VALIDATION REPORT

Sun-n-Sand Hotels Pvt. Ltd.

Generation of electricity from 4.8MW capacity wind mills by Sun-n-Sand Hotels Private Limited at Maharashtra

SGS Climate Change Programme
SGS United Kingdom Ltd
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Date of Issue:	**Project Number:**
09/11/2011	CDM.VAL2689
Project Title:	
Generation of electricity from 4.8MW capacity wind mills by Sun-n-Sand Hotels Private Limited at Maharashtra	
Organisation:	**Client:**
SGS United Kingdom Limited	Sun-n-Sand Hotels Pvt. Ltd.
Publication of PDD for Stakeholders Consultation	
Commenting Period:	10/07/2009 to 08/08/2009
First PDD Version and Date:	Version 01,05/05/2009
Final PDD Version and Date:	Version 05,14/09/2011

Summary:

Sun-n-Sand Hotels Pvt. Ltd. has contracted SGS to perform the validation of the project: Generation of electricity from 4.8MW capacity wind mills by Sun-n-Sand Hotels Private Limited at Maharashtra

Methodology Used: AMS I.D

Version and Date: 17 dated 17th June 2011

The scope of the validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against CDM Validation and Verification Manual (Version 01.2), Kyoto Protocol requirements, CDM Executive Board/UNFCCC rules.

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.

The report and the annexed validation describes a total of 6 findings which include:

- 7 Corrective Action Requests (CARs);
- 2 Clarification Requests (CLs);
- 0 Forward Action Requests (FARs); and

All findings have been closed satisfactorily. The project will be recommended to the CDM Executive Board with a request for registration

Subject:		**Document Distribution**
CDM Validation		
Validation Team:		
Ravi Kant Soni – Lead Assessor Harsh Raval – Assessor Ravi Kant Soni – Local Assessor Ravi Kant Soni – TA Expert- 1.2 (Wind) Anshul Sharma – Financial Expert		☒ No Distribution (without permission from the Client or responsible organisational unit)
Technical Review:		
Date:09/11/2011 Name: Vivek Kumar Ahirwar		☐ Limited Distribution
Authorised Signatory:		
Name: Siddharth Yadav Date: 15 November 2011		☐ Unrestricted Distribution

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1	26/09/2011	79
2	09/11/2011	79

Abbreviations

BM	Built Margin
CAR	Corrective action request
CDM	Clean development mechanism
CEA	Central Electricity Authority
CER	Certified emission reduction
CL	Clarification request
CM	Combined Margin
COP/MOP	Conference of Parties/Meeting of Parties
DNA	Designated national authority
DOE	Designated operational entity
EB	Executive Board
EIA	Environmental Impact Assessment
EIL	Enercon India Limited
EF	Emission Factor
EPC	Engineering, Procurement and Construction
ER	Emission Reduction
FAR	Forward action request
GHG	Greenhouse Gas(es)
HCA	Host Country Approval
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
ISHC	International Stakeholder Consultation
ISO	International Organization for Standardization
JMR	Joint Meter Report
kWh	Kilo Watt-hour
LoA	Letter of Approval
MAT	Minimum Alternate Tax
MEDA	Maharashtra Energy Development Agency
MERC	Maharashtra Energy Regulatory Commission
MoEF	Ministry of Environment and Forest
MP	Monitoring Plan
MSEDCL	Maharashtra State Electricity Distribution Company Limited
MWh	Mega Watt-hour
NEWNE	Integrated Northern, Eastern, Western, and North-Eastern regional grids
OHSAS	Occupational Health and Safety Management System Specification
OM	Operating Margin
O&M	Operation and Maintenance
PDD	Project Design Document
PLF	Plant Load Factor
PP	Project Participant
PPA	Power Purchase Agreement
QA/QC	Quality Assurance/Quality Control
RRR	Required Rate of Return
SSC-PDD	Small Scale-Project Design Document
T&D	Transmission & Distribution
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual
WACC	Weighted Average Cost of Capital
WTG	Wind Turbine Generator

Table of Content

Annexes:

1. Validation Opinion

SGS United Kingdom Ltd has been contracted by Sun-n-Sand Hotels Pvt. Ltd. To perform a validation of the project: Generation of electricity from 4.8MW capacity wind mills by Sun-n-Sand Hotels Private Limited at Maharashtra in India.

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

By installing of 6 Wind Turbine Generators (WTGs) in the states of Maharashtra with an installed capacity of 0.8 MW each (thus, total capacity of project 4.8 MW) and supplying the electricity to the NEWNE grid, the project activity will result in reductions of greenhouse gas (GHG) emissions that are real, measurable and give long-term benefits to the mitigation of climate change.

In our opinion, the project meets all relevant UNFCCC, CDM criteria and all relevant host country criteria. The project correctly applies methodology AMS I.D Version 17. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The total emission reductions from the project activity are estimated to be 76,210 t of CO2e over a 10 year crediting period, averaging 7,621 t of CO2e 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: 15 November 2011

2. Introduction

2.1 Objective

Sun-n-Sand Hotels Pvt. Ltd. has contracted SGS to perform the validation of the project: Generation of electricity from 4.8MW capacity wind mills by Sun-n-Sand Hotels Private Limited at Maharashtra 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 involves the installation of a wind farm enabling generation of electricity by Wind Turbine Generators (WTGs) with the total installed capacity of the project is 4.8 MW. The project activity involves the installation of 6 WTGs of 0.8 MW capacities each in the state of Maharashtra. Assessment team validated the accuracy of the project description through a combination of steps consisting of review commissioning certificates for the WTGs /13/ and /14/, site visit, and interview of the project participant and their representatives.

The electricity generated by the project activity will be supplied to the NEWNE grid (formerly called Western Regional grid) of the country. Thus the project aims at reducing GHG emissions by replacing the same amount of electricity from the western regional grid which would otherwise be generated by a fossil fuel based power plants. The corroboration that the electricity will only be exported and not used for captive consumption is available through PPA. / 15/ and /16/

2.4 The Names and Roles of the Validation Team Members

Assessment Team	
Name	**Role**
Ravi Kant Soni	Lead Assessor and TA Expert 1.2 (Wind) and Local Assessor
Harsh Raval	Assessor
Anshul Sharma	Financial Expert

Technical Review Team	
Name	**Role**
Vivek Kumar Ahirwar	Technical Reviewer
Vikas Bankar	TA Expert 1.2 (Wind)

3. Methodology

3.1 Review of CDM-PDD and Additional Documentation

The validation is performed primarily as a document review of the publicly available project document version 1 dated 05/05/2009 and the subsequent versions are version 02 dated 24/03/2010, version 03, dated 28/04/2011, version 04, dated 11/07/2011 and version 05 dated 14/09/2011 (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 22/09/2009. The results are summarised as Annex 1 in the validation report. The validation team has checked the statements mentioned in the PDD through review of documents and contacts with local stakeholders and project participant during site visit.

3.2 Use of the Validation Protocol

The validation protocol used for the assessment is designed in accordance with the Validation and Verification Manual, Version 1.2 (EB 55 annex 1). 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:

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

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 PP has submitted to the DOE, the letter of approval[/4/] issued by the Indian DNA, 'The Ministry of Environment & Forests' bearing No 4/16/2009-CCC dated 17/11/2009. The name of the project activity and Project Proponent in the HCA was verified against that in section A.1 and section A.3 of the PDD and was found to be consistent. Authenticity of HCA is verified through contacting Mr.Rajiv Kumar who is Member Secretary of the National CDM Authority, Ministry of Environment and Forests, Government of India[/39/]

The letter of approval confirms that:

(a) The Government of India has ratified the Kyoto Protocol in August 2002 and hence is a Party to the Kyoto Protocol

(b) The HCA is an approval of voluntary participation in the proposed CDM project activity

(c) The project contributes to Sustainable Development in India

(d) The HCA refers to the precise proposed CDM project activity – "Generation of electricity from 4.8MW capacity wind mills by Sun-n-Sand Hotels Private Limited at Maharashtra" – mentioned in the PDD being submitted for registration

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

Discussion of CARs/CLs

CAR #1 was raised requesting the PP to submit the HCA. In response, the PP provided the HCA dated bearing Letter No 4/16/2009-CCC dated 17/11/2009. It was verified against the PDD as mentioned above and accepted. Hence, CAR #1 was closed.

Opinion

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

4.2 Participation Requirements

The host country for this project is India and has ratified the Kyoto Protocol on 26th August 2002. This was checked from the UNFCCC website http://maindb.unfccc.int/public/country.pl?country=IN. The PP listed in tabular form in section A.3 of the PDD is Sun-n-Sand Hotels Private Limited. The HCA[/4/] from the Indian DNA approves the participation of the PP mentioned above. Therefore, a Party to the Kyoto Protocol approves the PP.

In addition, the name of the PP mentioned in the table in section A.3 of the PDD is consistent with the contact details provided in Annex 1 of the PDD. The validation team also confirms that no entities other than those approved as project participants are included in section A.3 of the PDD.

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 CER can be transferred to an Annex 1 Party, a Letter of Approval from Annex 1 Party will need to be submitted.

In accordance with paragraph 40 (b) of the CDM Modalities and Procedures, the PDD of the proposed CDM project activity was made publicly available for the stakeholder consultation process on the UNFCCC site at http://cdm.unfccc.int/Projects/Validation/DB/M0HZWR1KX6JY9A72Q6IUSCLVY3SNFE/view.html. The PDD was webhosted from 10/07/2009 to 08/08/2009 and comments were invited on the validation requirements.

The PP has submitted the MoC[/4.2/] letter, this was verified against the project title and information mentioned in Annex 1 and found to be consistent and hence accepted.

Discussion of CARs/CLs

The PP did not submit the MoC; this issue was raised under CAR #1. In response, the PP has submitted the MoC/4.1/ for the project activity which has been checked and it was found that name of entity in section 2 and annex 1, also the name of party in annex 1 was not mentioned in MoC. Thus the issue was further raised under CAR#1 .In response the PP has submitted the revised MoC/4.2/ including the missing information, this was checked and found to be satisfactory. Hence, issue was closed under CAR #1.

Opinion

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

4.3 Project Design Document including Project Description

The Project Participant has used the Small Scale Project Design Document Form (CDM-SSC-PDD) Version 3 (http://cdm.unfccc.int/Reference/PDDs_Forms/PDDs/index.html) and has followed the Guidelines for completing the CDM-SSC-PDD Version 5 (http://cdm.unfccc.int/Reference/Guidclarif/pdd/index.html). These are the latest available versions and have been confirmed from the UNFCCC website.

The title of the proposed CDM project activity "Generation of electricity from 4.8MW capacity wind mills by Sun-n-Sand Hotels Private Limited at Maharashtra," mentioned in section A.1 of the PDD was verified on the UNFCCC website and was found to be unique. The correctness of the project title was further verified by checking against the project title mentioned in the HCA/4 /.

The proposed CDM project activity is a wind power project which involves the installation of 6 WTGs with an installed capacity of 4.8 MW. The details of the same are as follows:

Sr. No.	Location (Village/Taluka/District)	Unique Identification Number	Date of Commissioning	Latitude	Longitude
1	Nivi/Patan/Satara	SNS – 45	10/12/2008	17°09'02.3"	73 °54'52.8"
2	Nivi/Patan/Satara	SNS – 46	10/12/2008	17 °08'56.6"	73 °54'53.2"
3	Karpewadi /Patan/Satara	SNS – 48	10/12/2008	17 °08'43.6"	73 °55'15.4"
4	Karpewadi/Patan/Satara	SNS – 49	10/12/2008	17 °08'47.6"	73 °55'14.0"
5	Karpewadi /Patan/Satara	SNS – 59	10/12/2008	17 °09'38.7"	73 °55'07.6"
6	Ambevangan/Akole/ Ahmednagar	SNS – 509	30/03/2009	19 °36'43.6"	73 °47'19.9"

The above mentioned details have been verified through the commissioning certificates/ 13/ and/ 14/provided by the PP. Geo co-ordinates of the project activity is also verified from the letter provided by WTG supplier/40/. The power produced by project activity will be exported to the NEWNE grid. The PPA/15/ and /16/ for the project has been checked to confirm grid connectivity and ownership. The technical details of the project activity were verified from the proposals and the purchase order / 12/, commissioning certificates and physical inspection by the assessment team during the site visit. The assessment team confirms that the description of the project mentioned by the PP in the PDD was found to be accurate and complete.

The project will achieve emission reductions by supplying zero emission electricity to the NEWNE Grid, which is dominated by fossil fuel based power plants. Therefore, the net electricity generated by the project will displace the same amount of electricity that would have otherwise been generated by fossil fuel based power plants and a certain amount of GHG emissions will be consequently reduced as well. The annual emission reductions are expected to be 7,621 tCO_2e.

The project falls under Type (i): Renewable Energy Projects, as the project activity involves generation of electricity using wind energy which is a renewable energy, and Category D, Grid connected Renewable

Electricity Generation as the generated electricity by the project will be exported to the grid. Hence according to simplified modalities and procedures for small-scale CDM project activities the type and category of the project activity has been correctly identified in the PDD.

The project proponent has given a written declaration[/37/] to confirm that the project will remain within the limits of a small scale project activity every year, for the entire crediting period and there is no usage of public funding[/38/] in the project activity. The project activity does not involve any modification or retrofitting an existing system and all the WTGs installed as part of the project activity are new as confirmed from purchase orders[/12/].

Discussion of CARs/CLs

CL #2 was raised requesting the PP to follow the CDM-SSC-PDD guidelines for the completion of the PDD. Section B.8 was not as per guidelines for completing the CDM-SSC-PDD, version 05. In response, the PP revised section B.8 of the PDD as per the guidelines. This has been checked and is accepted. Thus CL #2 was closed out. Detailed discussions have been provided in annex 3 under CL #2.

Evidence for geographical co-ordinates mentioned in section A.4.1.4 was not provided, thus CAR #9 was raised. In response the PP has provided a letter of undertaking from WTG supplier confirming the geographical co-ordinates, this was found consistent with the geo co-ordinates mentioned in section A.4.1.4 of PDD. Hence CAR #9 was closed.

4.4 Eligibility as a Small Scale Project

The proposed CDM project activity is a renewable energy project activity with an installed capacity of the total 4.8 MW that supplies the generated power to the grid. This has been verified by physical verification of the WTG during the site visit; crosschecked from the technical specification mentioned in the proposals, purchase order[/ 12/], and the PPA[/15/ and /16/] signed with the state utilities.

Thus, the proposed CDM project activity qualifies within the threshold of 15 MW and meets the eligibility criteria for small-scale CDM project activities mentioned in paragraph 6 (c) of decision 17/CP.7. Also, the project activity conforms to type (i) (Renewable Energy Projects) and category D (Grid connected renewable electricity generation).

The PP has used AMS I.D Version 17, which is an approved small-scale methodology and has been verified from the following site http://cdm.unfccc.int/methodologies/DB/RSCTZ8SKT4F7N1CFDXCSA7BDQ7FU1X. The applicability criteria of the methodology have been described in section 4.5 below.

Opinion

As per the requirements of paragraphs 134-136 of VVM version 01.2 (EB 55 Annex 1), the validation team is of the opinion that the proposed project activity is eligible as a small-scale CDM project activity.

4.5 Applicability of selected methodology to the project activity

The proposed CDM project activity uses the small scale methodology AMS I.D. / Version 17. The following steps have been undertaken for assessing the applicability conditions of the methodology mentioned in paragraphs 1 to 8 of the methodology:

1. Paragraph 1 – The project activity is a grid connected wind power project and therefore is a renewable energy project. The project activity supplies electricity to the NEWNE Grid of India. The use of WTGs for power generation was confirmed during the site visit and through the purchase orders[/12]. The grid connectivity of the project was verified through the PPA[/15/ and /16/] signed with the respective state utilities.
2. Paragraph 2 –.The project activity supplying electricity to NEWNE grid which is regional grid. This was also verified during the site visit.
3. Paragraph 3 – The purchase orders[/12 /] and clearances[/33/ to /35 /] issued for the project activity indicates that the project activity is a Greenfield plant. It is not a capacity addition or retrofit or replacement as defined in the methodology.
4. Paragraph 4 – This criteria is related to hydropower plants and hence not applicable to the project activity.

5. Paragraph 5 – The project activity only has a renewable component as confirmed in paragraph 1. The installed capacity of the project is 4.8 MW which is within the threshold of 15 MW for small-scale projects. This was verified from the commissioning certificates/ 13/, /14/.
6. Paragraph 6 – The project activity is a grid connected wind power project and thus does not involve combined heat and power generation systems. This was verified during the site visit.
7. Paragraph 7 – This criteria is not applicable since the project is a Greenfield plant as discussed under paragraph 3.
8. Paragraph 8 – This criteria is not applicable since the project is a Greenfield plant as discussed under paragraph 3.

