parameter is a calculated parameter by apportioning procedure and taken from JMR sheet. The PP is monitoring all required parameters used for the apportioning procedure as mentioned in section B.7.1 of the revised PDD. The operating margin and built margin emission factors are fixed ex ante parameters and are taken from the latest available version of CEA baseline database at the time of finalization of baseline. The monitoring plan described the positioning of the equipments. The meters are calibrated by state electricity board. O&M team will ensure joint monthly reading with state authorities which has been verified during the site visit by the assessment team. The revised PDD, version 02 has been provided by the PP which reveals clear monitoring procedure. Individual customers have separate main and check meters (Vacuum Circuit Breaker meter) collective of their turbines. The readings are taken jointly by State Electricity Board official and the plant personal both at Vacuum Circuit Breaker meters and substation meters. The proportioning of transmission losses is calculated by the State Electricity Board as per the proportioning formula and the results are filled on Form-B. SRPL receives this Form-B monthly that contains the electricity exported, electricity imported, transmission losses and net electricity supplied to the grid. SRPL invoice the State Electricity Board every month based on this Form-B. The Form-B's and invoice shall be used directly to cross check the net electricity supplied to grid. The conservative of the both will be considered as net supplied to the grid. The emission reduction due the project activity is calculated by the monthly report of the PPA (/10/) prepared by the Karnataka Electricity Board for the net electricity supplied to the southern grid and the same has been confirmed by monthly JMR report, which is found to be satisfactory. From the above discussion, it has been concluded that the PP got sufficiently implemented the monitoring plan. Thus, CAR 07 and CAR 08 were closed.

#### **4.10 Environmental Impacts**

The proposed project activity contributes to generation of green power and is expected to benefit the economic development of the region. Thus, the project activity is expected to have only beneficial impacts and no adverse impacts are foreseen. The project activity is in compliance with all current applicable legislations and licenses for its activity. This is confirmed against the Host country approval (/3/), wind mill clearance dated 21/01/2009 for 1.25MW and for 1.5MW from KREDL (Karnataka Renewable Energy Development Limited) and Land and infrastructure clearance dated 26/11/2008 and 25/05/2009 (/25/).

The project proponent has mentioned in the PDD that the present project activity does not require EIA to be carried out because as per the schedule 1 of Ministry of Environment and Forest notification dated 27<sup>th</sup> January 1994 and 14<sup>th</sup> September 2006 <http://envfor.nic.in/legis/eia/so1533.pdf> (/32/), 30 activities are required to undertake environmental impact assessment studies. The proposed project activity does not fall in this category and hence EIA is not required to be done.

CAR 09 was issued as the environment relative issues of the project were not clearly addressed in the PDD and the PP in respect to this has clearly identified and addressed all the environmental implications of the project and also has provided the web link to ensure that EIA (/32/) was not applicable. The same has been checked and verified by the assessment team and was found to be acceptable. Hence CAR 09 is closed.

#### **4.11 Local Stakeholder Comments**

The project proponent identified the relevant stakeholder like Local villages, Suzlon Energy Ltd., contract employees, vendors and Gram Sarpanch representative as local stakeholders for the project activity. The local stakeholders were invited personally for the meeting. Public notice has been used to invite comments by local stakeholders. The PP has provided the copy of Minutes of meeting, attendance sheet of stakeholders' (/26/) consultation to the assessment team. It has been checked for any comments from the minutes of the meeting and it was found that there were no negative comments received from the local stakeholders and is accepted. The stakeholders meeting was conducted on 10/12/2008 and PDD was webhosted on 04/02/2009. Thus it is confirmed as per the VVM version 1.1 requirement that the local stakeholder's comments for the project activity are invited prior to the publication of PDD. CL 11 was raised against version 1 of PDD, as the PP had not mentioned the details and had not submitted the documentary evidence. The CL 11 is formally closed with assessment of all the evidence and review of updated final PDD.

## 5. Comments by Parties, Stakeholders and NGOs

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

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

The Project Design Document for this project was made available at (<http://cdm.unfccc.int/Projects/Validation/DB/ML6GGOQXE7I9A9990U8XIB024L6J7B/view.html>) and was open for comments from 05/02/2009 until 06/03/2009. Comments were invited through the UNFCCC CDM homepage.

### 5.2 Compilation of all Comments Received

| Comment Number | Date Received | Submitter | Comment                    |
|----------------|---------------|-----------|----------------------------|
| 0              | Nil           | Nil       | No comments were received. |

### 5.3 Explanation of How Comments Have Been Taken into Account

No comments were received.

## 6. List of Persons Interviewed

| Date                       | Name                       | Position                               | Short Description of Subject Discussed                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------|----------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14/03/2009 –<br>15/03/2009 | Mr. Prafulla<br>Khinvasara | Head – Wind<br>Power Projects,<br>SRPL | <ul style="list-style-type: none"> <li>Project proponents view on project activity and CDM funds, CDM consideration</li> <li>Legal Compliance and present power situation in the state</li> <li>Chronology of events</li> <li>Additionality and data monitoring for project activity</li> <li>Stakeholder consultations</li> <li>Financial analysis and benchmark</li> </ul>                                  |
|                            | Mr Kaushik Patel           | Asst. Manager<br>Suzlon Energy<br>Ltd  | <ul style="list-style-type: none"> <li>Technology applied and operational lifetime.</li> <li>Monitoring and reporting procedures.</li> <li>Calibration, internal audit and corrective action procedures.</li> <li>Environmental compliance</li> <li>Provisions for training, operation and maintenance.</li> <li>Monitoring and data collection</li> <li>Monitoring Procedure and O&amp;M schedule</li> </ul> |
|                            | Mr. Rajanikant K           | Consultant<br>(Ernst & Young)          | <ul style="list-style-type: none"> <li>Technical description of project activity, baseline</li> <li>Project Technology and additionality</li> <li>Baseline calculations</li> <li>Estimated emission reductions.</li> <li>Calculation of PLF</li> </ul>                                                                                                                                                        |

## 7. Document References

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

- /1/ PDD "13.75 MW wind power project in Davangere, Karnataka, India", version 01, dated 27/01/2009, Webhosted on UNFCCC portal from 05/02/2009 – 06/03/2009
- /2/ PDD "13.75 MW wind power project in Davangere, Karnataka, India", version 02, dated 02/12/2009
- /3/ DNA of India: Letter of Approval dated 29 September 2009. and MoEF presentation dated 03/03/2009
- /4/ <http://www.cea.nic.in/>
- /5/ International emission trading association (IETA) & the World Bank's Prototype Carbon Fund (PCF): validation and verification manual (<http://www.vvmanual.info>)
- /6/ Appendix B of the simplified modalities and procedures for small-scale CDM project activities: Indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories. Version 07 of 28 November 2005.
- /7/ Revised 1996 IPCC guidelines for national green house gas inventories – reference manual (volume 3)
- /8/ AMS I D "Grid connected renewable electricity generation", version 13, dated 14 December 2007 and version 15, dated 30 October 2009
- /9/ UNFCCC website (<http://cdm.unfccc.int/index.html>)

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

- /10/ Power purchase agreement for 1.25MW – dated 25 July 2009.  
Power purchase agreement for 1.5MW – dated 25 July 2009.
- /11/ Proposal letter for 1.5MW and 1.25MW WTG's dated 6 September 2008
- /12/ Bank Letter dated regarding Loan sanction application dated 08 September 2008 and sanction letter dated 30/12/2008 and term loan proposal dated 22 October 2008.  
Bajaj Allianz policy dated 22nd April 2008 for SRPL Maharashtra Wind Mill,
- /13/ Modalities of communication letter dated 23 April 2009
- /14/ Erection & commissioning certificate dated 06 April 2009 for 3 \* 1.25MW and 5 \* 1.5MW WTG's. 29 May 2009 for 1 \* 1.25MW WTG
- /15/ Appointment of CDM consultant dated 12/11/2008, Enquiry with various consultants email communications dated 01/10/2008, Proposal by the consultant dated 06/10/2008, e-mail negotiations with PP and consultants dated 16/10/2008 – 21/10/2008
- /16/ Board resolution for CDM consideration for the project dated 10 September 2008
- /17/ DOE appointment letter 05 January 2009
- /18/ Confirmation letter from UNFCCC regarding receipt of Project Intimation dated 09 December 2008
- /19/ First purchase order dated 14 October 2008 for 1.25MW and for 1.5 MW dated 08 November 2008
- /20/ O&M agreement and quality control  
(<http://www.suzlon.com/manufacturing/l3.aspx?l1=5&l2=21&l3=34>)
- /21/ Undertaking letter for NO ODA involved in the project activity dated 23 April 2009
- /22/ ISO 14001-2004 certificate, dated 15 June 2006
- /23/ ISO 9001 – 2000, certificate dated 05 August 2008, controlled copy of training, operation and maintenance procedure.
- /24/ OHSAS 18001:1999, certificate dated 12 July 2006
- /25/ Wind Mill clearance 21 January 2009 for 1.25MW and for 1.5MW from KREDL (Karnataka Renewable Energy Development Limited). Land and infrastructure clearance dated 26

- November 2008 and 25 May 2009.
- /26/ Minutes of Meeting (MoM) of stakeholders meeting dated 10 December 2008
  - /27/ Stake holders invitation letter 01 December 2008
  - /28/ CER calculation spreadsheet with web links for referred parameters
  - /29/ Financial analysis spreadsheet (with proposal and actual) with web links for referred parameters.
  - /30/ Calibration procedure for panel or controller meter
  - /31/ Bank loan application letter dated 22 October 2008 for PLF evidence
  - /32/ [www.cea.nic.in](http://www.cea.nic.in)  
[www.suzlon.com/WindTurbines.html?cp=2\\_3](http://www.suzlon.com/WindTurbines.html?cp=2_3)  
[http://www.cea.nic.in/planning/c%20and%20e/user\\_guide\\_ver4.pdf](http://www.cea.nic.in/planning/c%20and%20e/user_guide_ver4.pdf)  
<http://rbidocs.rbi.org.in>  
<http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html>  
<http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm>  
<http://cdm.unfccc.int/UserManagement/FileStorage/ZBEFC58QMKTb9WHAKCPOOQGCZAXZT7>  
<http://rbidocs.rbi.org.in/rdocs/AnnualReport/PDFs/86591.pdf>  
<http://rbi.org.in/scripts/WSSView.aspx?id=12696>  
[http://www.cea.nic.in/power\\_sec\\_reports/Executive\\_Summary/index\\_Executive\\_Summary.html](http://www.cea.nic.in/power_sec_reports/Executive_Summary/index_Executive_Summary.html)  
(October month page 7)  
<http://www.windpowerindia.com/statstate.html>  
Page No: 10, S. O. 1533, Ministry of Environment & Forests (MoEF), Govt. of India,  
<http://envfor.nic.in/legis/eia/so1533.pdf>  
<http://cdm.unfccc.int/Projects/Validation/DB/ML6GGOQXE7I9A9990U8XIB024L6J7B/view.html>
  - /33/ 'Guidance for completion of Project Design Document (CDM-SSC-PDD)' version 6.2 and PDD template version 3
  - /34/ Tool to calculate the Emission Factor for an electricity system (Version 2.0, EB 50)
  - /35/ Technical specifications of the WTG
  - /36/ DOE site visit dated 14/03/2009 – 15/03/2009
  - /37/ Letter from technological supplier on the lifetime of the wind turbines
  - /38/ EB 41, para 67- start date of the project activity  
EB 49, Annex 22 - serious CDM consideration  
EB 51 annex 58 "Guidelines on the assessment of investment analysis"  
EB 40 para 40 meeting report "general guidance on benchmarking"  
EB 45 annex 60 – Modalities of communication version 01  
EB 48 annex 11 - PLF

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## A.1 Annex 1: Local Assessment

This checklist is designed to provide confirmation of in-country data and information provided in the Project Design Document for (13.75 MW wind power project in Davangere, Karnataka, India). It serves as a “**reality check**” on the project that is completed by a local assessor from SGS India

| Issue                                                                                                           | Findings                                                                                    | Source/Mean of Verification                                                                | Further Action / Clarification / Information Required?               |
|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| 1. Purchase orders for the wind mills                                                                           | Purchase order copy for 1.25 MW and 1.5MW with Suzlon Energy Ltd. has been checked.         | Purchase order copy dated 14 October 2008 for 1.25MW and for 1.5 MW dated 08 November 2008 | Appropriate and accepted                                             |
| 2. proposal for the wind mills                                                                                  | Proposal copy for 1.25 MW and 1.5MW with Suzlon Energy Ltd. has been checked.               | Proposal dated 6 September 2008                                                            | Appropriate and accepted                                             |
| 3. Host Country Approval                                                                                        | The host country approval letter is submitted.                                              | DNA of India: Letter of Approval dated 29 September 2009.                                  | CAR 01 was raised and closed with response. Appropriate and accepted |
| 4. Excel for calculation of emission reduction with sources of data                                             | Excel sheet Provided by PP for emission reduction calculation                               | Excel spreadsheet                                                                          | CAR 06 was raised and closed with response. Appropriate and accepted |
| 5. Evidence for no use of ODA for each wind mill                                                                | Document on no use of ODA is provided by PP                                                 | ODA letter dated – 23 April 2009.                                                          | Appropriate and accepted                                             |
| 6. Evidence of MOC (modalities of communication                                                                 | MOC provided                                                                                | Document dated 23 April 2009                                                               | CAR 02 was raised and closed with response. Appropriate and accepted |
| 7. Power Purchase Agreement between wind mill owner and electricity board                                       | Power purchase agreement between the WTG owner and electricity board is provided by the PP. | Power purchase agreement for 1.25MW and 1.5MW – dated 25 July 2009                         | CAR 05 was raised and closed with response. Appropriate and accepted |
| 8. Financial calculation sheets, IRR calculations and source of each assumptions used ,Suitability of Benchmark | Financial calculation sheet has been checked.                                               | Excel sheet/Interviewed                                                                    | CAR 05 was raised and closed with response. Appropriate and accepted |

| Issue                                                                                                                                                                         | Findings                                                                  | Source/Mean of Verification                                                                                                                                                                         | Further Action / Clarification / Information Required?                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| 9. Proof for CDM consideration for wind mill                                                                                                                                  | Project Participant should provide the serious CDM consideration Proof.   | Board resolution for CDM consideration for the project activity dated 10 September 2008 and subsequent meetings                                                                                     | CAR 03 was raised and closed with response. Appropriate and accepted            |
| 10. Evidence is required to be submitted that the technology used would not be changed during the crediting period.                                                           | Undertaken is provided by PP.                                             | Document dated – 03 April 2009,                                                                                                                                                                     | Appropriate and accepted                                                        |
| 11. Evidence for start date of the project activity.                                                                                                                          | Supply agreement provided by PP                                           | Supply agreement                                                                                                                                                                                    | CAR 03 was raised and closed with response. Appropriate and accepted            |
| 12. Consents and approval from pollution control board, EIA requirement needs to be checked. No objection certificate                                                         | No EIA required for the project , land clearance has been provided by PP. | Wind Mill clearance 21 January 2009 for 1.25MW and for 1.5MW from KREDL (Karnataka Renewable Energy Development Limited). Land and infrastructure clearance dated 26 November 2008 and 25 May 2009. | CAR 09 was raised and closed with response. Appropriate and accepted            |
| 13. Baseline data to establish a consistent baseline prior to start of the project activity                                                                                   | CEA data has been used for baseline determination.                        | CEA data                                                                                                                                                                                            | CAR 04 was raised and closed with response. Appropriate and accepted            |
| 14. MoM of local stakeholder consultation is required.                                                                                                                        | Copy MOM provided by the PP.                                              | Minutes of Meeting (MoM) of stakeholders meeting dated 10 December 2008                                                                                                                             | CL 11 was raised and closed with response. Appropriate and accepted             |
| 15. QA/QC procedures for data monitoring or ISO certificates for the company (if applicable) and personnel training programme, Operation & maintenance procedure and contract | PP has provided the ISO certificates and OHSAS certificates.              | ISO 9001:2000, 14001:2004 certificates and OHSAS 18001:1999 certificates. Flow chart of operation particular to the project is evidenced.                                                           | CAR 07 and CAR 08 was raised and closed with response. Appropriate and accepted |

