VALIDATION REPORT

M/s Hindustan Platinum Pvt. Ltd.

Wind Power Project of Hindustan Platinum in Maharashtra

SGS Climate Change Programme
SGS United Kingdom Ltd
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Date of Issue:	**Project Number:**
19-06-2012	CDM.VAL2468
Project Title:	
Wind Power Project of Hindustan Platinum in Maharashtra	
Organisation:	**Client:**
SGS United Kingdom Limited	M/s Hindustan Platinum Pvt. Ltd.
Publication of PDD for Stakeholders Consultation	
Commenting Period:	27/01/2009 – 25/02/2009
First PDD Version and Date:	Version 1.0, 19/01/2009
Final PDD Version and Date:	Version 8.0, 11/05/2012

Summary:

M/s Hindustan Platinum Pvt. Ltd. has commissioned SGS to perform the validation of the project: Wind Power Project of Hindustan Platinum in Maharashtra.

Methodology Used: AMS I.D. Grid connected renewable electricity generation

Version and Date: Version 17, dated 17/06/2011

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 15 findings which include:

- 08 Corrective Action Requests (CARs);
- 07 Clarification Requests (CLs);

All findings have been closed satisfactorily, please refer Annex 3. 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, Local Assessor and sector expert (TA 1.2) Ajay Singh Thakur– Assessor Anshul Sharma– Financial Expert		☒ No Distribution (without permission from the Client or responsible organisational unit)
Technical Review:		
Date: 04-07-2012 Name: Vivek Kumar Ahirwar		☐ Limited Distribution
Authorised Signatory:		
Name: Siddharth Yadav Date: 17/07/2012		☐ Unrestricted Distribution

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Abbreviations

AMS	Approved Methodology Small Scale
BM	Build Margin
BPLR	Benchmark Prime Lending Rate
BSE	Bombay Stock Exchange
CAGR	Compound Annual Growth Rate
CEA	Central Electricity Authority
COP	Conference of Parties
CAR	Corrective action request
CDM	Clean development mechanism
CDM EB	CDM Executive Board
CER	Certified emission reduction
CL	Clarification request
CM	Combined Margin
CMS	Content Management System
DOE	Designated operational entity
DNA	Designated national authority
EB	Executive Board
EPC	Environmental Impact Assessment
EIA	Engineering, Procurement and Construction
FAR	Forward action request
GHG	Greenhouse gas(es)
GoI	Government of India
HCA	Host Country Approval
HPPL	M/s Hindustan Platinum Pvt. Ltd.
IRR	Internal Rate of Return
ISHC	International Stake Holder Consultation
LoA	Letter of Approval
MAT	Minimum Alternate Tax
MEDA	Maharashtra Energy Development Agency
MERC	Maharashtra Electricity Regulatory Commission
MoC	Modalities of Communication
MoEF	Ministry of Environment and Forests
MOP	Meetings Of Parties
MP	Monitoring Plan
MSEB	Maharashtra State Electricity Board
MSEDCL	Maharashtra State Electricity Distribution Co. Ltd.
MW	Mega Watt
MWh	Mega Watt Hour
NEWNE	North East West North-Eastern
OM	Operating Margin
O&M	Operational and Maintenance
PDD	Project Design Document
PLF	Plant Load Factor
PP	Project Proponent
PPA	Power Purchase Agreement
QA/QC	Quality Assurance/Quality Check
SSC	Small-Scale
UNFCCC	United Nations Framework Convention on Climate Change
WACC	Weighted Average Cost of Capital
WEC	Wind Energy Convertors
WTG	Wind Turbine Generator

Table of Content

Annexes:

1. Validation Opinion

SGS United Kingdom Ltd has been contracted by M/s Hindustan Platinum Pvt. Ltd. to perform a validation of the project: Wind Power Project of Hindustan Platinum in 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 two 1650 kW Wind Turbine Generators (WTGs) in the state of Maharashtra and supplying electricity to 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 are estimated to be 57,290 t of CO2e over a 10 year crediting period, averaging 5,729 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: 17/07/2012

2. Introduction

2.1 Objective

M/s Hindustan Platinum Pvt. Ltd. has commissioned SGS to perform the validation of the project: Wind Power Project of Hindustan Platinum in 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 is the installation of two 1650 kW of type V 82 Wind Turbine Generators in the state of Maharashtra, India. The electricity generated from the project activity is supplied to the NEWNE Grid. The project activity was commissioned on 31/03/2008. All the WTG involved in this project activity are owned by M/s Hindustan Platinum Pvt. Ltd. Thus the project activity aims at reducing GHG emissions by replacing the same amount of electricity from the NEWNE grid which otherwise would have been generated by a fossil fuel based power plant.