Opinion

Based on the above discussion, that validation team confirms that the proposed CDM project activity meets all the applicability conditions and all other stipulations of the selected methodology AMS I.D Version 17.

4.6 Project Boundary

The selected methodology AMS I.D Version 17 paragraph 9 states that "The physical, geographical site of the renewable generation source delineates the project boundary."

The PP has described the project boundary in section B.3 of the PDD and has included the WTGs, transformer, meters, sub-station, and the NEWNE grid to which the proposed project activity evacuates power. This was verified through physical inspection during the site visit and through the commissioning certificates/ 13/,/14/ and PPA /15/,/16/. The NEWNE grids have been correctly identified for the calculation of electricity emission factor, as the project displaces electrical energy from both the grids, as per the CEA database version 04/31/ available at the time of PDD webhosting for ISHC.

The diagrammatic description of the project boundary mentioned in section B.3 of the PDD the project boundary correctly describes the boundary.

It has also been checked as per the requirements of paragraph 77 of the VVM version 01.2 that there will not be any greenhouse gas emissions occurring within the proposed CDM project activity boundary as a result of the implementation of the proposed CDM project activity which are expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology.

Discussion of CARs/CLs

CL #2 was raised requesting the PP to provide the physical delineation of project boundary in the PDD. The PP was requested to provide a pictorial representation of the project boundary. In response, the PP has provided a pictorial representation of the project boundary for the Satara site and the Ahmednagar site in section B.3 of the PDD. This has been checked and is found to be appropriate, hence accepted. Thus, CL #2 was closed out.

Opinion

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

4.7 Baseline Selection and Additionality

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

"If the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the electricity delivered to the grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources."

The baseline emissions have been calculated as per paragraph 11 of the methodology:

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

$BE_y = EG_{BL,y} * EF_{CO2,\ grid,\ y}$

Where:

BE_y	Baseline Emissions in year y (t CO2)
$EG_{BL,\ y}$	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh)
$EF_{CO2,grid,y}$	CO2 emission factor of the grid in year y (t CO2/MWh)"

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

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

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

The PP has referred to version 02.2.0 of the tool to calculate emission factor for an electricity system, which is the latest available version.

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

4.7.1 Additionality

The proposed CDM project activity has demonstrated additionality by applying the Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities and by referring to paragraph 1(a) Investment barrier of EB 35 Annex 34 (Non-binding best practice examples to demonstrate additionality for SSC project activities). The PP has appropriately selected the benchmark analysis to demonstrate additionality. The benchmark analysis has been described in detail in section 4.7.4 below.

The approach used in the PDD was first assessed by verifying the following documents:

1. Purchase orders/12/ issued to the WTG suppliers
2. O&M agreements/30/
3. Board resolution extracts/ 17/ and /18/
4. CEA database version 4 /31/
5. Evidence for PLF as per EB 48 annex 11/27/
6. MERC order 2003 dated 24/11/2003/28/
7. Land Lease Deed/32/
8. Clearance issued by MADA/33/ and /34/
9. Commissioning Certificates/13/ and /14/
10. Power purchase agreements/15/ and /16/

The data, rationales, assumptions and justifications mentioned in the PDD/1.4/ and the IRR excel sheet/2/ were crosschecked against the local knowledge, of the validation team, about regulatory and applicable legal requirements in the Host country India. The documents were also verified by a sectoral and financial expert.

The information in the above mentioned documents were also verified against the actual situation on the site and found to be accurate. The staff at the sub-station and the representative of the WTG providers was also interviewed to verify the accuracy in the documents.

Opinion

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

4.7.2 Prior Consideration of the Clean Development Mechanism

The start date of the proposed CDM project activity has been mentioned in the PDD as 05/08/2008. The evidence submitted by the PP for this is the purchase order[/12/] issued to EIL by Sun-n-Sand Hotels Pvt. Ltd. for the supply of 6 WTGs. The purchase order was checked for the date and was found to be consistent with that mentioned in the PDD. Also, the start date was found to be in line with the definition of start date mentioned in the Glossary of CDM terms version 5 and paragraph 67 of EB 41 meeting report.

The start date of the proposed CDM project activity is 05/08/2008, which is after the date of 02/08/2008 and hence it is a new project activity as per EB 41 annex 46. For new project activities, the PP must inform a Host Party DNA and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status. Such notification must be made within six months of the project activity start date.

The PP has sent a letterl[/20/] dated 14/01/2009[/20/] informing the host party DNA about the commencement of the project activity and intention to seek CDM status. This letter was sent through book post because there was no online system for the same at that time. The assessment team has verified the email and found to be acceptable. Thus, the PP has informed the host party DNA within 6 months of the project activity start date as per the requirements of paragraph 2 of EB 49 Annex 22.

The dates to be taken into account while validating prior consideration of CDM as per the guidelines published in EB 41 Annex 46 and EB 49 Annex 22 with respect to intimating the UNFCCC secretariat are as follows:

- **05/08/2008**[/12/] – Start date of the project activity
- **15/01/2009** – PP had sent an email[/19/] to the UNFCCC secretariat informing about commencement of the project activity and of their intention to seek CDM status. As per the EB 49 Annex 22, the PP was supposed to use the standardized form F-CDM-Prior Consideration to notify the Host party DNA and the UNFCCC Secretariat about the proposed CDM project activity. But, in this case PP has not used the form since it was adopted only in 17/07/2009 which is much after the dates 14/01/2009 and 15/01/2009, on which the PP had written to the Host party DNA & the UNFCCC secretariat. This intimation has been done within 6 months of the start date of the project activity. All information as required by the form has been mentioned by the PP.
- **20/01/2009**–UNFCCC has acknowledged the receipt of notification via email[/21/] dated 20/01/2009.The receipt of the notification to the UNFCCC secretariat was verified on the UNFCCC website at http://cdm.unfccc.int/Projects/PriorCDM/notifications/index_html. This link mentions that the notification was received by the secretariat on 15/01/2009.

As per the above chronology, it can be observed that the PP has notified the UNFCCC on 15/01/2009 which is within 6 months of the project activity start date.

Opinion

The validation team is of the opinion that the CDM was seriously considered in the decision to implement the project activity as per the requirements of EB 41 annex 46(latest guideline available at time of notification sent to UNFCCC).

4.7.3 Identification of alternatives (if applicable)

Not applicable

4.7.4 Investment analysis (if applicable)

The PP has referred to the investment barrier mentioned in EB 35 Annex 34 to demonstrate additionality and carry out the investment analysis. This has been described in the PDD. The investment analysis has been validated against the requirements of the "Guidance on assessment of Investment Analysis" (EB 62 Annex 5). The PP has selected project IRR as the financial indicator and WACC as the benchmark. In the investment analysis excel sheets, the equity IRR has been appropriately calculated using the XIRR function

since it takes into consideration the time of cash inflow and outflow. The function has been correctly applied in the excel sheet.
The following parameters have been used to calculate the Project IRR:

1. Total Capacity
2. Project Cost
3. Plant Load Factor (PLF)
4. O&M cost and its escalation
5. Tariff rate and its escalation
6. Escalation in tariff
7. Income tax
8. MAT

The assessment team has validated the key input parameters from the proposals provided by WTG supplier and confirm that proposals were available with the PP when the investment decision was taken inline with paragraph 6 of EB 62 annex 5. Also some parameters have been cross checked with the MERC Order 2003 because it was the latest authentic and publically official document available at the time of the decision making and hence appropriately applicable to the project activity.

To verify the accuracy of financial calculations carried out for investment analysis presented in IRR excel sheet has been assessed under the applicable/relevant criteria of latest version of the Guidance on the Assessment of Investment published in 62nd meeting of EB under annex 5(Ref: paragraph 110 VVM version 1.2).

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

Project Capacity

The number of WTG and the capacity of each WTG mentioned below have been considered from the proposals[/10/ and /11/] submitted by EIL.

No. of WECs	6
Capacity (MW)	0.8
Total Capacity (MW)	4.8

Project Cost and Means of finance

Total project is INR 270 million. This investment is taken as per the quotation for 4.8 MW wind project placed by WTG supplier EIL [/10/, /11/] this is found inline with the paragraph 6 of "Guidelines on assessment of investment analysis" version 05(EB 62 Annex 5).The project cost includes the following particulars:

- Land charges
- WTG-Plant & Machinery
- Development Charges (Civil, Electrical, Erection, Testing, and commissioning charges)
- Service tax on Civil, Electrical, Erection, Testing, and commissioning
- Pre operative Expenses i.e. Power Evacuation Charges and Government/Statutory Charges

The proposed CDM project activity is 100% equity financed project. The extracts of the board resolution[/17/ and /18/] clearly states that the project will be funded by equity alone. The CA certificates[/29/] also confirms that the PP has not availed any term loan or credit facilities from any banks or financial institutions. This confirms that the project is 100% equity funded. To verify project cost/MW and particulars included in

project cost, validation team has also checked projects recently registered under CDM whose data is publically available, these projects are similar in nature and parameters are comparable.

1. Project Title: Wind Power Project in Maharashtra by M/s L. B. Kunjir Engineers & Contractors

   (UNFCCC Ref. No-3554)(http://cdm.unfccc.int/Projects/DB/RINA1269599134.41/view)

2. Project Title:1.2 MW Wind Power Project in Maharashtra

   (UNFCCC Ref.No-3977)(http://cdm.unfccc.int/Projects/DB/RWTUV1284217219.41/view)

3. Project Title: 20 MW Enercon Wind farms (SAI) Pvt. Limited in Maharashtra

   (UNFCCC Ref.No-3854)(http://cdm.unfccc.int/Projects/DB/DNV-CUK1279516994.31/view)

4. Project Title: Wind Power Project by M/s Chhotabhai Jethabhai Patel & Co. (CJP) at Sinnar, Maharashtra (UNFCCC Ref.No-3550) (http://cdm.unfccc.int/Projects/DB/RINA1269594627.46/view)

In light of the above information the validation team is able to confirm that the project cost considered is appropriate and acceptable.

Plant Load Factor (PLF):

The PP has considered PLF 20% for financial analysis. The PLF value was also crosschecked against the MERC order dated 24/11/2003 /28/ and found to be consistent and appropriate. In line with the guidelines published under annex 11 paragraph 3(b) of EB 48, the PP has also provided PLF study report /27/ prepared by independent engineering consultant Kentech Konsulteam for the project activity. This report is based on the study of annual average generation of the existing WTGs at project sites from 01/04/2007 to 31/03/2008; confirm that average annual PLF at project site around 18.55% which is less than the PLF of 20% that has been considered for the project activity and hence, conservative.

O&M cost & Escalation

O&M cost of INR 0.55 million/WTG with service tax as 12.36%. Hence total O&M cost is INR 3.71 million for project activity i.e. for 6 WTGs. This will be payable from commissioning to end of 10th year for each WTG with annual escalation 5% for each year cumulatively /11/. This is confirmed via proposal sited by EIL to the PP for investment in proposed project.

The assessment team has further checked the actual O&M cost as per the O&M contract/ 30/ signed by the PP with EIL on 5th August 2008.As outlined in the contract O&M cost is free for first 3 years since commissioning and applicable from 4th year onwards. Also verified that O&M cost per WTG will be INR 0.50 million.

The 5% annual escalation in O&M cost was also cross verified from recently registered wind project in the same region, the details of which are mentioned below:

1. "12.5 MW Small Scale Grid Connected "Wind Electricity Generation Project" by KRBL Ltd.,District Dhule, Maharashtra, India" having UN reference no.2894 registered on 02/11/2009 for Maharashtra (http://cdm.unfccc.int/Projects/DB/RWTUV1249547331.17/view)
2. "Wind Power Project in Maharashtra by M/s L. B. Kunjir Engineers & Contractors" in India having UN reference no.3554 (http://cdm.unfccc.int/Projects/DB/RINA1269599134.41/view)
3. "Roaring 40's Wind Farms (Khandke) Private Limited – Phase III" having UN reference no.3611 registered on 18/09/2010 for Maharashtra (http://cdm.unfccc.int/Projects/DB/DNV-CUK1270220130.38/view)

In view of above information validation team able to confirm that annual escalation in O&M cost considered for project activity is appropriate and hence accepted.

Tariff rate & escalation in tariff:

The PP has considered the tariff rate as per the MERC order dated 24/11/2003 /28/, which allows value as INR 3.50 per kWh with an annual escalation of INR 0.15 per year up to 13th year. During the validation it was confirmed that this tariff order was the latest available official document which was valid and applicable for this project at the time of the investment decision. It is stated under Section 2.01 of Article 2 (Regulatory

Approval) of the PPA[/15/, /16/] between the PP & MSEDCL that "The sale of wind energy under this agreement shall be governed by MERC's order dated 24 November 2003". Hence, it is evident that the tariff order is the basis of the PPA. As per the PPA and the MERC tariff order, the applicable tariff rate for the first 13 years has been clearly defined, but the same is unclear from the 14th year onwards. Hence, the PP has considered a fixed tariff rate of 3.50 INR/kWh (tariff rate applicable during the 1st year) from the 14th year onwards and has carried out a sensitivity analysis for the same, which has been discussed towards the end of this section. This is further substantiated by the fact that MERC has applied a cost plus approach for determining the tariff as per section 1.4.2 of the MERC tariff order 2003 which states that "The Commission notes that in Cost Plus Approach, which the Commission has adopted for tariff proposal, rate per unit charged by such projects during initial period of 10 years is bound to be higher as during this period the project has various debt related obligations. However, it is essential that the consumer is able to enjoy the benefit of cheaper power once all debt related obligations are paid off and project has virtually no variable costs". The tariff after 13th year as calculated using cost plus approach outlined in MERC tariff order 2003 is comes to be INR 2.34/kWh.

The validation team confirms that the tariff rate considered after the 13th year is appropriate hence accepted.

Income tax:
The PP has considered income tax rate 33.99% is taken as per the Income Tax Act 1961 (Ref:http://www.iadvisory.gov.sg/upload/India_Budget2008-Highlights.pdf), was applicable at the time of decision making. The value has been verified through source web site. As the website is official data, this eliminates any ambiguity that there could have been in this regard.

Minimum Alternative Tax Rate *(MAT):*

MAT is taken as per the Income TaxAct1961 as 11.33%. Value has been verified through source web site (ref:http://www.iadvisory.gov.sg/upload/India_Budget2008-Highlights.pdf), still applicable at the time of decision making . As the website is official data, this eliminates any ambiguity that there could have been in this regard.

Income Tax Depreciation rate:

On Wind Energy Generators:

Depreciation rate considered as 80% as outlined under section 32 of the Income Tax Act 1961 (Reference: http://www.vakilno1.com/bareacts/incometaxact/s32.htm)

On other Assets:

Depreciation rate considered as 10% as outlined under section 32 of the Income Tax Act 1961 (Reference: http://www.vakilno1.com/bareacts/incometaxact/s32.htm)

As the website is official data, this eliminates any ambiguity that there could have been in this regard.

Book Depreciation Rate:

Depreciation on Fixed Assets used for Generation of Wind Power is charged @ 5.28% on Straight Line Method (SLM), i.e. treating it as a continuous process (Source: http://www.reiljp.com/pdf/SchB0809.pdf).This information has been further cross checked with Companies Act, Schedule XIV, Item II (i) (b); found consistent and hence accepted.

Working Capital Requirements (Days):

Following factors have been considered under the working capital requirement:

1. Receivables (60 days):
2. O&M Expenditure(30 days)

PP has appropriately considered a 60 day billing cycle for the receivables in the working capital calculations and considered the O&M payment schedule as one month. This is as per the Maharashtra Electricity regulatory commission (terms and conditions of tariff) regulations 2005.

Working Capital Interest Rate:

The PP has considered Working Capital Interest Rate as 12.5% which is evident from data published by Reserve Bank Of India(Ref: http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/84164.pdf).

As the website is official data, this eliminates any ambiguity that there could have been in this regard.

Project IRR:

The assessment team validated the assumptions as above and observed that they are in MERC order. All of the above-mentioned assumptions have been verified in the PDD[/1.4/] and IRR excel spreadsheet[/2/] and have been found to be consistently mentioned and applied in all calculations. Hence, it satisfies all the requirement of paragraph 6 of EB 62 Annex 5.

The Project XIRR calculated based on above assumptions and value arrived as 9.24%.

Suitability of Benchmark:

An investment analysis of the project activity was conducted considering project IRR (Post-tax) as the most suitable financial indicator. The Weighted Average Cost of Capital (WACC) has been determined in order to establish the benchmark of the project activity. This is found inline with paragraph 12 of EB 62 Annex 5.