## A.2 Annex 2: Validation Checklist

**NOTE: Please read the reporting requirements as detailed in AR6 (e.g. on applicability, baseline assessment and additionality etc) while completing related sections in this protocol**

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

| Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Reference                                                                                                                                                                                                      | Comments                                                                                                                                                                                                                                                                                                                                                                                                                         | Conclusion/<br>CARs/<br>CLs                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| <p>1. All Parties involved have approved the project activity</p> <p>1.1. Has the DNA of each Party involved in the proposed CDM project activity in section A.3 of the PDD provided a written letter of approval which confirms</p> <p>1.1.1. The country is a Party to the Kyoto Protocol</p> <p>1.1.2. Participation is Voluntary</p> <p>1.1.3. The Host Party confirming that the proposed CDM project activity contributes to sustainable development of the country Non-Annex 1 Party shall submit a letter of approval</p> <p>1.1.4. It refers to the precise proposed CDM project activity title in the PDD being submitted for registration</p> | <p>Annex 3, Clean Development Mechanism, Validation and Verification Manual, Version 01 (from this point forwarded referenced as VVM) - 49a-d /54a-b/125</p> <p>Paragraph 37 CDM Modalities and procedures</p> | <p>The Indian DNA, The National Clean Development Mechanism (CDM) Authority Ministry of Environment and Forests is ratified the Kyoto Protocol on 26 August 2002.</p> <p>The project is being proposed as a unilateral project.</p> <p>The voluntary participation of the project needs to be confirmed against the letter of approval from the DNA</p> <p>The modalities of communications needs to be evidenced to the DOE</p> | <p><del>CAR 1</del></p> <p><del>CAR 2</del></p> <p>OK</p> |
| <p>2. Please indicate the project participants listed in the PDD and check with which of these project participants does SGS have a contract for the projects validation</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p>Para 37 CDM M &amp; P</p> <p>Para 7 EB 50 Annex 48</p>                                                                                                                                                      | <p>Sargam Retails Private Limited (SRPL) is the project proponent for the project "13.75 MW wind power project in Davangere, Karnataka, India.". SGS has the contract with the PP as an independent third party validator. SGS confirms that no other service is provided or contracted with the PP as the part of integrity system.</p>                                                                                         | <p>OK</p>                                                 |
| <p>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.</p>                                                                                                                                                                                                                                                                                                                       | <p>EB 30 Para. 41.</p> <p>EB50 Annex 48 Para. 8</p>                                                                                                                                                            | <p>The PP remains the same while in the webhosted PDD and as well as on the final PDD submitting for registration.</p>                                                                                                                                                                                                                                                                                                           | <p>OK</p>                                                 |

| Requirement                                                                                                                                                                                                                                                                                   | Reference                                                                                                                                      | Comments                                                                                                                                                                                                                                                                                                                         | Conclusion/<br>CARs/<br>CLs |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| 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                                                                                                                         | The project is being proposed as a unilateral project, headed by the single PP “Sargam Retails Private Limited (SRPL)”                                                                                                                                                                                                           | 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 SGS for the purposes of the validation activity may be removed from the PDD which is submitted for registration                       | EB50 Annex 48 Para.7-9                                                                                                                         | Sargam Retails Private Limited (SRPL) is the project proponent for the project “13.75 MW wind power project in Davangere, Karnataka, India”. SGS has the contract with the PP as an independent third party validator. SGS confirms that no other service is provided or contracted with the PP as the part of integrity system. | OK                          |
| 2.4. SGS may restart the validation activity through the new or revised contract with a different set of project participants by;<br>a. Indicating that the first validation contract has been terminated and;<br>b. Republishing the PDD or revised PDD for global stakeholder consultation. | EB50 Annex 48 Para.7-9<br>(If applicable)                                                                                                      | Not applicable                                                                                                                                                                                                                                                                                                                   | OK                          |
| 2.5. The letter/s of approval are unconditional with respect to 1.1.1 to 1.1.4 above                                                                                                                                                                                                          | VVM Para. 49/54                                                                                                                                | The voluntary participation of the project needs to be confirmed against the letter of approval from the DNA                                                                                                                                                                                                                     | <del>CAR 1</del><br>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<br><br>Marrakech Accords, CDM<br>Modalities §29 and §30<br>Kyoto Protocol Art. 12.2,<br>Marrakech Accords, CDM<br>Modalities §40a | The voluntary participation of the project needs to be confirmed against the letter of approval from the DNA                                                                                                                                                                                                                     | <del>CAR 1</del><br>OK      |

| Requirement                                                                                                                                                                                                                    | Reference                                                                         | Comments                                                                                                                                                                                                                                                                                                                                                                                                            | Conclusion/<br>CARs/<br>CLs |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| 4. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for a minimum of 30 days, and the project design document and comments have been made publicly available | VVM Para. 128<br><br>Marrakech Accords, CDM<br>Modalities, §40                    | The PDD was published on 04 February 2009 on <a href="http://cdm.unfccc.int/Projects/Validation/DB/ML6GGOQXE7I9A9990U8XIB024L6J7B/view.html">http://cdm.unfccc.int/Projects/Validation/DB/ML6GGOQXE7I9A9990U8XIB024L6J7B/view.html</a><br>Parties, stakeholders and NGO's were through the web site invited to provide comments from 05 February 2009 to 06 March 2009. No comment was received during this period. | OK                          |
| 5. The project design document is in accordance with the applicable CDM requirements for completing PDDs.                                                                                                                      | VVM Para. 57<br>Marrakech Accords, CDM<br>Modalities, Appendix B, EB<br>Decisions | Yes, the project qualifies as a small scale CDM project template                                                                                                                                                                                                                                                                                                                                                    | OK                          |

Table 2 - PDD

| Checklist Question                                                                                                                            | Ref. ID                                                           | MoV*   | Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Conclusion/<br>CARs/CLs |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <b>A. General Description of Project Activity</b>                                                                                             |                                                                   |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |
| <b>A.1. Project Title</b>                                                                                                                     |                                                                   |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |
| A.1.1. Does the used project title clearly enable the reader to identify the unique CDM activity?                                             | VVM Para.56 Guidelines for completing a CDM-PDD (PDD) section A.1 | DR / I | Yes, the project title "13.75 MW wind power project in Davangere, Karnataka, India" is unique in identity. The same will be checked with HCA ( Host Country Approval)                                                                                                                                                                                                                                                                                                                                                                          | <del>CAR-1</del><br>OK  |
| A.1.2. Is there an indication of a revision number and the date of the revision?                                                              | VVM Para.56 PDD section A.1                                       | DR / I | Yes, the project PDD submitted to DOE during initial validation is version 01 dated 27 January 2009.                                                                                                                                                                                                                                                                                                                                                                                                                                           | OK                      |
| <b>A.2. Description of the Project Activity</b>                                                                                               |                                                                   |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |
| A.2.1. Does the description of the proposed CDM project activity as contained in the PDD sufficiently cover all relevant elements accurately? | VVM Para.59 PDD section A.2 see also A.4, A.4.3 and B.3           | DR / I | The project activity is the installation of wind power project of 13.75 MW (1.5 MW five numbers of S 82 Suzlon make WEG and 1.25 MW five numbers of S 64 Suzlon make WEG) by Sargam Retails Private Limited (SRPL).<br>The technical specifications of WEG need to be evidenced.<br>PLF considered for the project financials while project commissioning needs to be evidenced. The same needs to be addressed in the PDD<br>The project leads to direct and indirect employment and also contribute to economic and environment development. | <del>CAR-3</del><br>OK  |

|                                                                                                                                 |                                                                     |           |                                                                                                                                                                                                                                                                                                                                                                           |                        |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| A.2.2. Does the information provide the reader with a clear understanding of the proposed CDM activity?                         | VVM Para.60<br>PDD section A.2<br>see also A.4,<br>A.4.3 and B.3    | DR /<br>I | Yes, all the WEG along with their capacity, location number are clearly projected under section A.4.1.4 of PDD and the same as been verified on the site. All the turbines are located in Yaraganal and Kudurekonda village region in Honnali Taluka in Davangere district. These WEG's are physically identified with the latitude, longitude and WEG number coordinates | OK                     |
| A.2.3. Is all information provided consistent and in compliance with the actual situation or planning?                          | VVM Para.64<br>PDD section<br>A.2 see also<br>A.4, A.4.3 and<br>B.3 | DR /<br>I | Host is not mentioned against the country name under section A.3 of PDD.                                                                                                                                                                                                                                                                                                  | <del>CAR-3</del><br>OK |
| A.2.4. Is all information provided consistent with details provided in further chapters of the PDD?                             | VVM Para.64<br>PDD section<br>A.2                                   | DR /<br>I | Chronology of events and stage wise implementation of the WEG's needs to be addressed.                                                                                                                                                                                                                                                                                    | <del>CAR-3</del><br>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<br>PDD section A.3                                     | DR /<br>I | Yes. India is the Host country and Sargam Retails Private Limited (SRPL) is the project participant.<br>Host country India is yet to provide the letter of approval in addition to the authorization to the project participant.<br>Host Country Approval letter needs to be evidenced.                                                                                   | <del>CAR-1</del><br>OK |
| A.3.2. Is all information provided in consistency with details provided by further chapters of the PDD (in particular Annex 1)? | VVM Para. 51<br>PDD section<br>A.3                                  | DR /<br>I | The project is a unilateral project. No annex-1 is involved in the project.                                                                                                                                                                                                                                                                                               | OK                     |

#### A.4. Technical Description of the Project Activity

|                                                                                                                                                                                                        |                                   |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| A.4.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)?<br>Are the latitude and longitude of the site indicated (decimal points) | VVM Para.64<br>PDD section<br>A.4 | DR /<br>I | The project activity is a located at survey no. 111 and 28. The WEG no. K538 (14° 08'45.3" north latitude and 75° 30'43.7" east longitude), K539(14° 08'39.5" north latitude and 75° 30'50.9" east longitude), K540 (14° 08'13.3" north latitude and 75° 31'32.4" east longitude), K541(14° 08'07.4" north latitude and 75° 31'38.8" east longitude), K542 (14° 07'59.5" north latitude and 75° 31'44.1" east longitude), K 543(14° 09'17.4" north latitude and 75° 30'11.9" east longitude), K544 (14° 09'10.4" north latitude and 75° 30'17.6" east longitude)are located at survey no. 111 at Yaraganal village. The WEG no. K549 (14° 09'03.2" north latitude and 75° 30'23.1" east longitude), K550 (14° 08'57.2" north latitude and 75° 30'29.9" east longitude)and K 551 (14° 08'51.2" north latitude and 75° 30'36.7" east longitude) are located at survey no. 28 at Kudurekonda village. The both village falls under Honnali Taluka in Davangere District, Karnataka State, India. |                        |
| A.4.2. Does the proposed CDM project activity involve the alteration of existing installations or process?                                                                                             | VVM Para.64<br>PDD section<br>A.4 | DR /<br>I | The project is the new installation of 10 WEG of total generation capacity of 13.75 MW. Thus there is no alteration of existing installations or process.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | OK                     |
| A.4.3. Do the project participants possess ownership or licenses which will allow the implementation of the project at that site / those sites?                                                        | VVM Para.64<br>PDD section<br>A.4 | DR /<br>I | All statutory clearances like consent to establish/ operate, electrical department and land used clearance for the project activity need to be evidenced.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <del>CAR-9</del><br>OK |
| A.4.4. Is the category(ies) of the project activity correctly identified?                                                                                                                              | VVM Para.64<br>PDD section<br>A.4 | DR /<br>I | The project applies approved baseline methodology for small scale, AMS ID version 13 to evaluate the amount of GHG emission reductions from the regional grid which would otherwise be emitted by fossil fuel based power plants in the grid which are highly fossil fuel dependent. The latest version of the methodology needs to be used.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <del>CAR-3</del><br>OK |

|                                                                                                                                                           |                                |           |                                                                                                                                                                                                                                                                                                                                                          |                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| A.4.5. Is all information provided in compliance with actual situation or planning as available by the project participants?                              | VVM Para.64<br>PDD section A.4 | DR /<br>I | Yes the project implementation and planning is as per the actual situation specified.<br>The project schedule since the CDM consideration of the project needs to be addressed in the PDD and the same to be evidenced.<br>Chronology of events and stage wise implementation of the WEG's needs to be addressed in the PDD and the same to be evidenced | <del>CAR-3</del><br>OK |
| A.4.6. Is the table required for the indication of projected emission reductions correctly applied?                                                       | VVM Para.64<br>PDD section A.4 | DR /<br>I | Yes, the project activity on implementation as stated is expected to result in emission reduction of 28520 tCO <sub>2</sub> e annually throughout the 10 year fixed crediting period. Electricity exported to the grid will be measured monthly.<br>Project proponent needs to evidence the CER calculation sheets                                       | <del>CAR-6</del><br>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 /<br>I | Public funding from Annex I and diversion of ODA (Official Development assistance is not involved in this project.                                                                                                                                                                                                                                       | 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 /<br>I | The project does not involve any public funding and hence, no diversion of funds from official development assistance is expected.                                                                                                                                                                                                                       | OK                     |
| A.5.3. In case of public funding from Annex I Parties is it confirmed that such funding does not result in a diversion of official development assistance | PDD section A.4.5              | DR /<br>I | No annex I party is involved in the project                                                                                                                                                                                                                                                                                                              | OK                     |
| <b>B. Baseline and Monitoring Methodology</b>                                                                                                             |                                |           |                                                                                                                                                                                                                                                                                                                                                          |                        |
| <b>B.1.Choice and Applicability</b>                                                                                                                       |                                |           |                                                                                                                                                                                                                                                                                                                                                          |                        |
| B.1.1. Is the baseline methodology previously approved by the CDM Methodology Panel?                                                                      | VVM Para.68<br>PDD section B.1 | DR /<br>I | Yes, the Project applies Type-I Renewable Energy Projects and category I.D - version 13, grid connected renewable electricity generation.<br>The latest approved methodology needs to be used.                                                                                                                                                           | <del>CAR-3</del><br>OK |