The WACC for the project activity has been calculated as follows:

WACC = Cost of Equity * % of equity + Cost of Debt (1-T)* % of debt

The values of % of equity, % of debt, Cost of Debt and tax (T) have been mentioned among the input values above. Re has been estimated as per the CAPM as mentioned below

$Re = Rf + \beta (Rm – Rf)$

Risk Free Return (Rf) – has been considered as per the information provided by the Reserve Bank of India (RBI). The value of 10.22% for the financial year 2006-2007 was available at the time of decision making. It can be confirmed that the data is publically available and standard in the market (EB 62 Annex 5 Para 13).

Market Return (Rm) – In order to avoid the risks associated with the project, market return has been calculated by using the BSE Sensex (Bombay Stock Exchange Sensitive Index). BSE Sensex is composed of the 30 largest and most actively traded stocks in the market. The dip and the rise of the stock market are clearly identified from the movement of the BSE Sensex. Based on this, the market return for the project activity has been estimated at 19.03%.

Debt: Equity–

The WACC of the project activity was based on debt equity ratio of 70:30. This was given the fact that the relevant regulations and orders at the time, refer to this ratio as the normative debt equity ratio for wind power projects in India. Also the Maharashtra Electricity Regulatory Commission (MERC) tariff order dated 24th November, 2003 has stipulated a debt equity ratio of 70:30 for determination of tariff for purchase of energy by utilities from wind energy projects. This is found inline with paragraph 18 of EB 62 Annex 5, hence accepted.

Cost of debt– it has been considered on the basis of Prime Lending Rate published by Reserve Bank of India, as 12.50%. The same information could be verified from the official web site of Reserve Bank of India (Ref: http://rbidocs.rbi.org.in/rdocs/AnnualReport/PDFs/86591.pdf.).As this parameter was available at the time of investment decision and standard in market hence accepted.

Beta (β) –

The PP has considered applicable Beta value on the basis of the raw Beta values of all power generating companies in India which were listed on the stock exchange at the time of this investment.

Company Name	Raw Beta
RELIANCE INFRASTRUCTURE	1.256
GUJARAT INDS	0.902
TATA Power	1.196
NEYVELI LIGNITE	1.285

CESC LTD	1.265
BF Utility	2.632

The project participant has considered the average of above data arrived as 1.423 which is found to be appropriate. The raw beta values have been directly obtained from a third party source (Bloomberg) and the snapshots of the same are available in appendix 4 of the PDD.

Sensitivity Analysis

According to the "Guidance on the Assessment of Investment Analysis"(EB 62,Annex 5), only variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues should be subjected to reasonable variation. The PP has appropriately selected the following variables under the sensitivity analysis:

1. Project cost
2. O&M Cost
3. Plant Load Factor (PLF)
4. Tariff rate

The results of the sensitivity analysis have been presented in the PDD[/1.4/]. The results have also been presented in the excel spreadsheet[/2/] in a reproducible manner. Thus, it satisfies the requirements of paragraph 20 of EB 62 Annex 5.

The sensitivity analysis for the variables covers a range from +10% to -10%, which is appropriate in context of the project requirements. Thus, it satisfies the requirements of paragraph 21 of EB 61 Annex 13.

The outcome of the sensitivity analysis for each of the variable along with the selected benchmark is discussed below.

Project Cost:

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

-10%	XIRR	10%	Benchmark
10.82%	9.24%	7.91%	11.91%

As per the above table, it is confirmed that even after 10% reduction in project cost the project IRR does not crosses the benchmark 11.91%.

It is worthwhile to note that Project XIRR touches the benchmark (i.e. 11.91%) if project cost for the project activity reduces by 16%. However, the actual reduction in project cost is only 11.11%. Reduction of the project cost by more than that verified from purchase orders for project activity is not expected since the project cost has been fixed in the firm purchase orders on their placement and the project has already been executed and commissioned.

O&M Cost:

Anticipating the expected variation in O&M cost the PP has also conducted sensitivity analysis for O&M cost to an extent of ± 10% in line with the Guidelines on the assessment of investment analysis (EB 62, annex 5). It is noticeable from the analysis that project IRR does not cross the benchmark if O&M cost decreases by 10%.

+10%	Base IRR	-10%	Benchmark
8.96%	9.24%	9.51%	11.91%

It is also noted that even with a 100% decrease in O&M cost, the IRR does not cross the benchmark. Hence, the IRR crossing the benchmark for the O&M cost is highly unlikely.

Plant Load Factor (PLF):

It is observed that the project IRR is below the selected benchmark even after 10% increment in PLF.

-10%	IRR	10%	Benchmark
7.47%	9.24%	10.91%	11.91%

The project IRR touches the benchmark (i.e. 11.91%) if the PLF for the project activity increases by 16.2%. The PLF considered for the project activity is 20%, which is more than the actual PLF achieved i.e. 18.55% (evidence for the same has been mentioned above with the parameter description under the heading of Plant Load Factor). Thus, an increase in the PLF above that already considered is an unlikely scenario. This further implies that the IRR will not cross the benchmark since the actual PLF values are lesser than the values considered.

Tariff rate:

Tariff rate for the first 13 years has been clearly defined (evidence for the same has been mentioned above with the parameter description under the heading of Tariff rate and escalation in tariff**)** but the same is unclear from the 14th year onwards. Hence, the PP has considered a fixed tariff rate of 3.50 INR/kWh (tariff rate applicable during the 1st year) from the 14th year onwards and has carried out a sensitivity analysis.

+10%	Base IRR	-10%	Benchmark
9.49%	9.24%	8.97%	11.91%

As per the above table, it can be confirmed that even after 10% increase in tariff rate, the project IRR does not crosses the benchmark 11.91%.

Based on the above discussions, it can be established that the project activity is financially not viable without the benefits of CDM.

Discussion of CARs/CLs

CAR #3 was raised requesting the PP to address the following issues:

1. PP was requested to demonstrate substantial proof for the barrier faced in implementation of proposed CDM project activity due to prevailing practice and clarify how it is project specific. In absence of appropriate evidences to justify common practice analysis, PP has omitted the same from discussion in the revised PDD. This has been checked and is accepted.
2. PP was requested to provide all the data with sources, references as used financial calculation excel spreadsheet for the project activity and incorporate the same in the PDD. In response the PP has submitted the spreadsheet reflecting the detailed computation of IRR and benchmark along with the sources of the input parameters. This has been checked and is accepted.
3. The commissioning date for 4 MW is 10/12/2008 and for remaining 0.8 MW is 30th March 2009. PP was requested to explain why the PP has not calculated working capital for year 08-09 accordingly. The PP is also requested to revise the working capital loan estimation. In response the PP revised the project IRR calculations by considering working capital for the year 2008-09 in the revised IRR calculations. This has been checked and is found to be satisfactory and hence accepted.
4. The commissioning date for 4 MW is 10/12/2008 and for remaining 0.8 MW is 30th March 2009. For the financial year Apr 08 to Mar 09, the PP was requested to revise the O&M Cost, Insurance accordingly. In response the PP revised the project IRR calculations. The PP considered the actual O&M costs in the calculations. This has been checked and is accepted. The insurance cost is required to be paid for the overall project activity irrespective of the project commissioning schedule. Hence the PP has considered insurance cost at 0.15% of the total project cost for the entire period of IRR computation. This has been checked and is accepted.
5. Investment barrier analysis has mentioned debt equity ratio as 70:30. It has been mentioned that “This is mostly attributable fact that several regulations and orders refer this as the normative debt equity ratio for wind power projects.” The PP is requested to provide substantial proof for the same. In response the PP has given a reference to the Maharashtra Electricity Regulatory Commission (MERC) tariff order dated 24th November, 2003 which has stipulated a debt equity ratio of 70:30 for

determination of tariff for purchase of energy by utilities from wind energy. The evidence provided supporting the debt: equity of 70:30 is found authentic, verifiable and available to PP at the time of investment decision, hence accepted.

6. The PP was requested to clarify why PP has not taken un-levered Beta value? BSE Sensex used is not a fully diversified portfolio and doesn't provide a perfect market picture. PP was also requested to clarify why the PP has not used an index which has more number of stocks and which can represent a complete market. In response, the PP has tried to justify that a conservative approach has been followed in order to carry out the investment analysis of the project activity. It has been verified that, since project activity is completely funded by internal accrual of capital i.e. 100% equity, hence the appropriate benchmark would have been cost of equity (20.9%). However, considering a debt equity ratio of 70: 30 the benchmark calculated by the PP is WACC (11.91%) which is quite conservative. In view of this information the beta value used can be considered as appropriate and hence accepted.
7. The PP was requested to revise tax calculation incorporating benefits under section 80IA and carry forward of business losses. In response, the PP has submitted the revised IRR sheet reflecting the tax benefit on account of section 80IA and accelerated tax depreciation. This has been checked and is accepted.
8. PP was requested to provide the evidence for the 100% equity considered for the project activity in the financial calculations. In response, the PP has submitted a certificate from a statutory auditor of the project proponent endorsing that the project was structured to be financed by 100% internal accrual of capital. This has been checked and is accepted.
9. PP was requested to consider sensitivity analysis for the critical parameters as per para 17 of Annex 58 EB 51. In response, the PP has provided sensitivity analysis for all the relevant parameters in the PDD and also in the excel sheet in line with the Para 17, EB51 annex 58. This has been checked and is accepted.
10. PP has considered MAT for calculation of cost of equity. The PP is requested to justify consideration of MAT instead of appropriate corporate tax. In response, the PP has revised the WACC computation with post tax cost of debt calculated using corporate tax rate. This has been checked and is accepted.

Thus, CAR #3 was closed out. Detailed discussions have been provided in annex 3 under CAR #3.

CAR #4 was raised requesting the PP to address the following issues:

1. PP was requested to provide the evidence for the PLF determined as per Annex 11 of EB 48.

   The PP has provided PLF assessment study report issued by M/s Kentech Konsulteam Mumbai dated 10/06/2008; this report is based on the study carried out at the sites where project activity is located. This is found inline with paragraph 3(b) of EB 48 Annex 11, hence accepted.

2. PP was requested to clarify how the T&D losses will be accounted in the CER/electricity generation calculation.

   In response the PP mentioned that the emission reduction from the project activity is calculated from the net electricity supplied to the grid by the project. The net electricity supplied to the grid by the project activity is calculated based on the measured values of "export" and "import" on the MSEDCL meter, where joint reading is taken by EIL representative and MSEDCL officials. The export value of the electricity in the MSEDCL meter is the net of the export values from the WTGs and the transmission losses. Since, the transmission and distribution losses are accounted in the export of the MSEDCL meter hence the same has not been presented separately. This has been checked and is accepted.

Thus, CAR #4 was closed out. Detailed discussions have been provided in annex 3 under CAR #4.

CAR #6 was raised requesting the PP to address the following issues:

1. As per webhosted PDD it was mentioned that proposal from Enercon India Limited dated 04/04/2008 is considered for the decision making. However, in the revised submission the PP has

changed the chronology, including the reference of proposal dated 04/06/2008 received from Enercon India Limited for the proposed wind power project. The PP was requested to clarify which proposal was considered for the investment decision.

In response the PP mentioned that, the webhosted PDD mentions the reference to the proposal dated 04/04/2008. It has verified through Board note that proposal dated 04/04/2008 was an indicative proposal and hence the PP had further invited proposal from WTGs suppliers. It can be confirmed that proposal dated 04/06/2008 was the final one and the basis for investment decision. This has been checked and is accepted.

2. The WACC for the project has been changed from 13.9% to 11.91% at the time of decision making. The PP was requested to justify this difference with appropriate evidences.

In response the mentioned that the applicable tax rate and cost of debt considered in benchmark calculation was incorrect in the earlier submission. On reporting the proper values in the revised submission, it led to a change in benchmark value from 13.9% to 11.91%. This change in the benchmark has been validated by the finance expert and is accepted.

3. The tariff beyond 13th year has been considered as 5.30 Rs/Kwh in the Webhosted PDD, which is used at the time of decision making. The PP has considered this as 2.34 Rs/KWh in the revised financial analysis. PP was requested to clarify this change.

In response the PP mentioned that the tariff after 13th year was calculated in different scenario since the figure INR 5.30/kWh is not well supported by documentary evidence hence not considered in revised IRR calculation. As per paragraph 1.4.2 MERC Order dated 24/11/2003 "The Commission notes that in Cost Plus Approach, which the Commission has adopted for tariff proposal, rate per unit charged by such projects during initial period of 10 years is bound to be higher as during this period the project has various debt related obligations. However, it is essential that the consumer is able to enjoy the benefit of cheaper power once all debt related obligations are paid off and project has virtually no variable costs". Using cost plus approach, tariff after 13th year is calculated as INR 2.34/kWh. Still PP has considered the tariff rate after 13th year as INR 3.50/kWh which is found appropriate and hence accepted.

4. "Operation & Maintenance Cost from the date of commissioning for a period of 10 years" has been considered as 1.50 % in the web hosted PDD. However it is revised as 1.37% in the revised submission for decision making. PP was requested to justify this change in O&M cost with relevant evidences.

In response the PP mentioned that the O&M Cost from the date of commissioning for a period of 10 years was considered as 1.37% of the total project cost at the time of investment decision making, based on final Enercon proposal dated 04/06/2008. However, the webhosted PDD mentioned the O&M cost as 1.50% of total project cost was reference to MERC Order 2003. Also O&M cost has been subjected to reasonable variations under sensitivity analysis and confirmed that there will not be any negative impact on additionality if O&M cost decreases by 10%. This has been checked and is accepted.

Thus, CAR #6 was closed out. Detailed discussions have been provided in annex 3 under CAR #6.

CAR #8 was raised asking clarification for following issues:

1. Why the latest guidelines EB62 Annex 05 have not been followed for IRR and Benchmark calculation.
2. Results of sensitivity analysis and parameters considered under sensitivity analysis were not consistent in IRR excel spread sheet and PDD.
3. Why sensitivity over O&M has not kept interlinked in IRR excel spreadsheet.

In response to CAR #8, the PP has updated the information's provided in PDD inline with latest guidelines on investment analysis (EB 62 annex 5).Results of sensitivity analysis have been made consistent with PDD and IRR sheet, also sensivity over O&M cost was linked appropriately. Thus CAR #8 was closed out satisfactorily.

Opinion

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

- The period of assessment considered for the project activity is 20 years, thus satisfying the requirements of paragraph 3 of EB 62 Annex 5.
- All input values used in the analysis have been checked against the documentary evidences mentioned in section 4.7.1 above. The values have been found to be valid and applicable at the time of the investment decision taken by the PP. In addition, the values mentioned in the excel spreadsheet and the PDD have been consistently applied in all calculations. Thus, it satisfies the requirements of paragraph 6 of EB 62 Annex 5.
- PP has selected the WACC as the benchmark, which is appropriate, as the financial indicator selected is Project IRR. Thus, it satisfies the requirements of paragraph 12 of EB 62 Annex 5.
- It is confirmed that the calculated benchmark is based on parameters whose are standard in market and suitably applied in the context of the underlying project activity Thus; it satisfies the requirements of paragraph 13 of EB 62 Annex 5.
- PP has used debt: equity as 70:30 which is the typical debt/equity finance structure observed in the wind sector in India. Thus; it satisfies the requirements of paragraph 18 of EB 62 Annex 5.
- PP has presented the results of the sensitivity analysis in the PDD and the excel spreadsheet. The analysis is reproducible in the spreadsheet. Thus, it satisfies the requirements of paragraph 20 of EB 62 Annex 5.
- The sensitivity analysis appropriately covers a range from +10% to -10% and hence satisfies the requirements of paragraph 21 of EB 62 Annex 5.

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

Baseline emissions ($\mathbf{BE_y}$) – The combined margin emission factor, baseline emissions and emission reductions calculations have been mentioned in the emission reduction excel sheet[/2/] and the PDD[/1.4/]. The baseline emissions equivalent to tCO_2 due to the project have been calculated as the product of the net electricity supplied to the grid and the grid emission factor as per the combined margin approach described in the 'Tool to calculate the emission factor for an electricity system' (version 02.2.0). The power produced will be exported to the NEWNE grid. Hence, the grid emission factor and the corresponding baseline emissions have been calculated for the NEWNE grid.

The grid emission factor has been arrived at as per paragraph 12(a) of AMS I.D Version 17 (as mentioned in section 4.7 above) in the following manner. The values of OM and BM have been determined ex-ante as per the CEA database version 4[/31/], which is published by the Ministry of Power, Government of India. The CEA is the sole authority for publication of such data in India. The version of the database referred to is the one that was available at the time of webhosting the PDD for the ISHC. Thus the selection of the values of OM and BM is appropriate. The values OM, BM, and CM have been identified as follows:

	OM	BM	CM

	(tCO_2/MWh)	(tCO_2/MWh)	(tCO_2/MWh)
NEWNE grid	1.0090	0.5977	0.90618

The OM has been determined as the average of the previous 3 years values mentioned in the CEA database. The value of BM has been identified directly from the CEA database. The combined margin emission factor has been arrived at by applying weights of 75% for OM and 25% from BM, as specified in the tool.

The baseline emissions for the project activity has been calculated as the product of the net electricity supplied to the grid and the grid emission factor as per paragraph 11 of AMS I.D./ Version 17. The PP has rounded down the value of total baseline emissions in order to be conservative. The baseline emissions for the project activity have been calculated to be 7,621tCO_2 per year.

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

Leakage (**LE_y**) – Leakage has not been considered for the project activity. According to paragraph 22 of AMS I.D Version 17, if the energy generating equipment is transferred from another activity or if the existing equipment is transferred to another activity, leakage is to be considered. The proposed project activity uses new energy generating equipment which has been verified from the purchase order[12]. Thus, not considering leakage for the project activity is appropriate.

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

Based on the values of baseline emissions, project emissions and leakage the annual emission reductions have been calculated as 7,621tCO_2/year.

Discussion of CARs/CLs

CAR #4 was raised requesting the PP to provide the emission reduction calculation sheet with source of each value used in the calculations. In response, the PP has submitted the emission reduction calculation sheet with all sources mentioned. This has been checked and is accepted. Thus, CAR #4 was closed out. Detailed discussions have been provided in annex 3 under CAR #4.

Opinion

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

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

4.9 Application of Monitoring Methodology and Monitoring Plan

The project activity applies the simplified baseline and monitoring methodology AMS I.D Version 17. The applicability conditions of the methodology have been discussed in section 4.5 above.

The PP has defined the monitoring parameters as per the requirements of paragraph 24 of the methodology AMS I.D Version 17 and taking into consideration the actual procedure followed on the site. In line with this, the PP has defined the monitoring parameters, in section B.7.1 of the PDD. They are as follows:

1. $EG_{BL,\ y}$ – (MWh) this refers to the net electricity supplied by the project activity to the grid. This value is calculated on a monthly basis based on other measured parameters.

2. $\sum_{0}^{n} EG_{n,y}$ – (MWh) this refers to the summation of the electricity generated at the individual controllers from all wind turbines of the PP, connected to a single feeder, at a particular site. This value is monitored through meters, continuously measured, and summarized monthly.

3. $\sum_{0}^{m} EG_{m,y}$ – (MWh) this refers to the summation of the electricity generated at the individual controllers from all wind turbines including the project activity connected to a particular feeder. This value is monitored through meters, continuously measured, and summarized monthly.

4. $EG_{JMR,\ export}$– (MWh) this refers to the total electricity exported by all WTGs connected to a single feeder and measured at the respective substation feeder meter. This parameter will be measured hourly.

5. $EG_{JMR,\ import}$ – (MWh) this refers to the total electricity imported by all WTGs connected to a single feeder and measured at the respective substation feeder meter. This parameter will be measured hourly.

6. $EG_{JMR,\ SNS,\ export}$ – (MWh) this refers Electricity supplied to the grid from the project activity. This value will be apportioned to the project activity based on the values of $\sum_{0}^{m} EG_{m,y}$ and $\sum_{0}^{n} EG_{n,y}$.

7. $EG_{JMR,\ SNS,\ import}$ – (MWh) this refers Electricity imported from the grid by the project activity. This value will be apportioned to the project activity based on the values of $\sum_{0}^{m} EG_{m,y}$ and $\sum_{0}^{n} EG_{n,y}$.

Thus the monitoring plan is in compliance with the requirements of the methodology.

In Maharashtra there are number of WTGs connected to a single feeder. Hence to calculate the import, export, and net electricity generated by the WTGs of the project activity alone, the state electricity utilities use an apportioning procedure which has been described in detail in section B.7.2 of the PDD. This was verified against the JMR and the monthly credit report and found to be appropriate.

In addition to the main meter installed at the sub-station, there is also a check meter which is used to verify the accuracy of the main meter. Both these meter are in the custody of the respective state utilities. The meters are calibrated by the state utilities: annually by MSEDCL. In addition to the periodic calibration, the reading of both the meter will be matched every month.

The project participant has mentioned that that all the monitored data would be archived electronically and on paper regularly throughout the crediting period. Also, data will be archived for a minimum of 2 years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later. This is stated in section B.7.1 of the PDD.

The assessment team physically assessed the metering and monitoring systems at the WTG site during on-site visit. The meters were checked at the WTG site as well as the sub station. The representatives of the O&M team of Enercon (India) Ltd. and the MSEDCL staff were interviewed to verify the correctness of the procedure mentioned in the PDD. The assessment team confirms that the description in the PDD correctly represents the metering system available at the project activity site and that the defined monitoring plan can be implemented in the context of the project activity.

The monitoring plan in section B.7.2 of the PDD clearly mentions the operating structure, apportioning procedure, testing and calibration procedure, QA/QC procedure, specifications of the metering equipment, procedure in case of data uncertainty, data reporting & archiving, staff training and the management structure. These details were cross checked against the details mentioned in the PPA

Enercon (India) Ltd., the O&M service provider who is also the supplier of the WTGs is an ISO 9001, 14001 and OHSAS 18001 certified organization with an experience in monitoring and managing the O&M of

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

Discussion of CARs/CLs

CL #5 was raised requesting the PP to address the following issues:

1. PP was requested to clarify the calculation procedure for the monitoring parameters for two different sites involved in the project activity. In response the PP has added the name of the both sites in the monitoring parameters and clearly mentioned the calculation procedure for the parameters. The monitoring procedures for the both site are same. This has been checked and is accepted.
2. PP was requested to mention the roles and responsibility for data monitoring and internal audit procedure for the monitored data and data review system in the PDD. In response the PP has provided information about roles & responsibilities for data monitoring, internal audit procedure and data review system in section B.7.2 of revised PDD version 02. This has been checked and is accepted.

Thus CL #5 was closed out. Detailed discussions have been provided in annex 3 under CL #5.

It was not clear why latest version 17 of AMS I D is not applied and also the latest version of the 'Tool to calculate the emission factor for an electricity system" is not referred? Thus CAR #7 was raised. In response the PP has updated the PDD applying latest version 17 of AMS I.D and also the emission factor calculation is revised as per the "Tool to calculate the emission factor for an electricity system" version 02.2.0.It is also confirmed that there is no impact on emission factor or emission reduction calculation if either version 2.1 or 02.2.0 used for emission factor calculation.Hence CAR #7 was closed satisfactorily.

Opinion

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

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

4.10 Environmental Impacts

The PP has not carried out an EIA for the proposed wind power project.
The schedule of the notification S.O. 1533[36] published by the Ministry of Environment and Forests (MoEF), Government of India gives a list of the project activities that require a prior environmental clearance. According to this schedule wind power projects do not require a prior environmental clearance and hence an EIA need not be carried out.

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

4.11 Local Stakeholder Comments

The local stakeholder consultation process has been described in detail, by the PP, in section E of the PDD.

The PP has identified all individuals as well as organizations that may be affected by the project as the stakeholders. Based on the observations of the validation team during the site visit and as per the definition

of 'stakeholder' in the Glossary of CDM terms version 5, the identification of stakeholders for consultation was found to be appropriate. Thus, the validation team is of the opinion that the relevant stakeholders have been consulted.

The PP has conducted separate stakeholder consultation meetings for the project activity at the site office of the WTG supplier Karpewadi village on where the WTGs are located. The date of the invitation, meeting; and mode of invitation have been summarized in the table below:

Date of meeting	Date of invitation	Mode of invitation
10/12/2008/26/	24/11/2008 /25/	Public Notice/25/

The PP has clearly detailed the stakeholder consultation process in the PDD.

After sharing information with the local stakeholders about the company, and the purpose of proposed activity, the stakeholders were briefed about non-conventional energy sources and their importance. The PP also informed the stakeholders about their intention of securing CDM benefits for the proposed project activity. The Minutes of the meeting/26/ of the stakeholder meeting have been submitted by the PP.

During the site visit the validation team interviewed some of the local villagers. Based on the replies of the villagers, the validation team was convinced that the process of stakeholder consultation was carried out as described in the PDD. The villagers also confirmed that they were invited for the meeting through public notice. This was found to be consistent with the invitation process mentioned in the PDD.

Overall, there was agreement among the stakeholders that the proposed project activity would lead to the overall development of the area, mainly by generating employment opportunities and improving the infrastructure leading to an improved life for the villagers. The local stakeholders interviewed during the site visit endorsed this view.

It is also confirmed that local stakeholders were invited by the PPs to comment on the proposed CDM project activity prior to the publication of the PDD on the UNFCCC website inline with paragraph 128 of VVM version 1.2.

Discussion of CARs/CLs

Opinion

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

5. Comments by Parties, Stakeholders and NGOs

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

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

The Project Design Document for this project was made available on the UNFCCC website http://cdm.unfccc.int/Projects/Validation/DB/M0HZWR1KX6JY9A72Q6IUSCLVY3SNFE/view.html and was open for comments from 10th July 2009 until 8th August 2009. Comments were invited through the UNFCCC CDM homepage.

5.2 Compilation of all Comments Received

No comments have been received.

5.3 Explanation of How Comments Have Been Taken into Account

Not applicable, no comments have been received.

6. List of Persons Interviewed

Date	Name	Position	Short Description of Subject Discussed
22/09/2009	Sushil Bohra	Assistant Manager Sun-N-Sand Hotel Pvt Ltd	CDM prior consideration Project design and implementation
22/09/2009	Bhumayya Pallikonda	Account Manager Sun-N-Sand Hotel Pvt Ltd	Local stakeholder Consultation
22/09/2009	Nashib Kafle	Assistant Manager – Sustainability & Climate Change PWC	Investment Analysis, Baseline selection, Applicability of methodology, Additionality and monitoring procedure
22/09/2009	Sharad Dubey	Assistant Manager Enercon(India) Ltd.	Monitoring procedure, monitoring parameters, operation maintenance, calibration and data recording.

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 version 01,dated 05/05/2009 (Published for ISHC)
/1.1/ PDD version 02 dated 24/03/2010
/1.2/ PDD version 03 dated 28/04/2011
/1.4/ PDD version 04 dated 11/07/2011
/1.5/ PDD version 05 dated 14/09/2011 (final version)
/2/ Financial Analysis and emission reduction calculation Excel spreadsheet
/3/ WACC calculation Excel spreadsheet
/4/ Host Country Approval (ref: No 4/16/2009-CCC dated 17/11/2009)
/4.1/ MoC dated 25/09/2009
/4.2/ Revised MoC dated 03/11/2011

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

PDD Version	Date of Revision	Main changes reason for Revision
Version 05	14/09/2011	Section B.3: Physical Delineation of project boundary is corrected Version of Methodology AMS I.D is updated Section B.5: i. Discussion over prevailing practice omitted ii. WACC for the project has been changed from 13.9% to 11.91% iii. The tariff beyond 13th year has been changed from 5.30 INR/Kwh to 3.50 INR/Kwh iv. O&M cost revised as 1.37% of the total project cost v. Results of sensitivity analysis updated vi. Value of corporate tax is changed from 33.66% to 33.99% Section B.7.1: Calculation procedure for the monitoring parameters is updated site wise Section B.7.2: Roles and responsibility for data monitoring is updated Section B.8: Section is updated as per guidelines for completing CDM-SSC-PDD, version 05

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):

/5/ Clean Development Mechanism Validation and Verification Manual Version 1.2
/6/ Approved methodology AMS I.D Version 17
/7/ Tool to calculate the emission factor for an electricity system version 02.2.0
/8/ Guidance on assessment of Investment Analysis (EB 62 Annex 5)
/9/ Non-binding best practice examples to demonstrate additionality for SSC project activities(EB 35 annex 34)
Proposal and Purchase Order
/10/ Indicative Proposal received from Enercon India Limited (EIL) dated 4th April, 2008

/11/ Proposal received from Enercon India Limited (EIL) dated 4th June, 2008
/12/ Purchase Order dated 05/08/2008

Commissioning Certificates

/13/ Commissioning Certificate for 5 WTGs dated 10/12/2008, Certificate No-10853
/14/ Commissioning Certificate for 1 WTGs dated 31/03/2009, Certificate No-02163

Power Purchase Agreement

/15/ Power Purchase Agreement for 4MW(5*0.8 MW) at Satara,dated 20/12/2008
/16/ Power Purchase Agreement for 0.8 MW(1*0.8 MW) at Satara,dated 20/04/2009

Board Resolution

/17/ Extract of Board Resolution (with CDM consideration) of the board meeting held on 28/04/2008,to call for proposal
/18/ Extract of Board Resolution (with CDM consideration) of the board meeting held on 20/06/2008

Prior CDM Consideration

/19/ Intimation to UNFCCC about CDM project activity, dated 15/01/2009
/20/ Intimation to MoEF about CDM project activity, dated 14/01/2009
/21/ Confirmation receipt from UNFCCC,dated 20/01/2009
/22/ Date of work order for CDM consultant, dated 20/06/2008
/23/ Date of Work order issued to DOE, dated 29/01/2009
/24/ Application for the Host Country Approval,08/07/2009

Local Stakeholder Consultation

/25/ Public Notice to invite local stakeholder dated 24/11/2008
/26/ Minutes Of Meeting(MoM),dated 10/12/2008

Plant Load Factor

/27/ PLF evidence as per EB 48 Annex 11 – PLF report issued by M/s Kentech Konsulteam Mumbai dated 10/06/2008

Other Documents

/28/ MERC order dated 24/11/2003
/29/ Auditor Certificate by J.G Verma & Co ,dated 20/06/2008(Ref : QQ/325)
/30/ O&M agreement dated 05/08/2008
/31/ CEA database Version 4 (Ministry of Power, Government of India) (ref: http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm)
/32/ Land Lease Deed, dated 05/09/2006
/33/ MEDA Clearance for commissioning of WTGs at Akole Distt.Ahmednagar,dated 30/03/2009(Ref: PGN-I/CC/Sun-N-Sand/0.80MW/08-09/1578)
/34/ Infrastructure Clearance for setting up of WTGs at Akole Distt.Ahmednagar,dated 25/03/2009(Ref: PGN-I/CC/Sun-N-Sand/0.80MW/08-09/1505)
/35/ Electrical Inspector approval for setting-up Transformer and commissioning of WTGs at Patan Distt.Satara,dated 08/12/2008(ref:STR/EI/721/2008-09)
/36/ MoEF notification for EIA dated 14th September 2006
/37/ Undertaking from PP for no substitution of project technology for the entire life of the project, dated 20/06/2008
/38/ Undertaking from PP dated 20/06/2008 for no ODA involvement in project

Authenticity of HCA

/39/ Email Communication with The National CDM Authority (Designated National Authority (DNA),dated 29/07/2011
/40/ Letter from WTG supplier mentioning the geographical co-ordinates of project WTGs

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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 **Generation of electricity from 4.8MW capacity wind mills by Sun-n-Sand Hotels Private Limited at Maharashtra**

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

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
1. Host Country Approval	Host Country Approval submitted	Host Country Approval /4/	Appropriate and accepted
2. Modalities of Communication for the project activity.	MoC provided by project participant	MoC /5/	Appropriate and accepted
3. Purchase orders	Purchase order for project activity has been checked	Purchase order /12/	Appropriate and accepted
4. Ownership documents or Licenses for each wind mill	Land lease deed, commissioning certificates, MADA clearance and government approval have been submitted by PP	Land lease deed/32/, commissioning certificates/13/ & /14/,MADA clearance/30/ and government approval/35/	Appropriate and accepted
5. Excel for calculation of emission reduction with sources of data	Emission reduction calculation sheet submitted by PP	Emission reduction calculation sheet /2/	Appropriate and accepted
6. Power Purchase Agreement between wind mill owner and electricity board	PPA for the project activity has been submitted by PP	PPA/15/ and /16/for project activity	Appropriate and accepted
7. Financial calculation excel sheet, IRR calculations and source of each assumptions used ,Suitability of Benchmark	Financial analysis sheets submitted by PP	Financial analysis excel spread sheet /2/	Appropriate and accepted

8. Proof for CDM consideration for wind mill	PP has provided the board resolution extract as proof for prior consideration of CDM	Board resolution[/17/, /18/],Intimation mail to UNFCCC[/19/] and MoEF[/20/]	Appropriate and accepted
9. Evidence is required to be submitted that the technology used would not be changed during the crediting period from each windmill owner.	Undertaking is provided by project participant	Undertaking for No technology change [/37/]	Appropriate and accepted
10. Evidence for no use of ODA	Undertaking for no use of ODA submitted	No ODA certificate[/38/]	Appropriate and accepted
11. Evidence for start date of the project activity.	Date on which purchase order was placed for the project activity has been considered as project start date	Purchase order [/12/]	Appropriate and accepted
12. Consents and approval from pollution control board, EIA requirement needs to be checked. No objection certificate, commissioning certificates	EIA is not required for the project activity. NOC/clearances and commission certificates have been submitted by the PP.	Environment Impact Assessment Notification S.O. 1533 (http://envfor.nic.in/legis/eia/so1533.pdf)[/36/] Commissioning certificates[/13/ & /14/]	Appropriate and accepted
13. Proof for media used to invite the local stakeholders and date of stakeholders meeting	Invitation letters and MoM provided by project participant	Invitation Public notice[/25/] and MoM[/26/]	Appropriate and accepted
14. MoM of local stakeholder consultation is required. Discussion with the local stakeholders is required during the site visit	Discussions with stakeholders were carried out during the site visit to confirm the local stakeholder consultation process. PP has submitted the MoM of the meeting.	MoM[/17/]	Appropriate and accepted