|                                                                                                                |                                                            |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        |
|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| B.1.2. Has the methodology (incl. the tools) been altered from the original version as referenced in the PDD?  | VVM Para.69<br>PDD section B<br>(B.1-B.2)                  | DR /<br>I | The project applies AMS ID version 13, grid connected renewable electricity generation. Valid from 14 December 2007 onwards as on UNFCCC website.<br>The latest approved methodology needs to be used.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <del>CAR-3</del><br>OK |
| B.1.3. Is the selected approved methodology applicable to the project activity in the PDD?                     | VVM<br>Para.75/66a/68<br>/73<br>PDD section B<br>(B.1-B.2) | DR /<br>I | The project activity complies with the applicability criteria of the selected methodology AMS I.D. version 13 with the version 1 of the PDD.<br>The latest approved methodology needs to be used.<br>The project is a new wind based electricity generating system connected to regional grid that will supply electricity to the grid.<br>The project electricity generation capacity is 13.75 MW which is less than 15MW and is in accordance to the UNFCCC directives established in this regard.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <del>CAR-3</del><br>OK |
| B.1.4. Is the discussion in the PDD in conformance with all applicability criteria of the applied methodology? | VVM<br>Para.75/66b/68<br>PDD section B<br>(B.1-B.2)        | DR /<br>I | Same as section B.1.3. All the applicability criteria of the approved methodology is met.<br>The project involves installation and operation of 1.5 MW wind turbines of 5 numbers and 1.25 MW wind turbines of 5 numbers by Sargam Retails Private Limited. Suzlon Energy Limited has supplied S-82 and S-64 class wind turbine technology for this project wind turbine having 3 rotor blades of horizontal axis which has wind cut in speed of 4 m/s and cut off speed of 20m/s.<br>Thus the project activity reduces the anthropogenic GHG emissions into atmosphere by displacing the equivalent amount of energy generation from fossil fuel based power plant dependent grid.<br>The project applies approved baseline methodology for small scale, AMS ID version 13 to evaluate the amount of GHG emission reductions from the regional grid which would otherwise be emitted by fossil fuel based power plants in the grid which are highly fossil fuel dependent.<br>The project is a new installation of WEG and does not involve in any addition or retrofit or modification and thus qualifies the criteria of AMS ID version 13.<br>The latest approved methodology needs to be used. | <del>CAR-3</del><br>OK |

## B.2. Project Boundary

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                   |           |                                                                                                                                                                                                                                                                                                                                                                              |    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| B.2.1. Are all emission sources and gases related to the baseline scenario, project scenario and leakage clearly identified and described in a complete and transparent manner? Is there information on GHG emissions in proposed CDM project activity boundary as a result of the implementation of the proposed CDM project activity which are expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology. | VVM<br>Para.79/76<br>/67a<br>PDD section<br>B.3                   | DR /<br>I | The choice of the GHG indicator CO <sub>2</sub> is reasonable.<br>Since the renewable energy technology does not represent equipment transfer from another activity or the existing equipment is transferred to another activity, leakage calculations are not required as per category AMS I.D.<br>No project emission is accounted as per the methodology.                 | OK |
| B.2.2. In case of grid connected electricity projects: Is the relevant grid correctly identified in accordance with the tool to calculate emission factor of electricity system version 2 (wherever applicable) and the underlying methodology?                                                                                                                                                                                                                                                       | VVM Para.79<br>PDD section<br>B.3<br>EB 50 Annex<br>14            | DR /<br>I | The project is located in Karnataka state and the electricity is supplied to Karnataka state electricity board (KSEB). The state board is covered under southern grid of India as per Central Electricity Authority (CEA). The project calculates the combined margin data from OM and BM sourced by official data source of CEA.                                            | OK |
| B.2.3. Does the project boundary include the physical delineation of the proposed CDM project activity?                                                                                                                                                                                                                                                                                                                                                                                               | VVM<br>Para.78/79<br>PDD section<br>B.3 also see<br>section A.4.3 | DR /<br>I | As with AMS ID, the project boundary encompasses the physical, geographical site of the renewable generation sources<br>The project activity is a located at Yaraganal and Kudurekonda Village, Honnali Taluka, Davangere District, Karnataka State, India.<br>The project boundary covers power generation units, metering system, substation connected with regional grid. | OK |
| B.2.4. Are the project's geographical boundaries and the project's system boundaries (components and facilities used to mitigate GHGs) clearly defined?                                                                                                                                                                                                                                                                                                                                               | VVM<br>Para.76/79<br>PDD section<br>B.3 also see<br>section A.4.3 | DR /<br>I | The system boundary for the project has been defined to be the physical and geographical site of the renewable energy generation source that includes power generation units, metering system, substation connected with regional grid.                                                                                                                                      | OK |

### B.3. Identification of the Baseline Scenario

|                                                                                                                                                                                                                                                                                                                                  |                                                    |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| B.3.1. Does the PDD discuss the identification of the most likely baseline scenario? Does the PDD follow the steps to determine the baseline scenario required by the methodology and is the application of the methodology and the discussion and determination of the chosen baseline transparent?                             | VVM Para.67b.80/82 /86<br>PDD Section B.4/B.5      | DR / I | In the absence of the project activity the credible baseline scenario is that the power requirement in the grid would have been met by thermal power generation unit. The chosen baseline has no legal constraints and is widely used in the region.<br><br>The project proponent needs to evidence that the grid is highly dependent on thermal power generation unit.                                                                                                                                                                                                                                        | <del>GL-10</del><br>OK |
| B.3.2. Are all tools/procedures in the methodology correctly applied to identify the most reasonable baseline scenario? This includes all potential realistic and credible baseline scenarios in the discussion taking into account relevant national and/or sectoral policies, macro-economic trends and political aspirations? | VVM Para.81/82/86a -d/83/84<br>PDD Section B.4/B.5 | DR / I | The project proponent has identified the following alternatives to the project activity to arrive at the baseline scenario and additionality:<br>Electricity generation using: <ul style="list-style-type: none"> <li>• Coal (domestic/imported) power plant</li> <li>• Lignite power plant</li> <li>• Diesel power plant</li> <li>• LNG power plant</li> <li>• Naphtha power plant</li> <li>• Gas power plant</li> </ul> Electricity generation from renewable biomass and hydro as an alternative is not discussed and also project proponent need to demonstrate the most likely alternative in the region. | <del>CAR-4</del><br>OK |
| B.3.3. Is the choice of the baseline compatible with the available data?                                                                                                                                                                                                                                                         | VVM Para.86b-c/95<br>PDD Section B.4/B.5           | DR / I | Same as B.3.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <del>CAR-4</del><br>OK |
| B.3.4. Is conservativeness addressed in the way of identifying the baseline?                                                                                                                                                                                                                                                     | VVM Para.90<br>PDD Section B.4/B.5                 | DR / I | The project proponent needs to provide the exact link for the data addressed on PDD to evidence authenticity and the conservativeness of the baseline.                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <del>CAR-4</del><br>OK |

|                                                                                                                                                                                                                                              |                                                  |           |                                                                                                                                                                                                                                                                                                                                                                                                                             |             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| B.3.5. Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?                                                                                                                        | VVM<br>Para.90/91<br>PDD Section<br>B.4/B.5      | DR /<br>I | Same as B.3.2                                                                                                                                                                                                                                                                                                                                                                                                               | CAR-4<br>OK |
| B.3.6. Is there a verifiable description of the baseline scenario? Does this include a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed CDM project activity? | VVM<br>Para.86e/85<br>PDD Section<br>B.4/B.5     | DR /<br>I | Same as B.3.2                                                                                                                                                                                                                                                                                                                                                                                                               | CAR-4<br>OK |
| <b>B.4.Additionality</b>                                                                                                                                                                                                                     |                                                  |           |                                                                                                                                                                                                                                                                                                                                                                                                                             |             |
| B.4.1. Does the PDD clearly demonstrate the additionality using the approach as specified in the methodology and by following all the required steps?                                                                                        | VVM<br>Para.67d/95<br>PDD Section<br>B.1/B.4/B.5 | DR /<br>I | The additionality for the project is assessed on the investment barrier, technological barrier and barriers due to prevailing practices and analysis to demonstrate that the project activity would otherwise not be implemented due to one or more barriers listed in attachment A of appendix B of simplified baseline and monitoring methodology under simplified modalities and procedure for small scale CDM activity. | OK          |

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| <p>B.4.2. In case of using the additionality tool:<br/>Is the 'Additionality Tool' used in the PDD latest version? If an earlier version has been used, do the changes impact the discussion in the PDD?<br/>Are all steps followed in a transparent manner?</p> | <p>PDD Section<br/>B.1/B.4/B.5</p> | <p>DR /<br/>I</p> | <p>The project additionality is demonstrated with one or more barriers listed in attachment A of appendix B of simplified baseline and monitoring methodology under simplified modalities and procedure for small scale CDM activity.</p> <p>Investment barrier: Investment risk is argued on the basis of project financials IRR analysis. The benchmark for the project is considered as the prime lending rate (PLR) provided by Reserve Bank of India (RBI) for 2007-2008. As conservative the lowest value of PLR 12.25 % is considered.</p> <p>PLR proof needs to be evidenced.</p> <p>Power generation guarantee offered by Suzlon Energy Limited to the PP needs to be evidenced. How is the PLF of the plant assessed for consideration of CDM – evidence the same.</p> <p>Detail excel financial calculation sheet needs to be provided with relevant evidence on the parameters used.</p> <p>PP needs to demonstrate and evidence the parameters considered for project cost, cost of O&amp;M, insurance, depreciation as per companies act and income tax, debts and equity, moratorium of loan and tariff.</p> <p>Investment barrier: The investment barrier is argued considering the cost of generation with other alternatives. It is been argued that the project cost for wind energy is Rs. 5.6 crores/ MW at 22%-26% PLF which is costlier than any other power plants. This needs to be evidenced.</p> <p>Sensitive analysis is carried out on the basis of 5 to 10% increase in the power generation and capital cost. PP has to evidence how 10% increase in power generation is not achievable with the project as the project IRR crosses the benchmark with 10% escalation in power generation.</p> | <p><del>CAR-5</del><br/>OK</p> |
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|                                                                                                                                                                                                                                                                                                 |                                     |           | <p>Barrier due to prevailing practices: It is argued that the wind energy share approximately 8% of the total energy in India as per ministry of power and off this 8% only 17.6% is generated by Karnataka state and thus this wind project is not a common practice in the region. This argument needs to be evidenced and also need to justify why the region is restricted only to the state where as the electricity is supplied to the southern regional grid.</p> <p>It has to be demonstrated why Project proponent being in a different business has ventured into wind energy generation without viability of the project as argued under PDD.</p> <p>Please clarify how the technological barriers are project specific.</p> | <del>CAR-5</del><br>OK |
| B.4.3. Has all information been backed up with references, sources and certification? Is the data presented credible and reliable with complete transparency to all available data and documentation?                                                                                           | VVM<br>Para.93/91<br>PDD Section B  | DR /<br>I | Same as B.4.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <del>CAR-5</del><br>OK |
| B.4.4. Is the discussion on additionality and the evidence provided consistent with the starting date of the project?<br>If the project activity start date is prior to the validation is it discussed how the CDM was taken into account in the decision to go ahead with the project activity | VVM<br>Para.102b<br>PDD Section B.5 | DR /<br>I | <p>The start date of the project activity is mentioned as 03 November 2008 on the PDD, which is the date of the purchase order for the wind turbines.</p> <p>The incentives from CDM were seriously considered for the project activity in line with the EB41. The PP has informed the UNFCCC secretariat about the project undertaking with CDM on 09 December 2008.</p> <p>Since the project start date is prior to the intimation of the CDM activity of the project, PP needs to provide the chronology of the internal initiative of the project undertaking.</p> <p>The chronology of the events needs to be addressed under section B.5 of PDD and evidence the same needs to be provided.</p>                                   | <del>CAR-3</del><br>OK |

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| B.4.5. For an existing project activity with a start date before 2 August 2008, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation, is the real documented evidence for an assessment of real and continuing actions available for validation and is this evidence authentic? | EB 49, annex.22                                | DR / I | The start date of the project was later to 2 August 2008.                                                                                                                                                                                                                                                                                                                                                                                                    | OK                     |
| B.4.6. If an investment analysis has been used, has it been shown that the proposed project activity is economically or financially less attractive than at least one other alternative without the revenue from the sale of CERs?                                                                                                     | VVM Para. 106, 107, 109 112a-c PDD Section B.5 | DR / I | Same as B.4.2                                                                                                                                                                                                                                                                                                                                                                                                                                                | <del>CAR-3</del><br>OK |
| B.4.7. 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. 110 PDD Section B.5                  | DR / I | The benchmark for the project is considered as the prime lending rate (PLR) provided by Reserve Bank of India (RBI) for 2007-2008. As conservative the lowest value of PLR 12.25 % is considered.                                                                                                                                                                                                                                                            | OK                     |
| B.4.8. If a barrier analysis has been used, has it been shown that the proposed project activity faces barriers that prevent the implementation of this type of proposed project activity but would not have prevented the implementation of at least one of the alternatives?                                                         | VVM Para. 114 115a-b/116 PDD Section B.5       | DR / I | Yes, the alternatives of the project are addressed in the PDD.<br>Electricity generation from renewable biomass and hydro as an alternative is not discussed and also project proponent need to demonstrate the most likely alternative in the region.<br>The comparison of the project with realistic and credible alternative (ie thermal power generation plant connected with grid) is based on the investment barriers. The same needs to be evidenced. | <del>CAR-5</del><br>OK |
| B.4.9. Have the 'guidelines for objective demonstration and assessment of barriers' been followed? Have all applicable steps been considered and substantiated with objective evidence?                                                                                                                                                | EB 50 Annex 13                                 | DR / I | The evidence as per the "guidelines for objective demonstration and assessment of barriers" is not applicable as since the additionality argument is based on the investment analysis and not on barriers.                                                                                                                                                                                                                                                   | OK                     |