15. QA/QC procedures for data monitoring or ISO certificates for the company (if applicable) and personnel training programme, Operation and maintenance procedure and contract	QA/QC procedures for data monitoring were checked during the site visit	Checked during site visit	Appropriate and accepted
16. Debundling criteria need to be checked during site visit	The debundling criteria have been checked during the site visit	Checked during site visit	Appropriate and accepted
17. Location of all monitoring meters for each wind mill should be checked during site visit.	The locations of the monitoring meters have been checked during the site visit.	Checked during site visit	Appropriate and accepted

A.2 Annex 2: Validation Checklist

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

Requirement	Means of Validation Reference	Comments	Conclusion/CARs/CLs
1. All Parties involved have approved the project activity 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 1.1.1. The country is a Party to the Kyoto Protocol 1.1.2. Participation is Voluntary 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 1.1.4. It refers to the precise proposed CDM project activity title in the PDD being submitted for registration	Annex 3, Clean Development Mechanism, Validation and Verification Manual, Version 01.2 (from this point forwarded referenced as VVM) – 45/49a-d /54a-b/127 Paragraph 37 CDM Modalities and procedures	The project is based in India. India has ratified and is Party to the Kyoto Protocol since 26th August 2002. India is allowed to take part in the CDM Projects. The link for the same can be found at: http://maindb.unfccc.int/public/country.pl?country=IN. The Host Country Approval letter is yet to be submitted by the PP. CAR #1: Please Provide HCA letter.	CAR #1 Closed
1.2. If the project participant(s) listed in the PDD published at international stakeholder[1] consultation are not included in the PDD submitted with request for registration, a letter should be obtained from the withdrawn project participant(s) confirming its voluntary withdrawal from the proposed project activity.	EB 30 Para. 41. EB50 Annex 48 para. 8	Sun-N-Sand Hotels India Private Limited is sole Project Participant for the Project.	Y

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

Requirement	Means of Validation Reference	Comments	Conclusion/CARs/CLs
1.3. The letter/s of approval are unconditional with respect to 1.1.1 to 1.1.4 above	VVM Para. 49/ 53,54	Yes, HCA confirms the same.	Y
2. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for a minimum of 30 days, and the project design document and comments have been made publicly available	VVM Para. 128 Marrakech Accords, CDM Modalities, §40	. The initial project PDD has been uploaded for the global stakeholder's consultation. Link for the same can be found at: http://cdm.unfccc.int/Projects/Validation/DB/M0HZWR1KX6JY9A72Q6IUSCLVY3SNFE/view.html Period for comments: 30 days Start date: 10th of July 2009 Closing date: 8th of August 2009 No. of Comment received: Nil Please refer to section E for further application.	Y
3. The project design document is in accordance with the applicable CDM requirements for completing PDDs.	VVM Para. 57 Marrakech Accords, CDM Modalities, Appendix B, EB Decisions	The PDD is in accordance with Small Scale Project Design Document CDM-SSC-PDD, version -03.	Y
4. The project participants shall submit a completed modalities of communication (MoC) Form	F_CDM_MOC form available on UNFCCC website	The letter on the modalities of communication (MoC) is submitted by the PP.	Y

Table 2 PDD

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
A. General Description of Project Activity				
A.1. Project Title				
A.1.1. Does the used project title clearly enable the reader to identify the unique CDM activity?	VVM Para.56 Guidelines for completing a CDM-PDD (PDD) section A.1	DR/ Project Web page	Yes, The Project tile **"Generation of electricity from 4.8MW capacity wind mills by Sun-N-Sand Hotels Private Limited at Maharashtra"** Clearly enables the reader to identify the unique CDM Project. There other Wind mill projects by Sun-N-Sand Hotels also, but the location and capacity mentioned in the title of this project clearly distinguish this project from the other projects.	Y
A.1.2. Is there an indication of a revision number and the date of the revision?	VVM Para.56 PDD section A.1	DR	PDD has mentioned version as 01 dated 05/05/2009.	Y
A.2. Description of the Project Activity				
A.2.1. Does the description of the proposed CDM project activity as contained in the PDD sufficiently cover all relevant elements accurately?	VVM Para.59 PDD section A.2 see also A.4, A.4.3 and B.3	DR	Yes, the section A.2 of the PDD sufficiently describes the general information about the proposed project activity and its contribution to the Sustainable Development.	Y
A.2.2. Is all information provided consistent and in compliance with the actual situation or planning?	VVM Para.64 PDD section A.2 see also A.4, A.4.2 and B.3	DR	Yes, Description in the Section A.2 of PDD provides clear understanding about the proposed CDM activity	Y
A.2.3. Is all information provided consistent with details provided in further chapters of the	VVM Para.64 PDD section A.2	DR/SV	The compliance and consistency of the information with the actual situation can only be checked during site visit The same has been checked during site visit	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
PDD?				
A.3. Project Participants				
A.3.1. Is the table required for the indication of project participants correctly applied?	VVM Para. 51 PDD section A.3	DR	The general information provided in the section A.2 is consistent with further chapters of the PDD.	Y
A.3.2. Is all information provided in consistency with details provided by further chapters of the PDD (in particular annex 1)?	VVM Para. 51 PDD section A.3	DR	The information about project participants is consistence through out the PDD.	Y
A.4. Technical Description of the Project Activity				
A.4.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)? Are the latitude and longitude of the site indicated (decimal points)	VVM Para.64 PDD section A.4	DR	The location of the project is clearly indentified with the unique latitude and longitude of the project site.	Y
A.4.2. Does the proposed CDM project activity involve the alteration of existing installations or process?	VVM Para.64 PDD section A.4	DR/SV	No. the proposed project activity is installation of wind mills at new project site. It does not involve any alteration in existing project or process.	Y
A.4.3. Do the project participants possess ownership or licenses	VVM Para.64 PDD section A.4	DR	The ownership and other licenses documents are to be provided by the PP. CL #2:Please provide	

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
which will allow the implementation of the project at that site / those sites?			• Ownership documents • Required license documents • Government permission documents • State Electricity / Pollution Board permissions etc. Technical specifications and purchase orders of the all the equipments used in the project activity. PP has provided above documents found appropriate.CL #2 is closed.	
A.4.4. Is the category(ies) of the project activity correctly identified?	VVM Para.64 PDD section A.4	DR	The proposed activity is grid electricity generation by wind mills. The PDD correctly identifies the project as Type-I: Renewable Energy Generation Category I.D: "Grid Connected Electricity Generation"	Y
A.4.5. Is all information provided in compliance with actual situation or planning as available by the project participants?	VVM Para.64 PDD section A.4 EB 52 Para. 13	SV	This will be checked during the site visit. This is checked during site visit. No non-compliance observed.	Y
A.4.6. Is the table required for the indication of projected emission reductions correctly applied?	VVM Para.64 PDD section A.4	DR	Yes, the format of the table required for indication of projected emission reductions is correctly applied.	Y
A.5. Debundling				
A.5.1. Is the small-scale project activity a debundled component of a large scale project activity	VVM Para. 136c EB54 para 35 & Annex 13	DR/SV	As per the PDD, project activity is not debundled component of the large scale project activity. Same can be checked during site visit.	Y Confirmed during site visit
A.5.2. If the project is a debundled component of a larger project, does	VVM Para. 134c	DR/SV	The project is not the de-bundled component of a large scale project activity.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
the larger project fall within the limits for small-scale CDM project activities				
A.6. Public Funding				
A.6.1. Does the information on public funding provided conform to the actual situation or planning as presented by the project participants?	PDD section A.4.4	DR	As per the PDD, project does not use any public funding. CL #2: Please provide evidences for the public funding.	CL #2 closed
A.6.2. Is all information provided consistent with details provided by further chapters of the PDD (in particular annex 2)?	PDD section A.4.4	DR	As per the PDD, project does not use any public funding. This information is consistent through out the PDD.	Y
A.6.3. In case of public funding from Annex I Parties is it confirmed that such funding does not result in a diversion of official development assistance	PDD section A.4.4	DR	Project did not use public funding. Not Applicable.	Y
B. Baseline and Monitoring Methodology				
B.1. Choice and Applicability				
B.1.1. Is the baseline methodology previously approved by the CDM Methodology Panel?	VVM Para.68 PDD section B.1	DR/ UNFCCC Websi	Yes, the Project has used the previously approved Small Scale CDM baseline methodology AMS-!.D (Version 13, EB 36) “Grid connected renewable electricity generation”. Due expire of earlier versions of meth PP has used latest Version 17 of AMS I.D	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
		te		
B.1.2. Has the methodology (incl. the tools) been altered from the original version as referenced in the PDD?	VVM Para.69 PDD section B (B.1-B.2)	DR	Yes, the approved baseline methodology and the tools are correctly applied in the PDD.	Y
B.1.3. Does the project activity qualify as small scale project?	VVM Para. 134a	DR	Yes, the project activity is generation of 4.8 MW of electricity by the renewable wind energy. This is well below set limit of 15 MW for the Small Scale Project activity. The project qualifies for the small scale project activity.	Y
B.1.4. Is the category(ies) of the project activity correctly identified in accordance with Appendix B to the simplified modalities and procedures for small-scale CDM project activities?		DR	Yes, the project activity has correctly identified the category in accordance with Appendix B to the simplified modalities and procedures for small-scale CDM project activities.	Y
B.1.5. Is the selected simplified methodology applicable to the project activity in the PDD?	VVM Para.75/66a/68/73 PDD section B (B.1-B.2)	DR	Yes, the selected simplified methodology is applicable to the project activity in the PDD.	Y
B.1.6. Does the project activity conform to one of the approved small-scale categories?	VVM Para. 136b EB55 Annex 35	DR	Yes, the project activity conforms to one of the approved small-scale categories.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.1.7. Is the project activity a bundle of several small scale activities and if so does it contain any sub-bundles?		DR	The project is not bundled activity.	Y
B.1.8. If the project activity is a bundle of several small scale activities, does the sum of the total bundle (including any subbundles) fall within the limits for small scale projects		DR	The project is not bundled activity.	Y
B.1.9. If the project activity is a bundle of several small scale activities, has the form with information related to the bundle been submitted and is it correctly used		DR	The project is not bundled activity.	Y
B.1.10. Is the discussion in the PDD in conformance with all applicability criteria of the applied methodology?	VVM Para.75/66b/68 PDD section B (B.1-B.2)	DR	Yes, the discussion in the PDD is in conformance with the all applicable criteria of applied methodology.	Y
B.2. Project Boundary				
B.2.1. Are all emission sources and gases related to the baseline	VVM Para.79/77 /67a	DR/SV	The sources and GHGs are selected as per the approved methodology. It is correct.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
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.	PDD section B.3			
B.2.2. In case of grid connected electricity projects: Is the relevant grid correctly identified in accordance with the tool to calculate emission factor of electricity system (wherever applicable) and the underlying methodology?	VVM Para.79 PDD section B.3	DR	Yes, regional Grid NEWNE is included in the project boundary. As the project location is in state of Maharashtra, the Grid is correctly selected.	Y
B.2.3. Does the project boundary include the physical delineation of	VVM Para.78/79 PDD section B.3	DR	A physical delineation of project boundary is not provided in the PDD. CL #3 raised.	CL #3 Closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
the proposed CDM project activity?	also see section A.4.2			
B.2.4. Are the project's geographical boundaries and the project's system boundaries (components and facilities used to mitigate GHGs) clearly defined?	VVM Para.76/79 PDD section B.3 also see section A.4.2	DR	Yes, the project's geographical boundaries and the project's system boundaries are clearly defined.	Y
B.3. Identification of the Baseline Scenario				
B.3.1. Does the PDD discuss the identification of the most likely baseline scenario? Does the PDD follow the steps to determine the baseline scenario required by the methodology and is the application of the methodology and the discussion and determination of the chosen baseline transparent?	VVM Para.67b.80/82/86 PDD Section B.4/B.5	DR	Yes, the PDD discuss the identification of the most likely baseline scenario. PDD has followed the guidelines and steps mentioned in the approved methodology and the baseline is correctly identified.	Y
B.3.2. Are all tools/procedures in the methodology correctly applied to identify the most reasonable baseline scenario? This includes all potential realistic	VVM Para.81/82/86a-d/83/84 PDD Section B.4/B.5	DR	Yes, the procedures in methodology are correctly applied to select the baseline.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
and credible baseline scenarios in the discussion taking into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?				
B.3.3. Is the choice of the baseline compatible with the available data?	VVM Para.86b-c/95 PDD Section B.4/B.5	DR	Yes, the choice of baseline is compatible with the available data.	Y
B.3.4. Is conservativeness addressed in the way of identifying the baseline?	VVM Para.90 PDD Section B.4/B.5	DR	The baseline is selected as per the approved methodology guidelines. Conservativeness is addressed.	Y
B.3.5. Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	VVM Para.90/91 PDD Section B.4/B.5	DR	Yes, the selected baseline represents the most likely scenario.	Y
B.3.6. Is there a verifiable description of the baseline scenario? Does this include a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed CDM project activity?	VVM Para.86e/85 PDD Section B.4/B.5	DR	The project activity is about grid connected electricity generation by wind mills. Grid generation, which is majorly fossil fuel based thermal power plants, is considered as baseline scenario. The baseline scenario is explained in the PDD and is verifiable.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.4. Additionality				
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 Para 137 EB 54 report, annex 15 VVM Para.67d/95 PDD Section B.1/B.4/B.5	DR	The project is a small scale CDM project. PP has used investment barrier analysis and barriers due to prevailing practice analysis as the steps to demonstrate additionality for the proposed CDM project activity. PP is requested to demonstrate provide substantial proof for the barrier faced in implementation of proposed CDM project activity due to prevailing practice. CAR #4 raised	CAR #4 closed
B.4.2. In case of using the additionality tool: Is the 'Additionality Tool' used in the PDD latest version? If an earlier version has been used, do the changes impact the discussion in the PDD? Are all steps followed in a transparent manner?	PDD Section B.1/B.4/B.5	DR	Proposed project is a small scale project and the steps to demonstrate additionality is used correctly.	Y
B.4.3. Has all information been backed up with references, sources and certification? Is the data presented credible and reliable with complete transparency	VVM Para.93/91 PDD Section B	DR	• PP is yet to submit all the relevant documents, excel sheets, and references used for demonstration of additionality. • Please provide financial calculation sheet for the project. • Please provide proof for tariff structure as claimed in the PDD. • PDD in its investment barrier analysis in additionality check section has taken debt equity ration as 70:30. as has mentioned that "This is mostly attributable	CAR #4 closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
to all available data and documentation?			fact that several regulations and orders refer this as the normative debt equity ratio for wind power projects." Please provide substantial proof for the same. • PP is requested to further justify that how much it is relevant to consider Beta values of the convention power generation companies in the Beta value calculation.	
B.4.4. Is the discussion on additionality and the evidence provided consistent with the starting date of the project? If the project activity start date is prior to the validation is it discussed how the CDM was taken into account in the decision to go ahead with the project activity	VVM Para.102b PDD Section B.5	DR	PP is requested to submit chronology of the Proposed project activity implementation with substantial proofs.	CAR #4 closed
B.4.5. If an investment analysis has been used, has it been demonstrated that the proposed project activity is economically or financially less attractive than at least one other alternative without the revenue from the sale of CERs?	VVM Para. 106, 107, 108, 109 112a-c PDD Section B.5	DR	Project activity using methodology AMS I.D which does not involve alternative selection.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.4.6. If a benchmark is used, is it ensured that it is selected in accordance with the requirements of the tool /methodology and it represents standard returns in the market (not linked to the subjective profitability expectation or risk profile of a particular project developer).	VVM Para. 110 PDD Section B.5	SV/I/DR	Pending as the relevant documents are not received. Same will be discussed during site visit. CAR #4 raised.	Y CAR #4 Closed
B.4.7. If a barrier analysis has been used, has it been shown that the proposed project activity faces barriers that prevent the implementation of this type of proposed project activity but would not have prevented the implementation of at least one of the alternatives?	VVM Para. 114 116a-b/117 PDD Section B.5 EB50, Annex 13	SV/I/DR	Pending due to CAR # 4.	CAR # 4 is closed
B.4.8. Is the discussion on additionality consistent with the identification of all plausible and credible baseline scenarios?	VVM Para. 105 PDD Section B.5	SV/I/DR	Pending due to CAR # 4.	CAR # 4 is closed
B.4.9. If a barrier analysis has been used have the	VVM Para 113 EB	SV/I/D	Not applicable	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
'guidelines for objective demonstration and assessment of barriers' been followed? Have all applicable steps been considered and substantiated with objective evidence?	50 Annex 13	R		
B.4.10. 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 PDD Section A.4.2/B.5	SV/I/DR	Yes, identified baseline scenario is in compliance of the national and sectoral policies and regulations.	Y
B.4.11. Has it been shown that the project is not common practice?	VVM Para. 119a/b PDD Section B.5	SV/I/DR	The project is small scale project. As per the tool only investment analysis to demonstrate the additionality has been used. Common practice analysis is not used.	Y
B.4.12. What are they key distinctions between the project activity and any similar projects that are widely used as common practice?	VVM Para. 118, 119c/d PDD Section B.5	SV/I/DR	Project activity is a clean wind power generation activity. Common practice in the country is fossil fuel based power generation.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.5. Application of the Simplified Methodology				
B.5.1. Has the simplified methodology been applied correctly for determining **baseline emissions**?	VVM Para. 91d PDD Section B (B.6.1 -B.71)	DR	Yes, the methodology is used correctly to determine baseline emissions. However pending due to submission of emission reduction calculation sheet. Please provide emission reduction calculation sheet.	CL #5 closed
B.5.2. Has the simplified methodology been applied correctly for determining **project emissions**?	VVM Para. 90/91d PDD Section B (B.6.2-B.71)	DR	Yes, the approved methodology is used correctly to determine project emissions. However pending due to submission of emission reduction calculation sheet. Pending closure CAR #5	CL #5 closed
B.5.3. Has the simplified methodology been applied correctly for determining **leakage**?	VVM Para. 91d PDD Section B (B.6.2 -B.71)	DR	There are not any applicable leakages for the proposed project activity. Approved methodology is applied correctly. However pending till the site visit is conducted.	Y
B.5.4. Where applicable, has the simplified methodology been applied correctly for the **direct calculation of emission reductions?**	VVM Para 88/91d PDD Section B (B.6.2 -B.71)	DR	Yes, Approved methodology is applied correctly. There are no direct emissions. However pending due to submission of emission reduction calculation sheet.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.5.5. Where there is an option between different equations or parameters, has the methodological choices for the project been explained, have they been properly justified and are they correct?	VVM Para.89/90/91 PDD Section B (B.6.2 -B.71)	DR	Yes, Methodological choices are correctly applied and justifiable. However pending due to submission of emission reduction calculation sheet.	Y
B.5.6. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	PDD Sections B.5-C	DR	Yes, uncertainties are properly addressed in documentation.	Y
B.6. Ex-ante Data and Parameters Used				
B.6.1. Are the data provided in compliance with the methodology?	VVM Para. 91/67c PDD Section B.6.3B.6.4	DR	Yes, Ex-ante data provided are in compliance with the approved methodology.	Y
B.6.2. Is all the data derived from official data sources or replicable records and have these been correctly quoted?	VVM Para. 91a/b PDD Section B.6.3/B.6.4	DR	Yes, data are taken from the approved data source. Data is accessible and verifiable.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.6.3. Is the vintage of the baseline data correct?	PDD Section B.6.3/B.6.4	DR	Yes, vintage is correct.	Y
B.6.4. Is all the data appropriate and correctly applied to the CDM project activity?	VVM Para. 91c PDD Section B.6.3/B.6.4	DR	Yes, data are appropriate and correctly applied.	Y
B.6.5. Are data and parameters that are not being monitored and remained fixed throughout the crediting period appropriately assessed, correct, and will they result in conservative estimates?	VVM Para. 90 PDD Section B.6.3/B.6.4	DR	Yes, Ex-ante data provided and not being monitored and are appropriate and correct.	Y
B.6.6. If the project activity uses the PLF does it follow the guidance provided in EB48 annex 11?	EB48 Annex 11.	DR	Please provide substantial evidences for the plant load factor as per the guidance provided in EB 48, annex 11. CAR # 5	Y CL # 5 closed
B.7. Calculation of Emissions Reductions				
B.7.1. Has the simplified methodology been applied correctly for determining **emission reductions**?	VVM Para. 91d PDD Section A.4.3/B.6	DR	Yes, approved methodology is correctly applied.	Y
B.7.2. Are the emission reduction calculations documented in a complete and	VVM Para. 91e PDD Section B.6	DR	Emission reductions are documented as per the correct procedure. However pending as the emission reduction calculation sheet is not received.	Y CL # 5 closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
transparent manner?				
B.7.3. Is the projection based on same procedures as used for later monitoring or acceptable alternative models?	PDD Section B.6	DR	Yes, project is based on same procedures.	Y
B.7.4. Is the calculation of the emission reduction correct?	VVM Para. 91e PDD Section B.6	DR	Pending due to CAR # 05	Y CL # 5 closed
B.8. Emission Reductions				
B.8.1. Is the form/table required for the indication of projected emission reductions correctly applied?	PDD Section A.4.3/ Section B.6	DR	Yes, table is correctly applied.	Y
B.8.2. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	PDD Section A.4.3/ Section B.6	DR	Yes, the project is in line.	Y
B.9. Monitoring Methodology				
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	VVM Para. 67e PDD Section B.7-B.8 see also Annex 4	DR	Yes, the Methodology provides consistent approach. All the data those available at validation are consistent with approved methodology. Data are interpreted and applied correctly.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
the PDD? Are all parameters and data that are available at validation consistent with the simplified methodology. Has this data been interpreted and applied correctly?				
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	Yes, the monitoring methodology applies consistent approach for both project and baseline emissions. PP has contracted technology supplier for the next ten years for Operation and Maintenance, of the wind mills.	Y
B.10. Data and Parameters Monitored				
B.10.1. Does the monitoring plan in the PDD comply with the simplified methodology? Provide for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period?	VVM Para. 91a/91d/121/79 PDD Section B.7-B.7.2	DR	Yes, 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.	Y
B.10.2. Are the choices of project GHG indicators reasonable and in	PDD Section B.7-B.7.2/B.6.2	DR	Yes, the GHG indicators are in compliance of the methodology.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
conformance with the requirements set by the simplified methodology applied?				
B.10.3. Will it be possible to determine the specified project GHG indicators?	PDD Section B.6.2-B.8	DR	Yes, it is possible to determine the specified project GHG indicators.	Y
B.10.4. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	PDD Section B.6.2-B.7.1 EB 55, annex 35	DR	Yes, the information given for each monitoring variable by the presented table sufficient is to ensure the verification of a proper implementation of the monitoring plan	Y
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	Please provide evidences to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records.	CAR #6 closed
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	Yes, the monitoring approach is inline with current good practice.	Y
B.10.7. Are all formulae used	PDD Section	DR	Yes, all formulae used to determine project emission are clearly indicated and in	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
to determine project emission clearly indicated and in compliance with the monitoring methodology.	B.6.2-B.7.1		compliance with the monitoring methodology.	
B.11. Quality Control (QC) and Quality Assurance (QA) Procedures				
B.11.1. Is the selection of data undergoing quality control and quality assurance procedures complete?	VVM Para. 121 Refer to all data within the PDD Inc. B.6.2-B.7.1	DR	Please provide details of the applied QA/QC procedures for the monitored data.	CAR #6 closed
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	Yes, the belonging determination of uncertainty levels is done correctly for each ID in a correct and reliable manner.	Y
B.11.3. Are quality control procedures and quality assurance procedures sufficiently described to ensure the delivery of high quality data?	VVM Para 121	SV	Pending till the site visit and due to CAR # 6.	CAR # 6 Closed
B.11.4. Is it ensured that data will be bound to national or internal reference standards?	VVM Para. 86d	DR	Yes, it is ensured that the data will ne bound to national or internal reference standards.	Y
B.11.5. Is it ensured that data provisions will be free of potential conflicts of interests resulting in a tendency of	VVM Para. 19	DR	Please provide evidences that the data provisions will be free of potential conflicts of interests resulting in tendency of overestimating emission reduction.	Y, CAR # 6 Closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
overestimating emission reductions?				
B.12. Operational and Management Structure				
B.12.1. Is the authority and responsibility of project management clearly described?	PDD Section B.8/Annex 1	DR/I	PP has contracted project supplier Enercon India Limited for the Operation and Maintenance of the project activity. Same will be responsible for the project management.	Y
B.12.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD Section B.8/Annex 1	I/DR	PP has contracted project supplier Enercon India Limited for the Operation and Maintenance of the project activity. Same will be responsible for the registration. Monitoring, measurement and reporting.	Y
B.12.3. Are procedures identified for training of monitoring personnel?	PDD Section B.8/Annex 1	SV/I	No, procedures are not identified for the training of the monitoring personnel. PP has contracted project supplier Enercon India Limited for the Operation and Maintenance of the project activity. The monitoring will be done by the qualified professional staff of EIL.	Y
B.13. Monitoring Plan (Annex 4)				
B.13.1. Is the monitoring plan developed in a project specific manner clearly addressing the unique features of the CDM activity?	VVM Para. 122a	DR	. Yes, monitoring plan is sufficient.	Y
B.13.2. Does the monitoring plan completely describe all measures to be implemented for monitoring all parameter required, including measures to	VVM Para. 122b EB55 Annex 35	DR	Yes, monitoring plan describes the measures to be implemented. however pending due to CAR # 6	CAR # 6 Closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
be implemented for ensuring data quality?				
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	Yes, the monitoring plan provides information on monitoring equipment and respective positioning in order to safeguard a proper installation.	Y
B.13.4. Are procedures identified for calibration of monitoring equipment?	VVM Para. 123a-b EB55 Annex 35	DR/SV	Yes, the procedures are identified for the calibration of the equipment.	Y
B.13.5. Are procedures identified for maintenance of monitoring equipment and installations?	VVM Para. 123a-b	I/DR	Yes, Procedures are identified for the maintenance of the monitoring equipments,	Y
B.13.6. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	VVM Para. 123a-b EB55 Annex 35	I/SV/DR	Yes, procedures are identified for the day to day records handling.	Y
B.13.7. Are procedures identified for dealing with possible monitoring data adjustments and missing data allowing redundant	VVM Para. 124a-c	DR	No. procedures are not identified. Please provide details of dealing with possible monitoring data adjustments and missing data allowing redundant reconstruction of data in case of monitoring problems.	CAR #6 closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
reconstruction of data in case of monitoring problems?				
B.13.8. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	VVM Para.124a-c	I/DR	No. procedures are not identified. Please provide procedures for internal audits of GHG project compliance with the operational requirements, wherever applicable.	CAR #6 closed
B.13.9. Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	VVM Para. 124a-c	DR/SV /I	Yes, Project data will be verified by State utility and the EIL both.	Y
B.13.10. Describe the ability of the project participants to implement the monitoring plan.	VVM Para. 124c	DR	Pending due to all CARs and site visit.	Y All CARs/CLs Closed
B.14. Baseline Details				
B.14.1. Is there any indication of a date when determining the baseline?	PDD Section B.8/Annex 3	DR	No, date for determination of baseline is not indicated. Please provide date for baseline completion.	Y CL #3 closed
B.14.2. Is this consistent with the time line of the PDD history?	Also see revision history of the PDD	DR	Pending due to section B.14.1	Y Closed
B.14.3. Is all data required provided in a complete manner by annex 3 of	PDD Annex 3	DR	Yes, data required are provided in the complete manner in annex 3 of PDD.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
the PDD?				
C. **Duration of the Project / Crediting Period**				
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	VVM Para. 102a-c PDD Section C.1.1/C.1.2	DR	Yes, project starting date and operation lifetime are clearly defined and is found reasonable.	Y
C.1.2. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?	VVM Para. 102a PDD Section C.2/C.2.1/C.2.2	DR	Assumed crediting time is clearly defined and reasonable.	Y
C.1.3. Does the project's operational lifetime exceed the crediting period	VVM Para. 102a PDD Section C.1.2/C.2.1.1/C.2.1.2	DR	Yes, project operational life time exceeds crediting period.	Y
C.1.4. Does the start date indicate whether this is a new project activity or a pre-existing project activity?	VVM Para. 102a/ 98 PDD Section C.1.1/C.2.1.1	DR	The project is a new project activity. Project start date is 5th August 2008.	Y
D. Environmental Impacts				
D.1.1. Does the project comply with environmental legislation in the host	VVM Para. 131/134d PDD section D	DR	Yes, project complies with the environment legislation in India.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
country?				
D.1.2. Has an analysis of the environmental impacts of the project activity been sufficiently described?	VVM Para. 131 PDD section D	DR	Yes, analysis is sufficiently described.	Y
D.1.3. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	VVM Para. 131 PDD section D	DR	As per the PDD, no EIA is required. Please provide proof for the same.	CL #2 Closed
D.1.4. Will the project create any adverse environmental effects?	VVM Para. 131 PDD section D	DR	No, project will not create any adverse environmental effects.	Y
D.1.5. Are trans-boundary environmental impacts considered in the analysis?	VVM Para. 131 PDD section D	DR/SV	Project is clean energy wind project. Not applicable	Y
D.1.6. Have identified environmental impacts been addressed in the project design?	VVM Para. 131 PDD section D	DR	No adverse environmental impacts are identified.	Y
E. Stakeholder Comments				
E.1.1. Have relevant stakeholders been consulted?	VVM Para. 128a PDD Section E.1	DR/SV /I	Yes, As per the PDD, local stakeholders meeting was held on 10/12/2008 at Enercon India Limited Satara office in Karpewadi village. Please provided evidences for the stakeholders consultation. The PDD was uploaded at UNFCCC site for one month for Global stakeholders' consultation. Please review table 1 for details.	Y
E.1.2. Have appropriate	VVM Para.	DR	Please provide details and evidences for the media used for the stakeholder's	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
media been used to invite comments by local stakeholders?	128a PDD Section E.1		invitation.	
E.1.3. Is the undertaken stakeholder process described in a complete and transparent manner?	VVM Para. 128b PDD Section E.1	SV/DR/I	Yes, the stake holders' process is described in a complete and transparent manner in the PDD.	Y
E.1.4. Is a summary of the stakeholder comments received provided?	VVM Para. 128b PDD Section E.2	DR	Yes, summery of the comments received is provided.	Y
E.1.5. Has due account been taken of any stakeholder comments received?	VVM Para. 128b PDD Section E.3	DR/I	As per PDD no negative comments received. The same has been verified during site visit through interview of stakeholders.	Y

A.3 Annex 3: Overview of Findings

Findings Overview Summary

	CARs	CLs	FARs
Total Number raised	7	2	0

Date:	22/09/2009		Raised by:	Assessment team	
Type:	CAR	Number:	01	Reference:	Table 1, Section 1,2

Lead Assessor Comment:

1. Please provide Host Country Approval for the Project.
2. Please provide Modalities of Communication.

Project Participant Response:	**Date:** 26/03/2010

1. The Host Country Approval for the project was received on 17 November 2009. The Host Country Approval has been provided as a separate attachment along with this document..
2. The Modalities of Communication have been provided as a separate attachment along with this document.

Documentation Provided by Project Participant:

1. Attachment 1 - MOEF_Approval
2. Attachment 2 - MOC_4.8MW

Information Verified by Lead Assessor:

1. Host Country Approval Letter from Indian DNA, MoEF
2. Modalities of Communication Letter

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 16/04/2010

PP has submitted the letter no 4/16/2009-CCC dated 17/11/2009 from the Indian DNA, Ministry of Forests and Environment, GoI for Host Country Approval. The title of the project in the letter is checked with the submitted PDD and found appropriate. The letter has also mentioned that India is a party to the Kyoto protocol, the participation in the CDM project is voluntary and the project activity contributes to the Sustainable Development of the Host Country. Same is acceptable.
PP has submitted the Modalities of Communication Letter for the Project Activity. Accepted.
CAR # 01 Closed.

CAR #1 re-opened	15/10/2011

Lead Assessor Comment:

Name of entity in section 2 & annex 1 and name of party in annex 1 is missing of MoC

Project Participant Response:	Date:03/11/2011

Missing information's are included in revised MoC submitted

Documentation Provided by Project Participant:

MoC dated 03/11/2011

Information Verified by Lead Assessor:

Revised MoC is checked

Reasoning for not Acceptance or Acceptance and Close Out:	Date: 09/11/2011

PP has added all the missing information's in revised MoC, found to be satisfactory.
Thus CAR #1 is closed.

Acceptance and Close out by Lead Assessor:	**Date:** 09/11/2010

Date:	22/09/2009	Raised by:	Assessment team

Type:	CL	Number:	0 2	Reference:	Table 2, B.2.3, B14.1

Lead Assessor Comment:

1) Physical Delineation of project boundary is not provided in the PDD. Please provide pictorial representation of the project boundary.
2) PP needs to follow the CDM-SSC-PDD guidelines for the completion of the PDD. The section B.8 is not as per guidelines for completing CDM-SSC-PDD, version 05.