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| B.4.10. Is the discussion on additionality consistent with the identification of all plausible and credible baseline scenarios?                                                                                                      | VVM Para. 105<br>PDD Section B.5         | DR /<br>I | Same as B.4.7                                                                                                                                    | OK                     |
| B.4.11. 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<br>PDD Section A.4.3/B.5   | DR /<br>I | The project activity is in line with the national and sectoral policies and national policies favors the development of renewable energy sources | OK                     |
| B.4.12. Has it been shown that the project is not common practice?                                                                                                                                                                   | VVM Para. 119a/b<br>PDD Section B.5      | DR /<br>I | Same as B.4.2                                                                                                                                    | <del>CAR-5</del><br>OK |
| B.4.13. 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<br>PDD Section B.5 | DR /<br>I | Same as B.4.2                                                                                                                                    | <del>CAR-5</del><br>OK |

### B.5.Application of the Baseline Methodology

|                                                                                                              |                                                        |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                     |
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| <p>B.5.1. Has the approved methodology been applied correctly for determining <b>baseline emissions</b>?</p> | <p>VVM Para. 91d<br/>PDD Section B (B.6.1 -B.71)</p>   | <p>DR / I</p> | <p>Yes, the project applies AMS I.D, version 13, sectoral scope 01, EB 36 – the approved simplified baseline methodology for grid connected renewable electricity generation. The project is applicable under this methodology as it is a renewable wind power based electricity generating system that displaces fossil fuels dependency in the grid..</p> <p>The project electricity generation capacity is 13.75 MW which is less then 15MW and is accordance to the UNFCCC directives established in this regard.</p> <p>For the electricity generation in wind turbines, the formula under case 9 (a) of AMS ID version 13 is applied, where baseline (Bey) is equal to the net amount of electricity supplied by the project activity (Egy) times the grid emission factor of the connected grid calculated as per the guidelines provided.</p> <p>As the project activity exports power to the southern regional grid, the emission factor of the southern regional grid is considered and is sourced from the official published CEA website.</p> <p>The detail calculation sheets and all relevant literature are to be evidenced.</p> <p>The latest methodology version needs to be used to prove the applicability and the same needs to update in PDD and evidence for validation.</p> | <p><del>CAR-6</del><br/><del>CAR-3</del><br/>OK</p> |
| <p>B.5.2. Has the approved methodology been applied correctly for determining <b>project emissions</b>?</p>  | <p>VVM Para. 90/91d<br/>PDD Section B (B.6.2-B.71)</p> | <p>DR / I</p> | <p>No project emission is accounted as per the methodology.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p>OK</p>                                           |

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| B.5.3. Has the approved methodology been applied correctly for determining <b>leakage</b> ?                                                                                                       | VVM Para. 91d<br>PDD Section B (B.6.2 -B.71)     | DR / I | Since the renewable energy technology does not represent equipment transfer from another activity or the existing equipment is transferred to another activity, leakage calculations are not required as per category AMS I.D version 13.<br><br>The latest methodology version needs to be used.                                                                                                                                                                                                                                                                                                                  | CAR-3<br>OK |
| B.5.4. Where applicable, has the approved methodology been applied correctly for the <b>direct calculation of emission reductions</b> ?                                                           | VVM Para 88/91d<br>PDD Section B (B.6.2 -B.71)   | DR / I | For the electricity generation in wind turbines, the formula under case 9 (a) of AMS ID version 13 is applied, where baseline (Bey) is equal to the net amount of electricity supplied by the project activity (Egy) times the grid emission factor of the connected grid calculated as per the guidelines provided.<br>The latest methodology version needs to be used.                                                                                                                                                                                                                                           | CAR-3<br>OK |
| B.5.5. Where there is an option between different equations or parameters, has the methodological choices for the project been explained, have they been properly justified and are they correct? | VVM Para.89/90/91<br>PDD Section B (B.6.2 -B.71) | DR / I | For the electricity generation in wind turbines, the formula under case 9 (a) of AMS ID version 13 is applied, where baseline (Bey) is equal to the net amount of electricity supplied by the project activity (Egy) times the grid emission factor of the connected grid calculated as per the guidelines provided.<br><br>As the project activity exports power to the southern regional grid, the emission factor of the southern regional grid is calculated based on the default values of OM and BM availed from the official published CEA website.<br><br>The latest methodology version needs to be used. | CAR-3<br>OK |
| B.5.6. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?                                                                                                  | PDD Sections B.5-C                               | DR / I | Pending on closure of CARs/CLs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CAR-6<br>OK |
| <b>B.6.Ex-ante Data and Parameters Used</b>                                                                                                                                                       |                                                  |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |
| B.6.1. Are the data provided in compliance with the methodology?                                                                                                                                  | VVM Para. 91/67c<br>PDD Section B.6.3B.6.4       | DR / I | Ex-ante data relating to EF of grid are default values curled out from CEA.<br>Exact decimal points needs to be considered.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | CAR-6<br>OK |

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| B.6.2. Is all the data derived from official data sources or replicable records and have these been correctly quoted?                                                                                                                                                                                                                                                                                                                                                                                         | VVM Para. 91a/b<br>PDD Section B.6.3/B.6.4 | DR / I | Same as B.6.1                  | <del>CAR-6</del><br>OK |
| B.6.3. Is the vintage of the baseline data correct?                                                                                                                                                                                                                                                                                                                                                                                                                                                           | PDD Section B.6.3/B.6.4                    | DR / I | Pending on closure of CARs/CLs | <del>CAR-6</del><br>OK |
| B.6.4. Is all the data appropriate and correctly applied to the CDM project activity?                                                                                                                                                                                                                                                                                                                                                                                                                         | VVM Para. 91c<br>PDD Section B.6.3/B.6.4   | DR / I | Pending closure of CARs/CLs    | <del>CAR-6</del><br>OK |
| B.6.5. Are data and parameters that are not being monitored and remained fixed throughout the crediting period appropriately assessed, correct, and will they result in conservative estimates?                                                                                                                                                                                                                                                                                                               | VVM Para. 90<br>PDD Section B.6.3/B.6.4    | DR / I | Pending closure of CARs/CLs    | <del>CAR-6</del><br>OK |
| B.6.6. Is sampling approach used for any parameters?                                                                                                                                                                                                                                                                                                                                                                                                                                                          | EB 50 Annex 30 Para. 30                    | DR / I | Not applicable                 | OK                     |
| <p>B.6.7. Where applicable, the plant load factor shall be defined ex-ante in the CDM-PDD according to one of the following three options:</p> <p>(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;</p> <p>(b) The plant load factor determined by a third party contracted by the project participants (e.g. an engineering company)</p> | EB 48 Annex 11                             | DR / I | The PLF needs to be evidenced. | <del>CAR-3</del><br>OK |

| B.7.Calculation of Emissions Reductions                                                                                                 |                                        |        |                                                                                                                                                                                                                                                                                                                                                                                                              |                        |
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| B.7.1. Has the approved methodology been applied correctly for determining <b>emission reductions</b> ?                                 | VVM Para. 91d<br>PDD Section A.4.4/B.6 | DR / I | The methodology for calculating the emission reductions is as per the option 9(a) of AMS-I.D version 13 that consist of metering the electricity generation from the project activity multiplied by an emission coefficient of grid.<br>The detail calculation sheets and all relevant literature are to be evidenced.                                                                                       | <del>CAR-6</del><br>OK |
| B.7.2. Are the emission reduction calculations documented in a complete and transparent manner?                                         | VVM Para. 91e<br>PDD Section B.6       | DR / I | Same as above B.7.1                                                                                                                                                                                                                                                                                                                                                                                          | <del>CAR-6</del><br>OK |
| B.7.3. Is the projection based on same procedures as used for later monitoring or acceptable alternative models?                        | PDD Section B.6                        | DR / I | Same as above B.7.1                                                                                                                                                                                                                                                                                                                                                                                          | <del>CAR-6</del><br>OK |
| B.7.4. Is the calculation of the emission reduction correct?                                                                            | VVM Para. 91e<br>PDD Section B.6       | DR / I | Same as above B.7.1                                                                                                                                                                                                                                                                                                                                                                                          | <del>CAR-6</del><br>OK |
| B.8.Emission Reductions                                                                                                                 |                                        |        |                                                                                                                                                                                                                                                                                                                                                                                                              |                        |
| B.8.1. Is the form/table required for the indication of projected emission reductions correctly applied?                                | PDD Section A.4.4/ Section B.6         | DR / I | The table has been applied correctly.                                                                                                                                                                                                                                                                                                                                                                        | OK                     |
| B.8.2. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period? | PDD Section A.4.4/ Section B.6         | DR / I | Yes, the resulting emission reductions from the proposed project activity are real, measurable and will give long term benefits related to the mitigation of climate change. It is expected that the project activity will result in reduction of approximately 28520 tCO <sub>2</sub> e per year.<br>This shall be confirmed after evaluating the detail excel calculation sheets and closure of CAR's/CL's | <del>CAR-6</del><br>OK |

### B.9. Monitoring Methodology

|                                                                                                                                                                                                                                                                                                                                        |                                                       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |
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| B.9.1. Does the monitoring methodology provide a consistent approach in the context of all parameters to be monitored and further information provided by the PDD?<br><br>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<br>PDD Section B.7-B.8 see also Annex 4 | DR / I | The project is in line with the monitoring methodology for small-scale CDM project activity category AMS I.D version 13 “grid connected renewable electricity generation”.<br>The monitoring plan provides for collection and archiving of most of the necessary data for estimation of GHG emissions within project boundary.<br>For baseline calculations, electricity generated by the project activity is to be monitored and calculated by metering the electricity generated. The invoice will be calculated as per the tariff fixed by the BESCO. The power generated will be recorded by main and check meters and same will be documented for calculation for individual project participant. | OK          |
| B.9.2. Does the monitoring methodology apply consistently the choice of the option selected for monitoring both of project and baseline emissions?                                                                                                                                                                                     | PDD Sections B and C                                  | DR / I | The monitoring and calculation to the individual project participant needs to be clearly specified in the PDD.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CAR-7<br>OK |

### B.10. Data and Parameters Monitored

|                                                                                                                                                                                                                                                                        |                                                   |        |                                                                                                                                                                                                               |             |
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| B.10.1. Does the monitoring plan in the PDD comply with the approved methodology provided for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period? | VVM Para. 91a/91d/121/79<br>PDD Section B.7-B.7.2 | DR / I | The data archiving system has been discussed for the parameters to be monitored in the PDD.<br>The monitoring and calculation to the individual project participant needs to be clearly specified in the PDD. | CAR-7<br>OK |
| B.10.2. 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 / I | The choice of the GHG indicator CO <sub>2</sub> is reasonable.                                                                                                                                                | OK          |
| B.10.3. Will it be possible to determine the specified project GHG indicators?                                                                                                                                                                                         | PDD Section B.6.2-B.8                             | DR / I | The net electricity supplied and the amount imported from the grid can be measured and calculated accurately. The emission reduction directly depends on the same.                                            | OK          |

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| B.10.4. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?                                               | PDD Section B.6.2-B.7.1                                            | DR / I | Yes, power generation/usage meters are available at the project site.<br>The monitoring and calculation to the individual project participant needs to be clearly specified in the PDD. | <del>CAR-7</del><br>OK |
| B.10.5. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records? | PDD Section B.6.2-B.7.1                                            | DR / I | Same as B.10.4                                                                                                                                                                          | <del>CAR-7</del><br>OK |
| B.10.6. 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 | Pending to the closure of other CAR/CL                                                                                                                                                  | <del>CAR-7</del><br>OK |
| B.10.7. Are all formulae used to determine project emission clearly indicated and in compliance with the monitoring methodology.                                                                                            | PDD Section B.6.2-B.7.1                                            | DR / I | Pending to the closure of other CAR/CL                                                                                                                                                  | <del>CAR-7</del><br>OK |
| <b>B.11. Quality Control (QC) and Quality Assurance (QA) Procedures</b>                                                                                                                                                     |                                                                    |        |                                                                                                                                                                                         |                        |
| B.11.1. Is the selection of data undergoing quality control and quality assurance procedures complete?                                                                                                                      | VVM Para. 121<br>Refer to all data within the PDD Inc. B.6.2-B.7.1 | DR / I | Yes.                                                                                                                                                                                    | OK                     |
| B.11.2. Is the belonging determination of uncertainty levels done correctly for each ID in a correct and reliable manner?                                                                                                   | Refer to all data within the PDD Inc. B.4/B.7.2/Annex 4            | DR / I | The contracted O & M company is ISO certified and all the documentation and quality control is as per the standard procedure.                                                           | OK                     |
| B.11.3. Are quality control procedures and quality assurance procedures sufficiently described to ensure the delivery of high quality data?                                                                                 | VVM Para 121                                                       | DR / I | Same as above B.11.2                                                                                                                                                                    | OK                     |

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| B.11.4. Is it ensured that data will be bound to national or internal reference standards?                                                                 | VVM Para. 86d           | DR / I | Same as above B.11.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | OK                     |
| B.11.5. 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 / I | Same as above B.11.2 , The meter readings are under the control of the govt. organization BESCOM.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | OK                     |
| <b>B.12. Operational and Management Structure</b>                                                                                                          |                         |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                        |
| B.12.1. Is the authority and responsibility of project management clearly described?                                                                       | PDD Section B.8/Annex 1 | DR / I | <p>Yes, the project developer has appointed CDM management team to initiate and coordinate with all the activities related to CDM.</p> <p>A team of personnel experienced in electrical and mechanical engineering and project operations, lead by a Project coordinator is responsible to coordinate with all the activities related to CDM and reporting to project head.</p> <p>The CDM management team is responsible for:</p> <ul style="list-style-type: none"> <li>a. Maintenance of monitoring equipment and installations</li> <li>b. Day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)</li> <li>c. Registration, monitoring, measurement and reporting, calibration of monitoring equipment</li> <li>d. Procedures identified for dealing with possible monitoring data adjustments and uncertainties.</li> <li>e. Procedures identified for review of reported results/data.</li> <li>f. Procedures for internal audit of GHG, performance reviews and corrective actions</li> </ul> <p>All the records are kept under safe custody of the project head for the entire crediting period + 2 years.</p> <p>The same needs to be clearly addressed in the PDD.</p> | <del>CAR-8</del><br>OK |
| B.12.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?                                     | PDD Section B.8/Annex 1 | DR / I | Yes it is clearly described.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | OK                     |