Project Participant Response:	**Date:** 26/03/2010

1) The pictorial representation for the project boundary has been presented in the revised PDD (version 02).
2) The section B.8 of the PDD has been revised as per the CDM-SSC-PDD guidelines. Please refer revised PDD (version 02).

Documentation Provided by Project Participant:

Revised PDD (version 02)

Information Verified by Lead Assessor:

Revised PDD, Version 02 dated 24.03.2010

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 16/04/2010

1. PP has provided pictorial representation of the project boundary for the Satara site and the Ahmednagar site. Same is found appropriate and accepted.
2. PP needs to provide information in the section B.8 as per the "CDM-SSC-PDD guidelines for the completion of the PDD, version 05, dated 14/09/2007. Please see the guidance provided: - "Please provide contact information of the persons(s)/entity (ies) responsible for the application of the baseline and monitoring methodology to the project activity and indicate if the person/entity is also a project participant listed in Annex 1."

CL # 02 Open.

Project Participant Response	**Date:** 12/05/2010

The section B.8 of the PDD has been revised as per the CDM-SSC-PDD guidelines. Please refer the revised PDD (version 03).

Documents Provided by Project Participant:

Revised PDD

Information Verified by Lead Assessor:

Revised PDD

Reasoning for Not Acceptance or Acceptance and close Out:	**Date:** 07/07/2010

Details of the entity responsible for the application of baseline & monitoring methodology have been provided in the section B.8 of the revised PDD. Accepted.
CL#02 Closed.

Acceptance and Close out by Lead Assessor:	**Date: 07/07/2010**

Date:	22/09/2009		Raised by:	Assessment team	
Type:	CAR	Number:	03	Reference:	B.4

Lead Assessor Comment:

1) PP is requested to demonstrate substantial proof for the barrier faced in implementation of proposed CDM project activity due to prevailing practice. Please clarify how it is project specific.
2) Please provide all the data with sources references as used financial calculation excel spreadsheet for the project activity. Same needs to be incorporated in the PDD.
3) The commissioning date for 4 MW is 10/12/2008 and for remaining 0.8 MW is 30th March 2009. Please explain why PP has not calculated working capital for year 08-09accordingly? PP also needs

to revise the working capital loan estimation.

4) The commissioning date for 4 MW is 10/12/2008 and for remaining 0.8 MW is 30th March 2009. For the financial year Apr 08 to Mar 09, O & M Cost, Insurance needs to be revised as accordingly.

5) Investment barrier analysis has mentioned debt equity ratio as 70:30. It has been mentioned that "This is mostly attributable fact that several regulations and orders refer this as the normative debt equity ratio for wind power projects." Please provide substantial proof for the same.

6) Please explain why PP has not taken un-levered Beta value? BSE Sensex used is not a fully diversified portfolio and doesn't provide a perfect market picture. Please explain why PP has not used an index which has more number of stocks and which can represent a complete market.

7) Revise tax calculation incorporating benefits under section 80IA and carry forward of business losses.

8) Please provide the evidence for the 100% equity considered for the project activity in the financial calculations.

9) Please provide the excel spreadsheet for the benchmark calculations along with all supporting data.

10) PP needs to consider sensitivity analysis for the critical parameters as per para 17 of Annex 58 EB 51.

Project Participant Response:	**Date:** 26/03/2010

1) In absence of appropriate evidences to justify common practice analysis it has been omitted from discussion in the revised PDD.

2) An investment analysis of the project activity was conducted considering project IRR (Post-tax) as the most suitable financial indicator. The Weighted Average Cost of Capital (WACC) has been ascertained in order to establish benchmark of the project activity.

   The spreadsheet reflecting the detail computation of IRR and benchmark along with the sources of the input parameters have been provided to SGS via e-mail dated 24th September, 2009. However the IRR calculation worksheet has been further revised in line with the comments received from DOE. The revised IRR and the WACC model are enclosed as Annexure - 1a & Annexure - 1b to this document.

3) The project IRR calculation has been revised. In this regard please refer to the proposal received from Enercon India Limited (EIL) on 4th June 2008. The proposal specifies that WTGs at the Bhambarwadi (five WTGs) will be commissioned by end of December, 2008 and at Panchpatta (One WTG) by end of March, 2009. As a conservative approach the project commissioning date has been assumed as 31st December, 2008 i.e. corresponding to the proposed commissioning of WTGs at Bhambarwadi . The working capitals on account of receivables and O&M expenses have also been revised accordingly in the IRR computation.

4) The project IRR calculation with respect to O&M cost and insurance cost has been revised. In this regard please refer to the proposal received from Enercon India Limited (EIL) on 4th June 2008. The proposal specifies that WTGs at the Bhambarwadi (five WTGs) will be commissioned by end of December, 2008 and at Panchpatta (One WTG) by end of March, 2009. As a conservative approach the project commissioning date has been assumed as 31st December, 2008 i.e. corresponding to the proposed commissioning of WTGs at Bhambarwadi. The O&M cost and insurance have been revised considering the project commissioning date as 31st December, 2008.

5) An investment analysis of the project activity was conducted considering project IRR (Post-tax) as the most suitable financial indicator. The Weighted Average Cost of Capital (WACC) with a debt equity ratio of 70:30 has been determined in order to establish the benchmark of the project activity.

   In this regard please refer to the Maharashtra Electricity Regulatory Commission (MERC) tariff order dated 24th November, 2003 (Reference: http://www.mercindia.org.in/pdf/Detail_Wind_Energy_Order.pdf). The tariff order has stipulated a debt equity ratio of 70:30 for determination of tariff for purchase of energy by utilities from wind energy projects. The rationale for such decision by the MERC draws reference to the fact that the Government of India has set a norm of 70:30 for financing various power sector projects. Major financial institutions, including IREDA, generally adhere to this norm.

6) The investment benchmark of the project activity has been established as per the Weighted Average Cost of Capital (WACC) of the project activity. At the time of investment decision making process it was decided to consider only equity beta of the selected companies in order to ascertain the cost of equity. In appreciation to such approach the Beta value has not been un-levered when establishing the investment benchmark.

   At the time of investment decision making process the PP has decided to determine the market risk premium as per the price movement of the stocks listed in the BSE Sensex (Bombay Stock Exchange Sensitive Index). BSE Sensex is composed of the 30 largest and most actively traded stock in the market. The dip and the rise of the stock market are clearly identified from the movement of the BSE Sensex. In line with the investment decision making process the BSE Sensex has been considered to determine the market premium.

7) The income tax benefit on account of section 80 IA and accelerated tax depreciation have been considered in the IRR calculation work sheet that has already been submitted to SGS via e-mail dated 24th September, 2009. Please note that the IRR model has been further revised in order to reply to the comments received from the DOE during validation. The tax benefit on account of section 80IA and accelerated tax depreciation has been clearly reflected in the revised IRR model as well.

8) It can be conformed from Board resolution that project activity involves 100% equity.

9) The spreadsheet reflecting the detail computation of IRR and benchmark along with the sources of the input parameters have been provided to SGS via e-mail dated 24th September, 2009. However the IRR calculation worksheet and the benchmark have been further revised in line with comments received from DOE. The benchmark model is enclosed as Annexure 1b to this document.

10) The investment analysis section of the revised PDD includes sensitivity analysis. CUF, project capital cost, O&M expenses and applicable tariff after 13 years have been considered as the sensitive parameter to the project IRR. The result of the sensitivity analysis is enumerated below.

Sensitivity Analysis			
Parameter	**Variation**	**Value applied**	**Project IRR**
CUF	-10%	18.00%	7.47%
	Base case	20.00%	9.24%
	10%	22.00%	10.91%
Capital cost (Million INR)	Actual as per P.O.	240	11.12%
	Base case	270	9.24%
O&M Expenses	As per actual O&M contract dated 5th August, 2008	Please refer to the work sheet in the IRR model viz "O&M schedule"	10.17%
O&M Expenses	Base Case (As per proposal dated 4th June, 2008)	Please refer to the work sheet in the IRR model viz "O&M schedule"	9.24%
Tariff applicable after 13th Year	-	2.34	8.38%
	Base case	3.50	9.24%

It is quite evident from the table above that the project IRR corresponding to the different scenarios of sensitivity analysis remain well below the benchmark value of 11.91%.

Documentation Provided by Project Participant:

Annex 1.a - SnS_4.8MW_Financial_Decision Making
Annex 1.b - SnS_4.8MW_Financial_Actual Cost
Annex 2 - WACC _SnS

Information Verified by Lead Assessor:

1. SnS_4.8MW_Financial_Decision Making
2. SnS_4.8MW_Financial_Actual Cost

3. Annex 2 - WACC _SnS
4. Revised PDD version 02, dated 24/03/2010

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 16/04/2010

1) PP has removed the discussion over common practice; this is verified through section B.5 of revised PDD, this is accepted.
2) PP has submitted the revised excel sheet for IRR calculation at the time of decision making.
3) PP has considered working capital for the year 2008-09 in the revised IRR submitted this is found satisfactory and hence accepted.
4) PP has submitted the IRR calculation considering the actual O & M costs. Accepted.
   - The insurance cost is required to be paid for the overall project activity irrespective of the project commissioning schedule. Hence PP has considered insurance cost at 0.15% of the total project cost for the entire period of IRR computation. Accepted.
5) Evidences provided supporting to debt: equity of 70:30 is found authentic, verifiable and available to PP at the time of investment decision, hence accepted.
6) PP has provided justification for consideration of the Beta value and appropriateness of BSE sensex . Please clarify why minimum Beta value in the calculation in place of the average in order to be on conservative side has not been considered.
7) PP has submitted the revised IRR sheet reflecting the tax benefit on account of section 80IA and accelerated tax depreciation. Accepted.
8) Evidence provided is not found appropriate.
9) Revised benchmark analysis sheet along with supporting data is provided, point closed.
10) PP has submitted the sensitivity analysis and has also included it in the PDD. Please provide the sensitivity calculation in the excel sheet also with linked up data.
11) PP has considered the MAT for calculation of cost of equity; please justify consideration of MAT instead of appropriate corporate tax.

CAR # 03 is open.

Project Participant Response:	**Date:** 07/05/2010

6. **Minimum Beta Value:** The Beta value has been used as it was considered during the investment decision making process.
   Moreover at the time of investment decision making process it was envisaged that the project would be funded completely by internal accrual of capital. In line with the capital structure of the project activity the appropriate benchmark would have been cost of equity (20.4%). However in order to follow a conservative approach WACC of the project activity has been estimated considering a debt equity ratio of 70:30. The comparison of the benchmark at this two different scenarios is as follows

Sr. No.	Investment Benchmark Scenario	Value
1.	Cost of equity as per capital structure of the project activity i.e. 100% equity funded project activity	20.4%
2.	Weighted Average Cost of Capital (WACC) as per normative capital structure (Debt : Equity at 70:30) considered in order to ensure conservative approach while determining the investment benchmark	11.91%

   The discussion above justifies that a conservative approach has been followed in order to carry out the investment analysis of the candidate project activity.

10) The sensitivity analysis has been included in the IRR computation work sheet. And also in the revised PDD.
11) **MAT for calculation of cost of equity:** In the revised WACC computation the post tax cost of debt

has been derived using corporate tax rate instead of MAT.	
Documents provided by Project Participant:	
Financial analysis and WACC calculation excel spread sheets	
Information Verified by Lead Assessor:	
Financial analysis and WACC calculation excel spread sheet is checked	
Reasoning for Not Acceptance or Acceptance & Close out:	**Date:** 07/07/2010
6 .Since project activity is completely funded by internal accrual of capital i.e. 100% equity hence the appropriate benchmark would have been cost of equity (20.4%), however considering a debt equity ratio of 70: 30 the benchmark calculated by PP is WACC (11.91%) which is quite conservative. In view of this information the beat value used can be considered as appropriate and hence accepted. 10 .PP has provided sensitivity analysis for all the relevant parameters in the PDD and also in the excel sheet in line with the Para 17, EB 62 Annex 5 hence accepted. 11. PP has provided the revised WACC computation with post tax cost of debt calculated using corporate tax rate, hence accepted.	
CAR #3 re opened	
Lead Assessor Comment:	**Date:**20/04/2011
Please justify with appropriate evidences that project activity is funded by internal accrual of capital i.e. 100% equity only Please clarify why latest version of "Tool to calculate the emission factor for an electricity system" has not been used? Results of sensitivity analysis summarized in revised PDD is not consistent with the same reported in financial analysis sheet, please clarify the inconsistency observed.	
Project Participant Response:	**Date:** 20/05/2011
100% equity investment could be verify through CA Certificate by J.G Verma & Co, dated 20/06/2008 enclosed herewith. PDD has been updated as per "Tool to calculate the emission factor for an electricity system" version 2.1.0 It was typo error PDD has been revised to reflect correct values.	
Documentation Provided by Project Participant:	
CA Certificate by J.G Verma & Co, dated 20/06/2008 Revised PDD version 03,dated 28/03/2011	
Information Verified by Lead Assessor:	
Revised PDD and CA certificate is checked	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 04/06/2011
PP has provided CA Certificate by J.G Verma & Co, confirms that project activity is funded completely by internal accrual of capital, found appropriate hence accepted. PP has updated PDD incorporating the reference of "Tool to calculate the emission factor for an electricity system" version 2.1.0, found satisfactory hence accepted. PP is requested to justify how the selection of benchmark is inline with latest Guidelines on the assessment of investment analysis (EB 61 Annex 13, Para 13, 18)? Please clarify why latest Guidelines on the assessment of investment analysis (EB 61 Annex 13) has not been referred in PDD? CAR #3 is open.	
Project Participant Response:	**Date:** 11/07/2011
Calculated benchmark WACC is based on parameters whose are standard in market and suitably applied in the context of the underlying project activity inline with paragraph 13 of EB 61 Annex 13, please refer section B.5 of revised PDD for more detail. In calculation of benchmark debt: equity as 70:30 is used which the typical debt/equity finance structure in the wind sector in India inline with paragraph 18 of EB 61 Annex 13. PDD is updated including reference of latest Guidelines on the assessment of investment analysis (EB 61 Annex 13).	
Documentation Provided by Project Participant:	
Revised PDD version 04, dated 11/07/2011	
Information Verified by Lead Assessor:	

Revised PDD is checked	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 11/07/2011
It is elaborated in section B.5 of that the calculated benchmark is based on parameters i.e. 1. Cost of Debt 2. market return 3. Risk Free Return 4. Beta 5. Income tax rate It is confirmed that parameters used in benchmark calculation are standard in market and suitably applied in the context of the underlying project activity,it satisfies the requirements of paragraph 13 of EB 61 Annex 13,hence accepted. PP has used debt: equity as 70:30 which is the typical debt/equity finance structure observed in the wind sector in India. Thus; it satisfies the requirements of paragraph 18 of EB 61 Annex 13, hence accepted. CAR #3 is closed.	
Acceptance and Close out by Lead Assessor:	**Date:** 11/07/2011

Date:	22/09/2009		Raised by:	Assessment team	
Type:	CAR	Number:	04	Reference:	B.5.1
Lead Assessor Comment:					
1) Please provide emission reduction calculation sheet with source of each value used in the calculations 2) Please provide the evidence for the PLF determined as per Annex 11 of EB 48					
Project Participant Response:			**Date:** 26/03/2010		
1) The emission reduction calculation sheet has been provided along with the financial calculation spread sheet. 2) The PLF for the project activity have been determined by the study carried out by the independent engineering consultant.					
Documentation Provided by Project Participant:					
1. Annex 1.a - SnS_4.8MW_Financial_Decision Making					
Information Verified by Lead Assessor:					
1) SnS_4.8MW_Financial_Decision Making Sheet 2) Appraisal Report for Wind Energy Generation Estimates by M/S Kentech Konsulteam dated 10/06/2008.					
Reasoning for not Acceptance or Acceptance and Close Out:			**Date:** 16/04/2010		
1. Please provide emission reduction calculation sheet separately calculated as per the date mentioned in section C.2.2.1 of the PDD, version 02 and the end period of the year taken as December in each year. 2. The identification of the site mentioned in the PLF determination report(dated 10/06/2008) do not match with the plant location provided in the PDD version 2, please clarify about appropriateness of this report for project activity. The PLF determined is different than considered in the financial analysis. Please clarify inconsistency observed. 3. Please explain how the T & D losses will be accounted in the CER/electricity generation calculation. CAR # 04 is open.					
Project Participant Response:			**Date:** 07/12/2010		

1. The emission reduction calculation sheet has been provided separately as **Attachment 3** to this reply.
2. The location and the number of the WTGs as included in the project activity are as follows

Parameter	Information - A	Information - B
Location	Bhambarwadi	Panchpatta
District	Satara	Ahmednagar
Number of WTGs	5	1

In this regard please refer to the table 1 of the appraisal report for wind generation estimate at the project location mentioned above. The table refers to the same location i.e. Bhambarwadi and Panchpatta , The location details can also be reconfirmed from the commissioning certificates.