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| B.12.3. Are procedures identified for training of monitoring personnel?                                                                                                                    | PDD Section B.8/Annex 1 | DR / I | No extensive initial training is needed for the operation and maintenance of this type of technology. Training has been sufficiently administered to the personnel operating the wind plant by the equipment supplier, which is deemed reasonable.<br><br>The same needs to be incorporated in the PDD. | <del>CAR-8</del><br>OK |
| <b>B.13. Monitoring Plan (Annex 4)</b>                                                                                                                                                     |                         |        |                                                                                                                                                                                                                                                                                                         |                        |
| B.13.1. Is the monitoring plan developed in a project specific manner clearly addressing the unique features of the CDM activity?                                                          | VVM Para. 122a          | DR / I | Pending closure of CARs/CLs                                                                                                                                                                                                                                                                             | <del>CAR-8</del><br>OK |
| B.13.2. Does the monitoring plan completely describe all measures to be implemented for monitoring all parameter required, including measures to be implemented for ensuring data quality? | VVM Para. 122b          | DR / I | Pending closure of CARs/CLs                                                                                                                                                                                                                                                                             | <del>CAR-8</del><br>OK |
| B.13.3. Does the monitoring plan provide information on monitoring equipment and respective positioning in order to safeguard a proper installation?                                       | VVM Para. 122b          | DR / I | The flow chart of the installations is provided in the PDD.<br>The PDD needs to update the flow chart to the actual situation on site.                                                                                                                                                                  | <del>CAR-8</del><br>OK |
| B.13.4. Are procedures identified for calibration of monitoring equipment?                                                                                                                 | VVM Para. 122a-c        | DR / I | Yes, All the meters will be regularly calibrated according to calibration scheduled programmed by BESCOM and the meters are recalibrated annually. The calibration responsibility lies with the BESCOM. Any faulty meters observed will be duly replaced.                                               | OK                     |
| B.13.5. Are procedures identified for maintenance of monitoring equipment and installations?                                                                                               | VVM Para. 122a-c        | DR / I | M/s Suzlon Energy Limited and KPTCL are responsible for maintenance of monitoring equipments                                                                                                                                                                                                            | OK                     |
| B.13.6. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)                   | VVM Para. 122a-c        | DR / I | Same as B.12.1                                                                                                                                                                                                                                                                                          | <del>CAR-8</del><br>OK |

|                                                                                                                                                                                    |                                      |        |                                                                                                                                                                    |                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| B.13.7. Are procedures identified for dealing with possible monitoring data adjustments and missing data allowing redundant reconstruction of data in case of monitoring problems? | VVM Para. 122a-c                     | DR / I | Same as B.12.1                                                                                                                                                     | <del>CAR-8</del><br>OK |
| B.13.8. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?                                                    | VVM Para.122a-c                      | DR / I | Same as B.12.1                                                                                                                                                     | <del>CAR-8</del><br>OK |
| B.13.9. Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?                                             | VVM Para. 122a-c                     | DR / I | Same as B.12.1                                                                                                                                                     | <del>CAR-8</del><br>OK |
| B.13.10. Describe the ability of the project participants to implement the monitoring plan.                                                                                        | VVM Para. 122c                       | DR / I | Same as B.12.1                                                                                                                                                     | <del>CAR-8</del><br>OK |
| <b>B.14. Baseline Details</b>                                                                                                                                                      |                                      |        |                                                                                                                                                                    |                        |
| B.14.1. Is there any indication of a date when determining the baseline?                                                                                                           | PDD Section B.8/Annex 3              | DR / I | The date of completion of baseline determination is 12 December 2008                                                                                               | OK                     |
| B.14.2. Is this consistent with the time line of the PDD history?                                                                                                                  | Also see revision history of the PDD | DR / I | Yes, the project start date is 03 November 2008 which is denoted by the purchase order of the turbines.<br>The chronology of events needs to be updated in the PDD | <del>CAR-3</del><br>OK |
| B.14.3. Is all data required provided in a complete manner by annex 3 of the PDD?                                                                                                  | PDD Annex 3                          | DR / I | Yes                                                                                                                                                                | OK                     |
| B.14.4. What is the documented crediting period of the project? Is this inline with available data?                                                                                |                                      | DR / I | The documented crediting period of the project is 10 years fixed in the PDD version 1 and 7 years renewal in the version 2 of the PDD. Please clarify.             | <del>CAR-3</del><br>OK |
| B.14.5. 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 / I | This is applicable for the retrofit projects as per the Methodology. Not applicable for the project activity                                                       | OK                     |

|                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                       |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| <p>B.14.6. In cases where the <i>'Tool to determine the remaining lifetime of equipment'</i> has been used the project participants may use one of the following options to determine the remaining lifetime of the equipment:</p> <p>i. Use manufacturer's information on the technical lifetime of equipment and compare to the date of first commissioning;</p> <p>ii. Obtain an expert evaluation;</p> <p>iii. Use default values.</p> | <p>EB 50 Annex 15</p>                                 | <p>DR / I</p> | <p>NA</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <p>OK</p>                      |
| <p><b>C. Duration of the Project / Crediting Period</b></p>                                                                                                                                                                                                                                                                                                                                                                                |                                                       |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                |
| <p>C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?</p>                                                                                                                                                                                                                                                                                                                                     | <p>VVM Para. 102a-c<br/>PDD Section C.1.1/C.1.2</p>   | <p>DR / I</p> | <p>The operating life time of the project activity is 20 years. Starting date of the project activity is identified to be 03 November 2008 which is the date of the purchase order for wind turbines.<br/>Proof for the same needs to be provided.<br/>Proof/evidence for CDM consideration prior to the project needs to be furnished.<br/>The total chronology of the key events related to the proposed project needs to be evidenced.<br/>The operational lifetime of the project needs to be as per the lifetime of project on technical specifications.</p> | <p><del>CAR-3</del><br/>OK</p> |
| <p>C.1.2. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?</p>                                                                                                                                                                                                                                           | <p>VVM Para. 102a<br/>PDD Section C.2/C.2.1/C.2.2</p> | <p>DR / I</p> | <p>The start date of the crediting period is 01 August 2010 for the fixed crediting period of 10 years.<br/>The start date is technically not feasible as it should be four weeks past the date of submission of project for registration.</p>                                                                                                                                                                                                                                                                                                                    | <p><del>CAR-3</del><br/>OK</p> |

|                                                                                                                            |                                                     |        |                                                                                                                                                                                                                                                                                                                                                                                        |                        |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| C.1.3. Does the project's operational lifetime exceed the crediting period                                                 | VVM Para. 102a<br>PDD Section C.1.2/C.2.1.1/C.2.1.2 | DR / I | Yes.                                                                                                                                                                                                                                                                                                                                                                                   | OK                     |
| 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<br>PDD Section C.1.1/C.2.1.1     | DR / I | The start date of the project activities is 03 November 2008 which is after the 2 <sup>nd</sup> August 2008 and thus classified as new project activities.<br>The project activity has been communicated to UNFCCC for the consideration under CDM and is confirmed against the communication letter dated 09 December 2008.                                                           | OK                     |
| <b>D. Environmental Impacts</b>                                                                                            |                                                     |        |                                                                                                                                                                                                                                                                                                                                                                                        |                        |
| D.1.1. Does the project comply with environmental legislation in the host country?                                         | VVM Para. 131<br>PDD section D                      | DR / I | Indian legislation does not warrant an EIA to be done for this type of project activity.<br>The PDD does not address the possible environmental impacts and its severity during construction & operation.                                                                                                                                                                              | <del>CAR-9</del><br>OK |
| D.1.2. Has an analysis of the environmental impacts of the project activity been sufficiently described?                   | VVM Para. 131<br>PDD section D                      | DR / I | Same as section D.1.1                                                                                                                                                                                                                                                                                                                                                                  | <del>CAR-9</del><br>OK |
| D.1.3. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved? | VVM Para. 131<br>PDD section D                      | DR / I | As per the EIA notification dated 14 <sup>th</sup> September 2006, Ministry of Environment and Forest (MoEF), Govt. of India, the wind projects are not included in the list of project that has to get prior environmental clearance from the state of central authorities.<br>The notification letter needs to be produced to DOE and the web linkage shall be addressed in the PDD. | <del>CAR-9</del><br>OK |
| D.1.4. Will the project create any adverse environmental effects?                                                          | VVM Para. 131<br>PDD section D                      | DR / I | No negative environmental impacts envisaged due to the project activity.                                                                                                                                                                                                                                                                                                               | OK                     |
| D.1.5. Are trans-boundary environmental impacts considered in the analysis?                                                | VVM Para. 131<br>PDD section D                      | DR / I | No trans boundary environmental impact is envisaged.                                                                                                                                                                                                                                                                                                                                   | OK                     |

|                                                                                              |                                   |        |                                                                                                                                                                                                                                                                                                                                                              |                        |
|----------------------------------------------------------------------------------------------|-----------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| D.1.6. Have identified environmental impacts been addressed in the project design?           | VVM Para. 131<br>PDD section D    | DR / I | Same as D.1.1                                                                                                                                                                                                                                                                                                                                                | OK                     |
| <b>E. Stakeholder Comments</b>                                                               |                                   |        |                                                                                                                                                                                                                                                                                                                                                              |                        |
| E.1.1. Have relevant stakeholders been consulted?                                            | VVM Para. 128a<br>PDD Section E.1 | DR / I | The local stakeholder consultation was organized by SRPL on 10 December 2008 at the SRPL wind mill site at Davangere District, Karnataka State. The identified local stakeholders are the local farmers, gram sarpanch members, contract employees, vendor and representatives from Suzlon Energy Limited.<br>The documentary evidence needs to be produced. | <del>GL-11</del><br>OK |
| E.1.2. Have appropriate media been used to invite comments by local stakeholders?            | VVM Para. 128a<br>PDD Section E.1 | DR / I | The local stakeholders were communicated and invited through circulating notice on public places regarding the meeting.<br>Proof for the communication and for conducting consultation needs to be evidenced.                                                                                                                                                | <del>GL-11</del><br>OK |
| E.1.3. Is the undertaken stakeholder process described in a complete and transparent manner? | VVM Para. 128b<br>PDD Section E.1 | DR / I | The copy of original minutes of the local stakeholder meeting needs to be evidenced.                                                                                                                                                                                                                                                                         | <del>GL-11</del><br>OK |
| E.1.4. Is a summary of the stakeholder comments received provided?                           | VVM Para. 128b<br>PDD Section E.2 | DR / I | Yes. The comments from the stakeholders have been documented. No negative comments were received.                                                                                                                                                                                                                                                            | OK                     |
| E.1.5. Has due account been taken of any stakeholder comments received?                      | VVM Para. 128b<br>PDD Section E.3 | DR / I | No negative comments were received.                                                                                                                                                                                                                                                                                                                          | OK                     |

## References

| Reference ID | Title / Description                                                                                                    | Comments                         |
|--------------|------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| 1            | PDD version 1 dated 27/01/2009 (submitted for international stakeholder's comments) and PDD version 2 dated 02/12/2009 | Table 2 section A, B, C, D and E |
| 2            | AMS I D version 13 and AMS I D version 15                                                                              | Table 2 section B, Table 1,      |
| 3            | UNFCCC website ( <a href="http://cdm.unfccc.int/index.html">http://cdm.unfccc.int/index.html</a> )                     | Table 2 section B                |

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

#### Findings Overview

Findings from validation of (13.75 MW wind power project in Davangere, Karnataka, India)

|                            | CARs | CLs | FARs |
|----------------------------|------|-----|------|
| <b>Total Number raised</b> | 9    | 2   |      |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |            |               |                         |       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|---------------|-------------------------|-------|
| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 05/04/2009 | Raised by: | Lead Assessor |                         |       |
| Type:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | CAR        | Number:    | 01            | Reference:              | A.3.1 |
| <b>Lead Assessor Comment:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |            |               |                         |       |
| Letter of approval issued by Host Country (India) Designated National Authority (DNA) to be submitted by the project proponent.                                                                                                                                                                                                                                                                                                                                                        |            |            |               |                         |       |
| <b>Project Participant Response:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |            |               | <b>Date:</b> 02/12/2009 |       |
| Letter on the Host Country Approval (HCA) by the Ministry of Environment & Forest (MoEF) for this project activity has been submitted to the DOE. Ref no: [4/4/2009 – CCC] dated 29/09/2009 for validation.                                                                                                                                                                                                                                                                            |            |            |               |                         |       |
| <b>Documentation Provided by Project Participant:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |            |               |                         |       |
| <i>Host Country Approval (HCA)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |            |               |                         |       |
| <b>Information Verified by Lead Assessor:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |            |               |                         |       |
| Consistency of project activity name, authorised project proponent by the host country DNA.                                                                                                                                                                                                                                                                                                                                                                                            |            |            |               |                         |       |
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>                                                                                                                                                                                                                                                                                                                                                                                                                       |            |            |               | <b>Date:</b> 20/12/2009 |       |
| Host country approval is confirmed against the name and project activity clearance. Project participant has submitted the Host Country Approval from Designated National Authority, MoEF for the proposed project activity. The reference number for the same is 4/4/2009-CCC dated 29/09/2009. The name of the project activity mentioned in HCA is the same as in the section A.1 of the revised PDD and is accepted.<br>Accepted and formally concluded. Thus CAR 01 was closed out |            |            |               |                         |       |
| <b>Acceptance and Close out by Lead Assessor:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |            |               | <b>Date:</b> 20/12/2009 |       |

|                                                                                                                                  |            |            |               |                         |           |
|----------------------------------------------------------------------------------------------------------------------------------|------------|------------|---------------|-------------------------|-----------|
| Date:                                                                                                                            | 05/04/2009 | Raised by: | Lead Assessor |                         |           |
| Type:                                                                                                                            | CAR        | Number:    | 02            | Reference:              | Table 1-3 |
| <b>Lead Assessor Comment:</b>                                                                                                    |            |            |               |                         |           |
| Letter of The modalities of communications needs to be submitted by the project proponent.                                       |            |            |               |                         |           |
| <b>Project Participant Response:</b>                                                                                             |            |            |               | <b>Date:</b> 02/12/2009 |           |
| Letter on the modalities of communication (MoC) stating the focal point for this project activity has been submitted to the DOE. |            |            |               |                         |           |
| <b>Documentation Provided by Project Participant:</b>                                                                            |            |            |               |                         |           |
| <i>Evidence on modalities of communication (MoC)</i>                                                                             |            |            |               |                         |           |
| <b>Information Verified by Lead Assessor:</b>                                                                                    |            |            |               |                         |           |
| The Modalities of Communications is been received.                                                                               |            |            |               |                         |           |
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>                                                                 |            |            |               | <b>Date:</b> 20/12/2009 |           |
| Accepted and formally concluded. Thus CAR 02 was closed out                                                                      |            |            |               |                         |           |
| <b>Acceptance and Close out by Lead Assessor:</b>                                                                                |            |            |               | <b>Date:</b> 20/12/2009 |           |

|                        |            |         |            |               |                                                                        |
|------------------------|------------|---------|------------|---------------|------------------------------------------------------------------------|
| Date:                  | 05/04/2009 |         | Raised by: | Lead Assessor |                                                                        |
| Type:                  | CAR        | Number: | 03         | Reference:    | A.4.10, B.4.1, C.1.1, C.1.2, A.2.1 – A.2.2, A.2.4, B.4.4, B.4.5, A.4.5 |
| Lead Assessor Comment: |            |         |            |               |                                                                        |

- It needs to demonstrate that the incentives from CDM were seriously considered for the project activity in line with the EB41.
- The chronology of the events since the CDM consideration need to be addressed under section B.5 of PDD and evidence the same needs to be provided.
- Guaranteed PLF considered for the project financials while project commissioning. The same needs to be addressed in the PDD.
- Financials for CDM consideration prior to the project needs to be furnished.
- The operational lifetime of the project needs to be as per the lifetime of project on technical specifications.
- The technical specifications of the WEG need to be evidenced.
- Host needs to be mentioned against the county name under section A.3 of PDD
- The start date of the crediting period is 30 April 2009 for the fixed crediting period of 10 years. This needs be revised so as to have at least 4 weeks of time period between the date for request for registration and start of the crediting period.
- 

**Project Participant Response:**

**Date:** 02/12/2009

1. As per EB 41, Annex 46 para 2 "The Board decided that for project activities with a starting date on or after 02 August 2008, the participant must inform a Host Party DNA and/or the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status. Such notification must be made within six months of the project activity start date and shall contain the precise geographical location and a brief description of the proposed project activity. Such notification is not necessary if a PDD has been published for global stakeholder consultation or a new methodology proposed to the Executive Board before the project activity start date". CDM was seriously considered in line with EB 41, Serious CDM consideration i.e. board meeting & approval on 10/09/2008, UNFCCC intimation was done on 09/12/2008. The first purchase order was placed for the WTG,s on 14/10/2008 (taken as start date of the project). Following this, the PP and consultant were engaged in constant communication and negotiations during the period of 16<sup>th</sup> October – 21<sup>st</sup> October 2008 and evidences for the same have been submitted to DOE.

2. The project participant has taken continuous and real actions to secure CDM status for the project. A detailed chronology of events has been incorporated in the PDD (Section B.5) and the revised PDD as (Version 2.0) has been made available to the DOE & the supporting evidence to the chronology has been submitted to the DOE for its reference." Considering the criticality of CDM funds for the viability of the project, the project proponent initiated steps to secure CDM status for the project. The board of SRPL resolved to setup the project considering CDM funds and the consultant was appointed immediately. Board of directors of SRPL on 10<sup>th</sup> September 2008 passed the resolution stating that the monetary benefits from CDM will only make the project viable. Accordingly PP sent enquiries to various consultants on 3<sup>rd</sup> October 2008. The appointed consultant issued its proposal for the wind power project on 6<sup>th</sup> October 2008 which is before the placement of Purchase Order i.e.; start date of project activity. Following this, the PP and consultant were engaged in constant communication and negotiations during the period of 16<sup>th</sup> October – 21<sup>st</sup> October 2008 and evidences for the same have been submitted to DOE. PP raised the PO for WTGs on 14<sup>th</sup> October, 2008. The CDM consultant was finally appointed on 12<sup>th</sup> November 2008 after deliberate negotiations. This was then followed by UNFCCC intimation on 09<sup>th</sup> December 2008. In turn UNFCCC acknowledged the receipt of intimation on the same day i.e. 9<sup>th</sup> December 2008. The stakeholder meeting was conducted on 10<sup>th</sup> December, 2008. DOE was appointed on 5<sup>th</sup> January 2009. The project was open for global stakeholder comments during the period 5<sup>th</sup> February, 2009 – 6<sup>th</sup> March, 2009. Thereafter, MoEF presentation was held on 3<sup>rd</sup> March, 2009. Following this, DOE conducted site visit on 14<sup>th</sup> March, 2009"

3. For the project activity, SRPL has placed the purchase order to procure Wind Turbine Generators (WEGs) from M/S Suzlon Energy Limited (SEL) and it's associate companies for supply of 5 nos S 82 1500 kW capacity and 5 nos S 64 1250 kW capacity.  $PLF (Plant Load Factor) = \frac{[Guaranteed\ generation / WTG\ (Lacs\ unit) - estimation \times 10^5 / Installed\ Capacity\ (MW) \times 10^3 \times 24 \times 365]}{100}$ .  $PLF = \frac{[(36 \times 5 + 26 \times 5) \times 10^5 / 13.75 \times 10^3 \times 24 \times 365]}{100} = 25.74\%$ .  $PLF\ For\ 1.25\ MW\ WTG: PLF = \frac{[(26 \times 5) \times 10^5 / 6.25 \times 10^3 \times 24 \times 365]}{100} = 23.74\%$ .  $PLF\ For\ 1.5\ MW\ WTG: PLF = \frac{[(36 \times 5) \times 10^5 / 7.5 \times 10^3 \times 24 \times 365]}{100} = 27.39\%$ .

The last WTGs were commissioned on May 2009. The generation figures are also evidenced to the DOE for their reference. The supporting evidence for the actual PLF has been made available to the DOE.

#### **Financials:**

1. Financials before the CDM considerations has been made available to the DOE for its reference.
2. IRR calculation sheet has been made available to the DOE and all assumptions made for the calculation of the IRR have been incorporated in the PDD. The revised PDD (Version 02) has been made available to the DOE

#### **Operational Life Time:**

1. The estimated design life time of 20-25 years for the Suzlon machines is evidenced in technical specifications of the equipment and letter by the Supplier; which could vary based upon operations and maintenance of the equipment. The same has been made available to the DOE

#### **Technical specifications**

1. The technical specifications of the WEG, s [suzlon] are evidenced for (WEG,s i.e. 1500 Kw & 1250 Kw) and has been provided to the DOE for its reference.
2. The "Host" has been incorporated in the PDD under section A.3 and the revised version of the PDD (Version 02) has been made available to the DOE.

#### **Start Date of the Crediting Period:**

Under section C.2.2.1 of the PDD the start date of the crediting period has been revised to 01/08/2010 renewable crediting period and the revised version of the PDD (Version 02) has been made available to the DOE. The project participants will not commence the crediting period prior to the date of registration.

#### **Documentation Provided by Project Participant:**

- Documentary evidence for chronology
- Financial and CER calculation sheets
- PDD version 2
- Purchase order

**Information Verified by Lead Assessor:**

The documentary evidence for each parameter in the chronology event provided by the project participant was validated.

Financial and CER calculation sheets were verified against the data assumed at the time of CDM consideration. Benchmark application was validated. All the relevant external data links were verified for authenticity.

Revised PDD version 2 was produced with all the information incorporated and updated for validation. - Latest approved methodology has to be applied for the project.

The change in the crediting period option needs to be clarified.

**Project Participant Response:**

**Date:** 02/12/2009

The Methodology has been revised as per the latest version i.e. AMS ID (Version 15, EB 50) and incorporated in the existing version 2.

PP was totally unaware of the fact i.e. Renewable crediting period option is available in the UNFCCC regulations at the time of CDM decision making and the time of webhosting, as it was not intimated by the consultant also.

The Project IRR even after considering the CDM benefit is very much near to the benchmark and PP was not fully confident with CDM credits alone to sustain the Project and management had made up the decisions to look forward other funding benefits to sustain the Project in the long run.

As since PP got to know more about CDM benefits and regulations, PP hereby took the decision to avail the benefits of CDM for 21 years renewable crediting period that could really sustain the Project in the long run. Management decision note is provided as reference.

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

**Date:** 20/12/2009

The PDD was validated for the applicability against the latest approved methodology AMS ID version 15.

The internal management records of communication were reviewed to analyse the seriousness of the CDM and decision notes of acceptance to go for renewable crediting period was evidenced.

Accepted and formally concluded. Thus CAR 03 was closed out

NOTE: Since the project returned back during completeness check, the start date of crediting period was further revised to 01/08/2010.

**Acceptance and Close out by Lead Assessor:**

**Date:** 20/12/2009

|       |            |         |            |               |               |
|-------|------------|---------|------------|---------------|---------------|
| Date: | 05/04/2009 |         | Raised by: | Lead Assessor |               |
| Type: | CAR        | Number: | 04         | Reference:    | B.3.2 – B.3.6 |

**Lead Assessor Comment:**

The project proponent has identified the following alternatives to the project activity to arrive at the baseline scenario and additionality:

Electricity generation using:

- Coal (domestic/imported) power plant
- Lignite power plant
- Diesel power plant
- LNG power plant
- Naphtha power plant
- Gas power plant

Electricity generation from renewable biomass and hydro as an alternative is not discussed and also project proponent need to demonstrate the most likely alternative in the region.

The project proponent needs to provide the exact link for the data addressed on PDD to evidence authenticity and the conservativeness of the baseline.

**Project Participant Response:**

**Date:** 02/12/2009

1. The cost comparison has been included in the PDD to justify higher investment cost in case of the wind. These are not considered as plausible alternatives. Cost/MW using Coal , Diesel ,Lignite, LNG, Naphtha, Gas power plants has been provide to the DOE for its reference.Cost/MWLink:<http://cdm.unfccc.int/UserManagement/FileStorage/ZBEFC58QMKTb9WHAKCPOOQGCZAXZT7> (Report of Expert Committee on fuels for power generation) (Refer document No. 1 in the list mentioned below).
2. As per the latest additionality tool EB 39, Annex 10 (Identification of alternatives to the project activity, Step 1a). It has been stated that [For example a Coal – fired power station or Hydropower may not be an alternative for an independent power producer investing in wind energy or for a sugar factory owner Investing in a co – generation]. (Refer document No. 2 in the list mentioned below). PP doesn't need to evaluate these options.  
Appropriate links has been provided to authenticate of the evidence in the response as well as in the revised PDD as version 2.0.

**Documentation Provided by Project Participant:**

<http://cdm.unfccc.int/UserManagement/FileStorage/ZBEFC58QMKTb9WHAKCPOOQGCZAXZT7>

**Information Verified by Lead Assessor:**

Document link verified

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

**Date:** 20/12/2009

As per the Additionality tool, Alternatives are, therefore, related to technology and circumstances as well as to the investor. It is reasonable to assume that the other renewable alternatives are not credible and realistic to implement since PP doesn't have any background or experience in other renewable technologies. Hence, the argument is accepted and formally concluded. Thus CAR 04 was closed out

**Acceptance and Close out by Lead Assessor:**

**Date:** 20/12/2009

|                               |            |            |                                            |
|-------------------------------|------------|------------|--------------------------------------------|
| Date:                         | 05/04/2009 | Raised by: | Praveen Nagaraje Urs                       |
| Type:                         | CAR        | Number:    | 05                                         |
|                               |            | Reference: | B.4.2, B.4.3, B.4.7, B.4.8, B.4.10, B.4.11 |
| <b>Lead Assessor Comment:</b> |            |            |                                            |

1. PLR proof needs to be evidenced.
2. Detail excel financial calculation sheet needs to be provided with relevant evidence on the parameters used.
3. PP needs to demonstrate and evidence the parameters considered for project cost, cost of O&M, insurance, depreciation as per companies act and income tax, debts and equity, moratorium of loan and tariff.
4. Power generation guarantee offered by Suzlon Energy Limited to the PP needs to be evidenced.
5. Investment barrier: The investment barrier is argued considering the cost of generation with other alternatives. It is been argued that the project cost is Rs.5.6 crores/ MW which is costlier than any other power plants. This needs to be evidenced.
6. Sensitive analysis is carried out on the basis of 5 to 10% increase in the power generation and capital cost. PP has to evidence how 10% increase in power generation is not achievable with the project as the project IRR crosses the benchmark with 10% escalation in power generation.
7. Barrier due to prevailing practices: It is argued that the wind energy share approximately 8% of the total energy in India as per ministry of power and of this 8% only 17.6% is generated by Karnataka state and thus this wind project is not a common practice in the region. This argument needs to be evidenced and also need to justify why the region is restricted only to the state where as the electricity is supplied to the southern regional grid.
8. It has to be demonstrated why Project proponent being in a different business has ventured into wind energy generation without viability of the project as argued under PDD.
9. Please clarify how the technological barriers are project specific.
10. Electricity generation from renewable biomass and hydro as an alternative is not discussed and also project proponent need to demonstrate the most likely alternative in the region.
11. The comparison of the project with realistic and credible alternative (ie thermal power generation plant connected with grid) is based on the investment barriers. The same needs to be evidenced.