3. The emission reduction from the project activity is calculated from the net electricity supplied to the grid by the project. The net electricity supplied to the grid by the project activity is calculated based on the measured values of "export" and "import" on the MSEDCL meter, where joint reading is taken by EIL representative and MSEDCL officials. The export value of the electricity in the MSEDCL meter is the net of the export values from the WTGs and the transmission losses. Since, the transmission and distribution losses are accounted in the export of the MSEDCL meter hence the same has not been presented separately.

Documents Provided by Project Participant:

Attachment 3 - SnS_4.8MW_ER Calculations
PLF determination study by Kentech Konsulteam
Revised PDD version 02.
Commissioning certificate for the WTGs issued by MSEDCL

Information Verified by Lead Assessor:

PLF study report ,revised PDD,and ER calculation is checked

Reasoning for Not Acceptance or Acceptance and Close Out:	**Date:** 20/01/2011

1. PP has submitted the emission reduction calculation sheet separately. Same is accepted.
2. PP has provided PLF assessment study report issued by M/s Kentech Konsulteam Mumbai dated 10/06/2008; this report is based on the study carried out at the sites where project activity is located. This is found inline with paragraph 3(b) of EB 48 Annex 11, hence accepted.
3. The net energy export from the project activity will be calculated from the Joint meter Reading of MSEDCL substation meter. Same will show the readings after accounting of the T&D losses. Accepted.

CAR #4 is closed.

Acceptance and Close out by Lead Assessor:	**Date:** 20/01/2011

Date:	22/09/2009		Raised by:	Assessment team		
Type:	CL	Number:	05		Reference:	B.5.1

Lead Assessor Comment:

1. It is not clear about the calculation procedure for the monitoring parameters for two different sites involved in the project activity
2. PP needs to mention the roles and responsibility for data monitoring. PP needs to mention internal audit procedure for the monitored data and data review system

Project Participant Response:	**Date:** 26/03/2010

1) The description of the monitoring parameters has been revised to include the monitoring and calculation procedure for two different sites involved in the project activity. Please refer the revised PDD (version 02).
2) The roles and responsibility of the personnel for data monitoring and the internal audit procedure for monitored data and data review system have been presented in the section B.7.2 of the revised PDD (version 02)

Documentation Provided by Project Participant:

Revised PDD (version 02)	
Information Verified by Lead Assessor:	
Revised PDD version 02 dated 24/03/2010	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 16/04/2010

1. PP has added the name of the both sites in the monitoring parameters and clearly mentioned the calculation procedure for the parameter. The monitoring procedures for the both site are same. Accepted.
2. PP has provided information about roles & responsibilities for data monitoring, internal audit procedure and data review system in section B.7.2 of revised PDD version 02. Accepted

CL # 05 Closed.

Acceptance and Close out by Lead Assessor:	**Date:** 16/04/2010

Date:	22/09/2009		Raised by:	Assessment team	
Type:	CAR	Number:	06	Reference:	Revised Excel sheet

Lead Assessor Comment:

1. As per webhosted PDD it is mentioned that proposal from Enercon India Limited dated 04/04/2008 is considered for the decision making, however in the revised submission PP has changed the chronology, including the reference of proposal dated 04/06/2008 received from Enercon India Limited for the proposed wind power project. Please explain which proposal is considered by PP for the investment decision.
2. The WACC for the project has been changed from 13.9% to 11.91% at the time of decision making. Please justify this difference with appropriate evidences.
3. The tariff beyond 13th year has been considered as 5.30 Rs/Kwh in the Webhosted PDD, which is used at the time of decision making. PP has considered the same as 2.34 Rs/KWh in the revised financial analysis. Please clarify the change.
4. "Operation & Maintenance Cost from the date of commissioning for a period of 10 years" has been considered as 1.50 % in the web hosted PDD,however it is revised as 1.37% in the revised submission for decision making. Please justify this change in O&M cost with relevant evidences.

Project Participant Response:	**Date:** 07/05/2010

1. Please consider the following chronology of events in order to comprehend reference of two different proposals

S.N.	Activity	Date	Reference
1.	Indicative proposal received from Enercon India Limited (EIL)	4th April, 2008	Proposal from EIL
2.	Board meeting according approval to call for proposal to put up 4.8 MW wind power project at Maharashtra.	28th April 2008	Copy of the Board Note
3.	Final proposal received from EIL for the proposed wind power project.	4th June 2008	Proposal from EIL
4.	Board meeting according investment approval for the 4.8 MW wind power project.	20th June 2008	Board Meeting Note
5.	Purchase order being placed to EIL for the proposed wind power project.	05th August 2008	Copy of the purchase order

The proposal received from EIL dated 4th April, 2008 was an indicative offer. In due consideration of the indicative proposal, the Board had decided to call for offer from EIL vide Board meeting dated 28th April, 2008. The proposal dated 4th June, 2008 is the final offer that EIL submitted to the client and has made the basis of investment decision approval of the candidate project activity.
The proposal received from EIL dated 4th June, 2008 had been submitted to the DOE during validation.
The extract of the Board Resolution dated 20th June, 2008 wherein the investment approval was accorded to the project activity was enclosed as Annexure 3 to this reply.

2. The applicable tax rate in order to determine the cost of debt (post tax) has been revised in the WACC model. The difference in the value of applicable tax rate and the consequential impact upon the cost of debt (post - tax) and the WACC is as follows.

Sr. No	Cost of debt (pre-tax)	Applicable tax rate	Cost of debt (post tax)	WACC
1.	12.50%	11.33%	11.08%	13.9%
2.	12.50%	33.99%	8.25%	11.91%

The discussion above substantiates the underlying rationale for difference in the value of WACC between the webhosted document and the present submission.

3. The IRR of the project activity was computed at different rate of applicable tariff after 13th year during the investment decision making process. The tariff considered after 13th year during the different stages of decision making is as follows

S.N.	Activity	Date	Tariff considered after 13th year (INR/ kWh)
6.	Indicative proposal received from Enercon India Limited (EIL)	4th April, 2008	5.30
7.	Board meeting according approval to call for proposal to put up 4.8 MW wind power project at Maharashtra.	28th April 2008	
8.	Final proposal received from EIL for the proposed wind power project.	4th June 2008	2.34
9.	Board meeting according investment approval for the 4.8 MW wind power project.	20th June 2008	
10.	Purchase order being placed to EIL for the proposed wind power project.	05th August 2008	

In this regard please note that the document substantiating the applicable tariff after 13th year at INR 2.34 /kWh is enclosed as Annexure - 4 to this reply. The calculation of tariff after 23th year has been included in the IRR model.
However, appreciating the concern reflected in the DOE comment the applicable tariff after 13th year has been considered at INR 3.50/kWh in the revised IRR model.

4. The project proponent has received the final proposal from Enercon India Limited (EIL) on 4th June, 2008. This has formed the basis of providing the investment approval to the project activity vide Board meeting dated 20th June, 2008. The EIL proposal dated 4th June, 2008 specifies the O&M cost as 1.37% of the total project cost. In the revised IRR model the O&M cost has been considered as per the same mentioned in the EIL proposal dated 4th June, 2008.

Documentation Provided by Project Participant:
Same as above
Information Verified by Lead Assessor:
Revised PDD, version 03

Webhosted PDD for the project Board resolution for the project dated 20/06/2008	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 07/07/2010

1) The webhosted PDD mentioned the reference of proposal dated 04/04/2008..It has verified through Board note that proposal dated 04/04/2008 was an indicative proposal and hence PP had further invited proposal from WTGs suppliers. It can be confirmed that proposal dated 04/06/2008 was the final one and the basis for investment decision.
2) The applicable tax rate and cost of debt considered in benchmark calculation was not correct .PP has presented proper values in revised submission, leading to change in benchmark value from 13.9% to 11.91%.Since the change is validated and accepted by finance expert hence this point is closed.

3) PP had calculated tariff after 13th year in different scenario since the figure INR 5.30/kWh is not well supported by documentary evidence hence not considered in revised IRR calculation. As per paragraph 1.4.2 MERC Order dated 24/11/2003 "*The Commission notes that in Cost Plus Approach, which the Commission has adopted for tariff proposal, rate per unit charged by such projects during initial period of 10 years is bound to be higher as during this period the project has various debt related obligations. However, it is essential that the consumer is able to enjoy the benefit of cheaper power once all debt related obligations are paid off and project has virtually no variable costs."*
Using cost plus approach tariff after 13th year is calculated as INR 2.34/kWh, still PP has considered the tariff rate after 13th year as INR 3.50/kWh which is found appropriate and hence accepted.
4) Operation & Maintenance Cost from the date of commissioning for a period of 10 years was considered as 1.37% of the total project cost at the time of investment decision making, base on final Enercon proposal dated 04/06/2008, however the webhosted PDD mentions the O&M cost as 1.50% of total project cost was considered as per MERC Order 2003. Since the O&M cost considered at the time of decision making is conservative hence accepted. Also O&M cost has been subjected to reasonable variations under sensitivity analysis and confirmed that there will not be any negative impact on additionality if O&M cost decreases by 10%, hence this point is closed.

Accepted and Close out by Lead Assessor:	**Date: 07/07/2010**

Date:	25/08/2011		Raised by:	Assessment Team	
Type:	CAR	Number:	07	Reference:	Table 1, Section 1,2

Lead Assessor Comment:

Applied methodology version 16 of AMS I D got expired and under grace period, please clarify has not applied the latest version of methodology has not been applied?

Please clarify why the latest version of the 'Tool to calculate the emission factor for an electricity system' has not been referred?

Project Participant Response:	**Date:** 14/09/2011

Applicability of AMS ID, version 16: The approved methodology AMS ID was revised to version 17 during the EB meeting - 61 (30th May, 2011 - 3rd June, 2011). Following the EB 61 meeting the AMSID, version -17 was made effective from 17th June, 2011 onwards (Reference : http://cdm.unfccc.int/methodologies/DB/RSCTZ8SKT4F7N1CFDXCSA7BDQ7FU1X). It was also decided that AMS ID, version -16 can be referred if the request for registration is submitted 17 Feb 2012 23:59:59 GMT (Reference: http://cdm.unfccc.int/methodologies/DB/RSCTZ8SKT4F7N1CFDXCSA7BDQ7FU1X). Considering all such developments with regard to the revision in the version of the approved methodology AMS ID the project proponent had decided to use the latest version of the approved methodology i.e. AMS ID, version 17. The PDD and the related documents have been revised in accordance with AMS ID, version – 17. The latest version of 'Tool to calculate the emission factor for an electricity system': The PDD and the related documents have been revised using the latest version of the 'Tool to calculate the emission factor for an electricity system', version – 02.2.0
Documentation Provided by Project Participant:
Revised PDD version 05 dated 14/09/2011
Information Verified by Lead Assessor:
Revised PDD is checked to verify the changes made.

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 14/09/2011
PP has updated the PDD referring latest version 17 of methodology AMS I.D. Also the ER calculations have been revised as per the latest version of the 'Tool to calculate the emission factor for an electricity system', version – 02.2.0. This is verified from revised PDD and found correct. CAR #7 is closed	
Acceptance and Close out by Lead Assessor:	**Date:** 14/09/2011

Date:	25/08/2011		Raised by:	Assessment Team	
Type:	CAR	Number:	08	Reference:	Table 1, Section 1,2

Lead Assessor Comment:
Please clarify why the latest guidelines EB62 Annex 05 has not been followed for IRR and Benchmark calculation? Result of sensitivity analysis and parameters considered under sensitivity analysis are not consistent in IRR excel spread sheet and PDD, please clarify the same. Please clarify why sensitivity over O&M has not kept interlinked in IRR excel spreadsheet?

Project Participant Response:	**Date:** 14/09/2011
Use of latest guidelines EB62 Annex 05: The PDD has been revised using the guidelines on the assessment of investment analysis, version -05 (EB62, Annex - 05). Sensitivity Analysis: The PDD and the IRR calculation have been revised. In the revised document the PDD and the IRR calculation have been made consistent. O&M sensitivity is interlinked in IRR sheet.	
Documentation Provided by Project Participant:	
Revised PDD version 05 dated 14/09/2011 Revised IRR calculation sheet	

Information Verified by Lead Assessor:	
Revised PDD and IRR sheet is checked	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 14/09/2011
PDD and IRR sheet is revised as per the latest guidelines on investment analysis(EB 62 annex 5) Sensitivity analysis is made consistent with PDD and IRR sheet Sensitivity analysis over O&M cost is correctly applied and linked. Thus CAR #8 is closed	
Acceptance and Close out by Lead Assessor:	**Date:** 14/09/2011

Date:	25/08/2011		Raised by:	Assessment Team	
Type:	CAR	Number:	09	Reference:	Table 1, Section 1,2
Lead Assessor Comment:					
Please provide evidence for geographical coordinates of WTGs mentioned in PDD.					
Project Participant Response:			**Date:** 14/09/2011		
Geographical co-ordinates could be verified from the letter provided by WTG supplier enclosed.					
Documentation Provided by Project Participant:					
Letter from WTG Supplier					
Information Verified by Lead Assessor:					
Letter from WTG supplier is checked					
Reasoning for not Acceptance or Acceptance and Close Out:			**Date:** 14/09/2011		
The geographical co-ordinates provided by WTG supplier are found consistent with the same provided in section A.4.1.4 of revised PDD. CAR #9 is closed.					
Acceptance and Close out by Lead Assessor:			**Date:** 14/09/2011		

A.4 Annex 4: Team Members Statements of Competency

Name: Ravikant Soni

Status

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

Scopes of Expertise

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

Approved Member of Staff by: Siddharth Yadav Date: 01/08/2011

Name: Harsh Raval

Status

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

Scopes of Expertise

1. **Energy Industries (renewable / non-renewable)**

Technical Area(s*):*

2. **Energy Distribution**

Technical Area(s*):*

3. **Energy Demand**

Technical Area(s*):*

4. **Manufacturing**

Technical Area(s*):*

5. **Chemical Industry**

Technical Area(s*):*

6. **Construction**

Technical Area(s*):*

7. **Transport**

Technical Area(s*):*

8. **Mining/Mineral Production**

Technical Area(s*):*

9. **Metal Production**

Technical Area(s*):*

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

Technical Area(s*):*

11. **Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride**

Technical Area(s*):*

12. **Solvent Use**

Technical Area(s*):*

13. **Waste Handling and Disposal**

Technical Area(s*):*

14. **Afforestation and Reforestation**

Technical Area(s*):*

15. **Agriculture**

Technical Area(s*):*

Approved Member of Staff by: Siddharth Yadav Date: 12/11/2010

Name: Anshul Sharma

Status

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

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)
Technical Area(s*):*

2. Energy Distribution
Technical Area(s*):*

3. Energy Demand
Technical Area(s*):*

4. Manufacturing
Technical Area(s*):*

5. Chemical Industry
Technical Area(s*):*

6. Construction
Technical Area(s*):*

7. Transport
Technical Area(s*):*

8. Mining/Mineral Production
Technical Area(s*):*

9. Metal Production
Technical Area(s*):*

10. Fugitive Emissions from Fuels (solid, oil and gas)
Technical Area(s*):*

11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride
Technical Area(s*):*

12. Solvent Use
Technical Area(s*):*

13. Waste Handling and Disposal
Technical Area(s*):*

14. Afforestation and Reforestation
Technical Area(s*):*

15. Agriculture
Technical Area(s*):*

Approved Member of Staff by: Siddharth Yadav Date: 19/05/2011

Name: Vivek Ahirwar

Status

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

Scopes of Expertise

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

Approved Member of Staff by: Siddharth Yadav Date: 17/08/2011

Name: Vikas Bankar

Status

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

Scopes of Expertise

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

2. Energy Distribution **x**
Technical Area(s*):* TA 2.1 Electricity distribution
TA 2.2 Heat distribution

3. Energy Demand **x**
Technical Area(s*):* TA 3.1 Energy Demand

4. Manufacturing
Technical Area(s*):*

5. Chemical Industry
Technical Area(s*):*

6. Construction
Technical Area(s*):*

7. Transport
Technical Area(s*):*

8. Mining/Mineral Production
Technical Area(s*):*

9. Metal Production
Technical Area(s*):*

10. Fugitive Emissions from Fuels (solid, oil and gas)
Technical Area(s*):*

11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride
Technical Area(s*):*

12. Solvent Use
Technical Area(s*):*

13. Waste Handling and Disposal
Technical Area(s*):*

14. Afforestation and Reforestation
Technical Area(s*):*

15. Agriculture
Technical Area(s*):*

Approved Member of Staff by: Siddharth Yadav Date: 14/02/2011