**Project Participant Response:**

**Date:** 02/12/2009

1. The PLR (Prime lending Rate) of RBI year 2008 has been properly evidenced with appropriate link: <http://rbidocs.rbi.org.in/rdocs/AnnualReport/PDFs/86591.pdf> in the revised PDD as version 2.0.
2. Detailed Excel sheet of IRR has been provided to the DOE for its reference.
3. The project activity has been setup through equity and debt funding from financial institutional. The Interest rate for the loan component, project cost, cost of O&M, insurance, depreciation as per Companies act and income tax, debts and equity, moratorium of loan and tariff has been provided to the DOE.
4. Power generation guarantee offered by Suzlon Energy Limited has been provided to the DOE for its reference
5. Project cost is Rs.5.6 Crores/ MW which is costlier then any other power plants has been justified and has been discussed in previous findings (CAR 4) in detail with exact link for the data addressed.[ Cost/MW using Coal , Diesel ,Lignite, LNG, Naphtha, Gas power plants has been provide to the DOE for its reference. Cost/MW Link : <http://cdm.unfccc.int/UserManagement/FileStorage/ZBEFC58QMKTB9WHAKCPOOQGCZAXZT7> (Report of Expert Committee on fuels for power generation) page 11] [(Total Cost/Total Capacity; 77.4 Crore/13.75 MW = 5.6 Crore / MW)].
6. The financials are reworked and the sensitivity analysis was conducted for the following:  
The sensitivity analysis was done for Generation Guarantee, Project Cost, O&M cost & Tariff rate values as it remains the important parameters impacting financials of the project.  
Analyzing the above sensitivity chart the IRR of the project taking Generation Guarantee, 5% increase in Generation & 10% increase in Generation, 5% decrease in generation & 10% decrease in generation, The project IRR was compared against PLR of 12.25 % corresponding to the period. The IRR for the project is coming around 9.20% which is below the returns expected of 12.25 % for this project. The sensitivity has been incorporated in the revised PDD as version 2.0.
7. Of the total, power generated through RES (Renewable energy source) in Karnataka is accounted for about 21% : [http://www.cea.nic.in/power\\_sec\\_reports/Executive\\_Summary/index\\_Executive\\_Summary.html](http://www.cea.nic.in/power_sec_reports/Executive_Summary/index_Executive_Summary.html) (Page 3). Of which, the % of wind energy generation is 12.9 % (<http://www.windpowerindia.com/statstate.html>). Thus the share of wind energy is very negligible.  
The Southern grid comprises of [Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, NLC, and Pondicherry].The whole of southern region is also considered with net energy generation [Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, NLC and Pondicherry] of 40140 MW and net RES generation is around 7047.90 i.e. 18% of the Grand total generation of power in the southern region, of which the % of wind energy generation in the southern states is 13.6% (<http://www.windpowerindia.com/statstate.html>). The same has been revised in the PDD. The revised version of the PDD (Version 2.0) has been made available to the DOE.
8. SRPL is engaged in Trading and Marketing Packaged Tea & Tobacco. The management wanted to diversify into other business and also the management is conscious about environment. The management had decided to make investment into renewable energy and particularly into Wind Energy. The project was conceptualized considering carbon revenue which has made project viable.
10. PP has not opted for technological barrier in the PDD. The PDD has been revised.
11. As per the latest additionality tool EB 39, Annex 10 (Identification of alternatives to the project activity, Step 1a). It has been stated that [For example a Coal – fired power station or Hydropower may not be an alternative for an independent power producer investing in wind energy or for a sugar factory owner investing in a co – generation. PP doesn't need to evaluate these options.

**Documentation Provided by Project Participant:**

The updated PDD version 2.0 has been incorporated with appropriate links and supporting is made available to the DOE for validation.

**Information Verified by Lead Assessor:**

Financials produced by the PP has been evaluated with all the documentary and authentic evidence

1. The depreciation rate may be changed as per the IT act.
2. U/S 80 IA – The tax exemption accounted should be as per the IT act.
3. In the CER calculation sheets – the annual generation is not clear – please clarify
4. Indirect cost should be presentable
5. Please clarify for the change in the insurance cost
6. Tax rebate under 80 IA – PP needs to clarify why the tax rebate for 15 years in not taken
7. Please clarify against the MAT figures.
8. Why the annual generation per MW of the 2 bundled project activities is different.

**Project Participant Response:**

**Date:** 02/12/2009

1. We have estimated depreciation @ 100% for first year (80% normal and 20% additional depreciation available) Since in the first year, windmills are expected to be utilised for less than 180 days, depreciation considered is 50% of available depreciation. In the second year depreciation rate shown in IRR sheet is 40%. This is on original cost (Not on WDV) and hence translates to 80% on WDV which is again as per Income Tax Act. Following table will clear the picture. In third year depreciation has been completely written off since WDV remaining is very less. Again there is no corporate tax liability in Year 3 to 5. Hence this change won't have any impact on IRR.
2. Tax exemption is in line with the ruling in the case of M/s Goldmine Shares & Finance Pvt. Ltd.: In view of the provisions of Section 80 IA ( 5) of the income-tax Act, 1961 the profit from the eligible business for the purposes of deduction u/ s.80IA of the Act has to be computed after deduction of the notional brought forward losses and depreciation of eligible business even though they have been allowed set off against other income in earlier years
3. Annual Generation figures in the calculation sheet, submitted to the DOE on 6<sup>th</sup> June 2009 is 36 Lacs Units/WTG for 1.5 MW and 26 Lacs Units/WTG for 1.25 MW (based on estimated units generation at Controller). Annual Generation figures in the calculation sheets submitted to the DOE on 19<sup>th</sup> August 2009 is 33.17 Lacs Units/WTG for 1.5 MW and 23.96 Lacs Units/WTG for 1.25 MW (based on the Grid availability Correction factor and estimated transmission losses from controller to metering point which have been estimated at 5% and 3% respectively).
4. Indirect cost related to the CDM has been incorporated in the new version IRR sheet
5. In the IRR sheet, insurance charges were considered without service tax @ 12.36%. This is changed in the new version now so that IRR calculation is in line with prevailing Tax Laws and also as per the insurance document. It was assumed earlier that insurance premium will go on reducing by 5 % p.a. every year. However, since SRPL is opting for insurance policy with restatement clause, premium is to be paid on market value of the WTGs and the market value for next 20 years has been assumed same as base year with no increase or decrease in the market value. Hence no change has been estimated by the PP.
6. Under 80-IA The deduction specified in sub-section (1) may, at the option of the assessee, be claimed by him for any ten consecutive assessment years out of fifteen years beginning from the year in which the undertaking or the enterprise develops and begins to operate any infrastructure facility or starts providing telecommunication service or develops an industrial park ,a special economic zone referred to in clause (iii) of sub-section (4) or generates power or commences transmission or distribution of power or undertakes substantial renovation and modernization of the existing transmission or distribution lines or lays and begins to operate a cross-country natural gas distribution network:
  - Beginning year for PP - 2008-2009 (Year 0)
  - Block of 15 years ends on - 2022-2023 (Year 14)
  - Deduction not available from 2023-2024 (i.e. year 15 onwards)
7. Since Tax shield is considered as income of wind power project, SRPL's (Sargam Retails Pvt Ltd) other business is landed into situation that it has to pay MAT for its consolidated book profit. Though figures of income tax shield and MAT are shown separately, Income Tax Shield is calculated net of MAT Payable. Secondly, whatever MAT payment has been shown, tax credit has been utilized in subsequent years as per Tax Laws.
8. The wind energy generation from any WTG is determined on many factors like capacity of machine, rotor diameter, swept area, hub height etc and also on wind pattern. Thus the generation for model S 82 (1.5 MW) will be higher as compared to S 64 (1.25 MW).The technical specifications of both the models presented to DOE for validation.

**Lead Assessor Comment:**

**Date:** 01/04/2010

1. Please evidence the barriers due to prevailing practice in accordance to the EB 50 annex 13

**Project Participant Response:**

**Date:** 04/04/2010

In the Indian power sector, the common practice is investing in only medium or large scale fossil fuel fired power projects. Generation of power through a small wind project is not a common practice.

- i) Capital cost of setting up wind power project is the most expensive
- ii) The PLFs obtained by WTGs are very low as compared to thermal plants or other source.

#### **PLF Analysis:**

| Source of power generation | Capital Cost/MW (Rs in Crore) | Average PLF (%)  |
|----------------------------|-------------------------------|------------------|
| <b>Wind</b>                | <b>5.6</b>                    | <b>22% - 26%</b> |
| Domestic Coal              | 4.0                           | 75% - 90%        |
| Imported Coal              | 4.0                           | 75% - 90%        |
| Lignite                    | 4.2                           | 75% - 90%        |
| LNG                        | 2.7                           | 75% - 90%        |
| Naphtha                    | 2.7                           | 75% - 90%        |
| Gas                        | 2.7                           | 75% - 90%        |
| Diesel                     | 3.5                           | 75% - 90%        |

Link: <http://cdm.unfccc.int/UserManagement/FileStorage/ZBEFC58QMKTB9WHAKCPOOQGCZAXZT7>  
(Report of Expert Committee on fuels for power generation Page No 11.

The table above proves that the wind power project are not financially attractive projects.

As per the UNFCCC guidelines for a small scale CDM project PP has to justify any one of the barriers to prove the additionality of the project.

Thus PP has opted for Investment analysis to justify the additionality. Benchmark analysis has been selected to depict the investment analysis in the project activity. PP is not taking Barrier due to prevailing practice to justify additionality as there are no enough authentic data to prove it as per the EB50 annex 13. Thus the component is removed from the revised PDD version 2.0, where PP has opted for investment analysis to justify additionality

#### **Information Verified by Lead Assessor:**

Corrected work sheet was produced by the PP has been evaluated with all the documentary and authentic evidence  
PDD version 2

**Reasoning for not Acceptance or Acceptance and Close Out:** **Date:** 04/04/2010

Accepted and formally concluded. Thus CAR 05 was closed out

**Acceptance and Close out by Lead Assessor:** **Date:** 04/04/2010

|       |            |            |                                              |
|-------|------------|------------|----------------------------------------------|
| Date: | 05/04/2009 | Raised by: | Praveen Nagaraje Urs                         |
| Type: | CAR        | Number:    | 06                                           |
|       |            | Reference: | B.5.1, B.5.6, B.6.-B.6.5, B.7.1-B.7.4, B.8.2 |

#### **Lead Assessor Comment:**

- The detail calculation sheets and all relevant literature are to be evidenced.
- Exact decimal points needs to be considered for EF consideration.

**Project Participant Response:** **Date:** 02/12/2009

1. Detailed calculation sheet i.e. CER sheet and the supporting literature has been provided to the DOE for its reference.
2. In calculating the EF exact decimal point has been considered.

#### **Documentation Provided by Project Participant:**

2. (CER sheet).

#### **Information Verified by Lead Assessor:**

The updated CER calculation sheet has been verified with all the values and approach

**Reasoning for not Acceptance or Acceptance and Close Out:** **Date:** 20/12/2009

Accepted and formally concluded. Thus CAR 06 was closed out

|                                                   |                         |
|---------------------------------------------------|-------------------------|
| <b>Acceptance and Close out by Lead Assessor:</b> | <b>Date:</b> 20/12/2009 |
|---------------------------------------------------|-------------------------|

|       |            |         |            |               |                              |
|-------|------------|---------|------------|---------------|------------------------------|
| Date: | 05/04/2009 |         | Raised by: | Lead Assessor |                              |
| Type: | CAR        | Number: | 07         | Reference:    | B.9.2, B.10.1, B.10.4-B.10.7 |

**Lead Assessor Comment:**

The monitoring and calculation to the individual project participant needs to be clearly specified in the PDD and also clear project boundary needs to be evidenced.

**Project Participant Response:**

**Date:** 02/12/2009

The Delivered Energy shall be metered by the Parties at the high voltage side of the step up transformer installed at the Receiving Station. The electricity generated by the Project shall be metered by the Parties at the high voltage side of the step up transformer installed at the Project Site. The WEGs of a single customer (SRPL in this case) at a particular site are connected to a Vacuum Circuit Breaker metering yard (VCB) which in turn connects to a feeder that ultimately leads to the shared main KPTCL meter at the substation maintained by Suzlon Power Infrastructure Limited . Data monitoring takes place at the VCB metering yard and WEG (through SCADA system). The electricity metered at the KPTCL meter is proportionally divided among the customers connected to the meter on the basis of the prorata readings taken at the VCB end. The emission reduction calculations are done on the basis of the KPTCL Main meter reading.

For example 5 x 1.5 MW WTGs of Sargam Retails Pvt. Ltd., have 1 main meter and 1 check meter at location K 543. This meter will show the power generation of 5 WTGs. These two meters are calibrated by EB authorities in state of Karnataka. Every month the reading for these 5 nos of WTGs will be taken from this meter.

Now what 1 WTG has generated KPTCL has to do nothing, but if WTG owner want to know what 1 WTG has generated than one has to do following thing:

- i) Each WTG has microprocessor based system, which records all parameter viz Generated Energy, Consumed Energy, Reactive power etc..
- ii) Collect these reading from each WTG.
- iii) Take readings of main meter at metering point that is location K543.(For SRPL 5 x 1.5 Mw, WTG,s).

For example:

Let say each WTG shows 100 units in microprocessor, for 5 WTGs, 500 units.

Main meter at metering point shows 475 units.

In this case the difference i.e 25 units will be divided to each WTG. Proportionately, that means 1 WTG has generated 95 units., but this is internal calculation, KPTCL is not concerned with this. Only in case of failure of metering point i.e. K543 (i.e. both meter main & check meter fails), the metering point in Main Substation i.e Kudurekonda substation will be referred.

Similar arrangement is for 5 x 1.25 MW WTG, having metering point at location K539.

The same has been incorporated in the revised PDD (Version 2.0) and has been made available to the DOE for its reference.

**Documentation Provided by Project Participant:**

Updated PDD provided for validation

**Information Verified by Lead Assessor:**

All the monitoring plan and data achievement in the revised PDD, inline with the methodology requirement is assed and validated

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

**Date:** 20/12/2009

Accepted and formally concluded. Thus CAR 07 was closed out

**Acceptance and Close out by Lead Assessor:**

**Date:** 20/12/2009

|                        |            |         |            |               |                                  |
|------------------------|------------|---------|------------|---------------|----------------------------------|
| Date:                  | 05/04/2009 |         | Raised by: | Lead Assessor |                                  |
| Type:                  | CAR        | Number: | 08         | Reference:    | B.12.1, B.12.3, B.13.3 – B.13.10 |
| Lead Assessor Comment: |            |         |            |               |                                  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                         |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------|--|
| <ul style="list-style-type: none"> <li>The CDM management team responsibilities for the following needs to be clearly addressed in the PDD: <ul style="list-style-type: none"> <li>i. Maintenance of monitoring equipment and installations</li> <li>ii. Day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)</li> <li>iii. Registration, monitoring, measurement and reporting, calibration of monitoring equipment</li> <li>iv. Training requirements</li> <li>v. Emergency situations and procedures for corrective actions.</li> <li>vi. Procedures identified for dealing with possible monitoring data adjustments and uncertainties.</li> <li>vii. Procedures identified for review of reported results/data.</li> <li>viii. Procedures for internal audit of GHG, performance reviews and corrective actions</li> </ul> </li> <li>The project PDD does not address the type of emergency situation that can occur relative to the project activity and the procedures for emergency preparedness for cases where emergencies can cause unintended emissions.</li> <li>The PDD needs to update the flow chart to the actual situation as on site.</li> </ul> |  |                         |  |
| <b>Project Participant Response:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | <b>Date:</b> 02/12/2009 |  |
| <p>The team responsible for all the activities from i to viii has been documented in the revised PDD.</p> <ol style="list-style-type: none"> <li>Detailed Emergency preparedness plan has been documented in the PDD as version 2.0.</li> <li>The flow chart of the actual situation has been updated in the revised PDD as Version 2.0.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                         |  |
| <b>Documentation Provided by Project Participant:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                         |  |
| Updated PDD version 02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                         |  |
| <b>Information Verified by Lead Assessor:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                         |  |
| All the monitoring information verified during the site visit were assessed with the updated plan in the PDD version 02.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                         |  |
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | <b>Date:</b> 20/12/2009 |  |
| Accepted and formally concluded. Thus CAR 08 was closed out                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                         |  |
| <b>Acceptance and Close out by Lead Assessor:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | <b>Date:</b> 20/12/2009 |  |

  

|            |                            |            |                      |
|------------|----------------------------|------------|----------------------|
| Date:      | 05/04/2009                 | Raised by: | Praveen Nagaraje Urs |
| Type:      | CAR                        | Number:    | 09                   |
| Reference: | D.1.1, D.1.2, D.1.3, A.4.3 |            |                      |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                         |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------|--|
| <b>Lead Assessor Comment:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                         |  |
| <ul style="list-style-type: none"> <li>The PDD does not address the possible environmental impacts and its severity during construction &amp; operation.</li> <li>The notification letter stating that EIA clearance is not required for the wind project activities needs to be produced to DOE and the web linkage shall be addressed in the PDD</li> <li>All statutory clearances like electrical department and land used clearance for the project activity need to be evidenced.</li> </ul>                                                                               |  |                         |  |
| <b>Project Participant Response:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | <b>Date:</b> 02/12/2009 |  |
| <ol style="list-style-type: none"> <li>The PDD has been revised and the environmental impacts during construction &amp; operation has been addressed in the PDD as version 2.0.</li> <li>Government of India (Ministry of Environment &amp; Forest) letter no : 6- MHC 074/2006 – BHO/3707 Stating EIA is not required for Wind Mill Project &amp; appropriate web link has been incorporated in the revised PDD as version 2.0</li> <li>All statutory clearances like electrical department and land used Clearance has been provided to the DOE for its reference.</li> </ol> |  |                         |  |
| <b>Documentation Provided by Project Participant:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                         |  |
| Statutory clearance documents and PDD version 02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                         |  |
| <b>Information Verified by Lead Assessor:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                         |  |
| Revised PDD and statutory legal documents and licence were verified.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                         |  |

|                                                                  |  |                         |  |
|------------------------------------------------------------------|--|-------------------------|--|
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b> |  | <b>Date:</b> 20/12/2009 |  |
| Accepted and formally concluded. Thus CAR 09 was closed out      |  |                         |  |
| <b>Acceptance and Close out by Lead Assessor:</b>                |  | <b>Date:</b> 20/12/2009 |  |

|       |            |            |                      |
|-------|------------|------------|----------------------|
| Date: | 05/04/2009 | Raised by: | Praveen Nagaraje Urs |
| Type: | CL         | Number:    | 10                   |
|       |            | Reference: | B.3.1                |

**Lead Assessor Comment:**

- The project proponent needs to evidence that the grid is highly dependent on thermal power generation unit.

**Project Participant Response:**

**Date:** 02/12/2009

1. All India generating installed capacity- region wise proofs that 63.2% of the energy generated is through Thermal energy. It has been incorporated in the revised PDD as Version 2.0.

Link : [http://www.cea.nic.in/power\\_sec\\_reports/Executive\\_Summary/2008\\_10/index.htm](http://www.cea.nic.in/power_sec_reports/Executive_Summary/2008_10/index.htm) (All India generating installed capacity- region wise ) October 2008. (Refer document No. 1 in the list mentioned below)

**Documentation Provided by Project Participant:**

Web link and PDD version 02

**Information Verified by Lead Assessor:**

Web link information was verified.

|                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                            |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------|--|
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>                                                                                                                                                                                                                                                                                                                                     |  | <b>Date:</b> 20/12/2009                    |  |
| It has been verified from the web-link that 63.2% of the total energy generated in India is through Thermal energy. It is further verified that the dependency of project grid (Southern Grid) on thermal power is more than 50%. Hence, it can be concluded that the project grid is highly dependent on thermal power generation unit. Accepted and formally concluded. Thus CL 10 was closed out. |  |                                            |  |
| <b>Acceptance and Close out by Lead Assessor:</b>                                                                                                                                                                                                                                                                                                                                                    |  | <b>Date:</b> 04/10/2010 (Abhishek Mahawar) |  |

|       |            |            |                      |
|-------|------------|------------|----------------------|
| Date: | 05/04/2009 | Raised by: | Praveen Nagaraje Urs |
| Type: | CL         | Number:    | 11                   |
|       |            | Reference: | E.1.2, E.1.2, E.1.3  |

**Lead Assessor Comment:**

- Proof for the invitation letter for stakeholders conducting consultation needs to be evidenced.
- Proof for conducting consultation needs to be evidenced
- The copy of original minutes of the local stakeholder meeting needs to be evidenced.

**Project Participant Response:**

**Date:** 02/12/2009

1. Stakeholder invitation, Minutes of meeting & comments received from the invitees has been provided to the DOE for its reference.

All stakeholders consulted appreciated setting up of the project and their comments have been addressed wherever possible, while preparing the PDD. None of the comments received from the Stakeholders mandated an action from SRPL

**Documentation Provided by Project Participant:**

Stakeholder invitation, MOM, comments received from the invitees.

**Information Verified by Lead Assessor:**

Stakeholder invitations, minutes of the meeting, photographs, interview with personals, their comments were verified to assess the requirements.

|                                                                  |  |                         |  |
|------------------------------------------------------------------|--|-------------------------|--|
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b> |  | <b>Date:</b> 20/12/2009 |  |
| Accepted and formally concluded. Thus CL 11 was closed out       |  |                         |  |
| <b>Acceptance and Close out by Lead Assessor:</b>                |  | <b>Date:</b> 20/12/2009 |  |

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

### Statement of Competence

Name: Mahawar, Abhishek

#### Status

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

#### Scopes of Expertise

|                                                                                                       |                          |
|-------------------------------------------------------------------------------------------------------|--------------------------|
| <b>1. Energy Industries (renewable / non-renewable)</b>                                               | <input type="checkbox"/> |
| <i>Sub scope(s):</i>                                                                                  |                          |
| <b>2. Energy Distribution</b>                                                                         | <input type="checkbox"/> |
| <i>Sub scope(s):</i>                                                                                  |                          |
| <b>3. Energy Demand</b>                                                                               | <input type="checkbox"/> |
| <i>Sub scope(s):</i>                                                                                  |                          |
| <b>4. Manufacturing</b>                                                                               | <input type="checkbox"/> |
| <i>Sub scope(s):</i>                                                                                  |                          |
| <b>5. Chemical Industry</b>                                                                           | <input type="checkbox"/> |
| <i>Sub scope(s):</i>                                                                                  |                          |
| <b>6. Construction</b>                                                                                | <input type="checkbox"/> |
| <i>Sub scope(s):</i>                                                                                  |                          |
| <b>7. Transport</b>                                                                                   | <input type="checkbox"/> |
| <i>Sub scope(s):</i>                                                                                  |                          |
| <b>8. Mining/Mineral Production</b>                                                                   | <input type="checkbox"/> |
| <i>Sub scope(s):</i>                                                                                  |                          |
| <b>9. Metal Production</b>                                                                            | <input type="checkbox"/> |
| <i>Sub scope(s):</i>                                                                                  |                          |
| <b>10. Fugitive Emissions from Fuels (solid, oil and gas)</b>                                         | <input type="checkbox"/> |
| <i>Sub scope(s):</i>                                                                                  |                          |
| <b>11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b> | <input type="checkbox"/> |
| <i>Sub scope(s):</i>                                                                                  |                          |
| <b>12. Solvent Use</b>                                                                                | <input type="checkbox"/> |
| <i>Sub scope(s):</i>                                                                                  |                          |
| <b>13. Waste Handling and Disposal</b>                                                                | <input type="checkbox"/> |
| <i>Sub scope(s):</i>                                                                                  |                          |
| <b>14. Afforestation and Reforestation</b>                                                            | <input type="checkbox"/> |
| <i>Sub scope(s):</i>                                                                                  |                          |
| <b>15. Agriculture</b>                                                                                | <input type="checkbox"/> |
| <i>Sub scope(s):</i>                                                                                  |                          |

Approved Member of Staff by:

Siddharth Yadav

Date:

07/06/2010

## Statement of Competence

Name: Raval, Harsh

### Status

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

### Scopes of Expertise

|                                                                                                       |                                     |
|-------------------------------------------------------------------------------------------------------|-------------------------------------|
| <b>1. Energy Industries (renewable / non-renewable)</b>                                               | <input checked="" type="checkbox"/> |
| <i>Sub scope(s): Wind, Solar and Biomass based Thermal/ Electricity Utilization</i>                   |                                     |
| <b>2. Energy Distribution</b>                                                                         | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>3. Energy Demand</b>                                                                               | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>4. Manufacturing</b>                                                                               | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>5. Chemical Industry</b>                                                                           | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>6. Construction</b>                                                                                | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>7. Transport</b>                                                                                   | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>8. Mining/Mineral Production</b>                                                                   | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>9. Metal Production</b>                                                                            | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>10. Fugitive Emissions from Fuels (solid, oil and gas)</b>                                         | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b> | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>12. Solvent Use</b>                                                                                | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>13. Waste Handling and Disposal</b>                                                                | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>14. Afforestation and Reforestation</b>                                                            | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>15. Agriculture</b>                                                                                | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |

Approved Member of Staff by:

Siddharth Yadav

Date: 02/12/2009

## Statement of Competence

Name: Babber, Nitin      SGS Affiliate: SGS India

### Status

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

### Scopes of Expertise

|                                                                                                                               |                                     |
|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| <b>1. Energy Industries (renewable / non-renewable)</b>                                                                       | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                                          |                                     |
| <b>2. Energy Distribution</b>                                                                                                 | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                                          |                                     |
| <b>3. Energy Demand</b>                                                                                                       | <input checked="" type="checkbox"/> |
| <i>Sub scope(s): Energy Efficiency in Thermal Application systems and Energy Efficiency in Electrical Application systems</i> |                                     |
| <b>4. Manufacturing</b>                                                                                                       | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                                          |                                     |
| <b>5. Chemical Industry</b>                                                                                                   | <input checked="" type="checkbox"/> |
| <i>Sub scope(s): CO2 substitution from fossil fuel or fuels of mineral origin</i>                                             |                                     |
| <b>6. Construction</b>                                                                                                        | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                                          |                                     |
| <b>7. Transport</b>                                                                                                           | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                                          |                                     |
| <b>8. Mining/Mineral Production</b>                                                                                           | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                                          |                                     |
| <b>9. Metal Production</b>                                                                                                    | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                                          |                                     |
| <b>10. Fugitive Emissions from Fuels (solid, oil and gas)</b>                                                                 | <input checked="" type="checkbox"/> |
| <i>Sub scope(s): Oil and Natural Gas - Natural Gas</i>                                                                        |                                     |
| <b>11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b>                         | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                                          |                                     |
| <b>12. Solvent Use</b>                                                                                                        | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                                          |                                     |
| <b>13. Waste Handling and Disposal</b>                                                                                        | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                                          |                                     |
| <b>14. Afforestation and Reforestation</b>                                                                                    | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                                          |                                     |
| <b>15. Agriculture</b>                                                                                                        | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                                          |                                     |

Approved Member of Staff by: Siddharth Yadav      Date: 12 November 2009

## Statement of Competence

Name: Vikas  
Bankar

### Status

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

### Scopes of Expertise

|                                                                                                       |   |
|-------------------------------------------------------------------------------------------------------|---|
| <b>1. Energy Industries (renewable / non-renewable)</b>                                               | x |
| <i>Sub scope(s):</i> Wind                                                                             |   |
| Combined heat and Power & Waste Heat                                                                  |   |
| Biomass based Thermal/ Electricity Utilization                                                        |   |
| <b>2. Energy Distribution</b>                                                                         | x |
| <i>Sub scope(s):</i> Energy Distribution                                                              |   |
| <b>3. Energy Demand</b>                                                                               |   |
| <i>Sub scope(s):</i>                                                                                  |   |
| <b>4. Manufacturing</b>                                                                               |   |
| <i>Sub scope(s):</i>                                                                                  |   |
| <b>5. Chemical Industry</b>                                                                           |   |
| <i>Sub scope(s):</i>                                                                                  |   |
| <b>6. Construction</b>                                                                                |   |
| <i>Sub scope(s):</i>                                                                                  |   |
| <b>7. Transport</b>                                                                                   |   |
| <i>Sub scope(s):</i>                                                                                  |   |
| <b>8. Mining/Mineral Production</b>                                                                   |   |
| <i>Sub scope(s):</i>                                                                                  |   |
| <b>9. Metal Production</b>                                                                            |   |
| <i>Sub scope(s):</i>                                                                                  |   |
| <b>10. Fugitive Emissions from Fuels (solid, oil and gas)</b>                                         |   |
| <i>Sub scope(s):</i>                                                                                  |   |
| <b>11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b> |   |
| <i>Sub scope(s):</i>                                                                                  |   |
| <b>12. Solvent Use</b>                                                                                |   |
| <i>Sub scope(s):</i>                                                                                  |   |
| <b>13. Waste Handling and Disposal</b>                                                                |   |
| <i>Sub scope(s):</i>                                                                                  |   |
| <b>14. Afforestation and Reforestation</b>                                                            |   |
| <i>Sub scope(s):</i>                                                                                  |   |
| <b>15. Agriculture</b>                                                                                |   |
| <i>Sub scope(s):</i>                                                                                  |   |

Approved Member of Staff by: Siddharth Yadav
Date: 20/02/2010

## Statement of Competence

Name: Singh, Kaviraj

### Status

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

### Scopes of Expertise

|                                                                                                       |                                     |
|-------------------------------------------------------------------------------------------------------|-------------------------------------|
| <b>1. Energy Industries (renewable / non-renewable)</b>                                               | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>2. Energy Distribution</b>                                                                         | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>3. Energy Demand</b>                                                                               | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>4. Manufacturing</b>                                                                               | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>5. Chemical Industry</b>                                                                           | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>6. Construction</b>                                                                                | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>7. Transport</b>                                                                                   | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>8. Mining/Mineral Production</b>                                                                   | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>9. Metal Production</b>                                                                            | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>10. Fugitive Emissions from Fuels (solid, oil and gas)</b>                                         | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b> | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>12. Solvent Use</b>                                                                                | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>13. Waste Handling and Disposal</b>                                                                | <input checked="" type="checkbox"/> |
| <i>Sub scope(s): Landfill gas, Wastewater and sludge treatment, Composting</i>                        |                                     |
| <b>14. Afforestation and Reforestation</b>                                                            | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |
| <b>15. Agriculture</b>                                                                                | <input type="checkbox"/>            |
| <i>Sub scope(s):</i>                                                                                  |                                     |

Approved Member of Staff by:

Siddharth Yadav

Date:

16/12/2009