2.4 The Names and Roles of the Validation Team Members

Assessment Team	
Name	**Role**
Ravi Kant Soni	Lead Assessor/Local Assessor/Sector scope expert(TA 1.2)
Ajay Singh Thakur	Assessor
Anshul Sharma	Financial Expert

Technical Review Team	
Name	**Role**
Vivek Kumar Ahirwar	Technical Reviewer/Sectoral Scope Expert (TA1.2)

3. Methodology

3.1 Review of CDM-PDD and Additional Documentation

The validation is performed primarily as a document review of the publicly available project document version 01 dated 19th Jan, 2009 and the subsequent versions version 02 dated 23/04/2009, version 03 dated 03/08/2009,,version 3.1, dated 04/05/2010,version 04,dated 03/03/2011, version 05, dated 15/09/2011 ,version 06 dated 12/10/2011, version 07, dated 16/04/2012 and version 08,dated 11/05/2012 (final version)/1/. The assessment is performed by trained assessors using a validation protocol attached as Annex 2 Table 2

A site visit was performed on 25/03/2009 by the assessment team comprising of a Lead Assessor, Local Assessor and a technical expert. During the site visit, the assessment team checked the baseline, PDD related documents, CDM consideration, additionality and applicability of applied methodology. A few key local stakeholders were interviewed and various environmental laws, sustainability issues, electricity generation and all relevant data were checked.

3.2 Use of the Validation Protocol

The validation protocol used for the assessment is designed in accordance with the Validation and Verification Manual; Version 01.2 dated 30th July 2010 It serves the following purposes:

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

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

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

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

3.3 Findings

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

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

Where a non-conformance arises the Assessor shall raise a **Corrective Action Request (CAR).** A CAR

Is issued, where:

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 the letter of approval[/2/] issued by the Indian DNA to the assessment team, 'The Ministry of Environment & Forests' bearing No. 4/27/2008-CCC dated 27th Jan 2009. The name of the project activity and the 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. The HCA was further verified against the website of the Host Party DNA at the following link http://cdmindia.in/reports_list_details.php?id=&reporttype=&page=45 to confirm its authenticity (Project ID - 1193-08).

The letter of approval confirms that:

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

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

(c) The project contributes to Sustainable Development in India;

(d) The HCA refers to the precise proposed CDM project activity – 'Wind Power Project of Hindustan Platinum in Maharashtra' – mentioned in the PDD being submitted for registration.

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

CAR#01 was raised asking the PP to submit the LoA by the Host Party. In response, the PP submitted the LoA received from the Host Party DNA. The letter fulfils the requirements paragraphs 44-50 of the VVM version 01.2[/5/] and confirms the participation of HPPL. Hence CAR#01 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)[/5/].

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 M/s Hindustan Platinum Pvt. Ltd. The HCA[/2/] from the Indian DNA approves the participation of M/s Hindustan Platinum Pvt. Ltd. Therefore the PP is approved by a Party to the Kyoto Protocol. Also, the PP listed in tabular form 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.

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/HGLLOEUONKY04SLAM4HWI4IBQ79Y10/view.html. The PDD was webhosted from 27 Jan 2009 - 25 Feb 2009 and comments were invited on the validation requirements. No comments were received.

The PDD has been correctly applied and completed in accordance with the CDM-SSC-PDD form version 03, which is the latest available version and guidelines for completing SSC-PDD[/9/]. The tables, headings, logo, format and fonts are in accordance with that used in the template. Thus, the PDD is in accordance with the applicable CDM requirements for completing PDDs.

The PP has submitted the MoC letter[/4/], which was verified against the project title and information mentioned in Annex 1 and found to be consistent and hence accepted.

Opinion

In accordance with the requirements of paragraphs 51 to 54 of the VVM version 01.2 (EB 55 Annex 1)[/5/], the validation team is of the opinion that, the proposed CDM project activity meets all the relevant participation requirements.

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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)/9/. These are the latest available versions and have been confirmed from the UNFCCC website.

The title of the proposed CDM project activity 'Wind Power Project of Hindustan Platinum in Maharashtra', mentioned in section A.1 of the PDD, was verified by checking the same on the UNFCCC website and was found to be unique. The correctness of the project title was further verified against that mentioned in the revised HCA. The table indicating the name of the PP i.e. M/s Hindustan Platinum Pvt. Ltd. has been correctly applied in section A.3 of the PDD and is consistent with that mentioned in annex 1.

The proposed CDM project activity involves the installation of 2 WTGs with an installed capacity of 1.65 MW in Revangoan (Bhud) village of Khanapur Taluka of Sangli District in Maharashtra state in India. The electricity generated by the project is being exported to the NEWNE grid. The details of the WTGs are as follows:

TABLE 1: Details of Installed WTGs

WTG Location No. (Unique Identification)	Capacity (MW)	Date of Commissioning	Latitude	Longitude
R – 8	1.65	31/03/2008/10/	17º 16' 48.7" N	74º 38' 13.2" E
R – 22	1.65	31/03/2008/10/	17º 16' 27.1" N	74º 38' 50.2" E

The WTG location nos., capacity and commissioning dates have been verified through the commissioning certificate/10/ provided by the PP. The PPA/11/ has been checked to confirm grid connectivity and ownership. The land lease deed/12/, government order approving the transfer of 3.3 MW in favor of the PP and MEDA clearance/12/ has been checked to confirm that the PP possesses ownership and has received clearance to implement the project activity at the selected site. The technical details of the project activity were verified from the purchase order/13/, commissioning certificate/10/, and physical inspection during the site visit. The PP has provided the geographical coordinates of the WTGs which allows for clear identification of the project activity. The proposed CDM project activity does not involve any alteration of existing installations and processes. The WTGs installed as a part of the project activity are new as confirmed from the purchase orders and cross verified during the site visit.

The project falls under type (i): Renewable Energy Projects, as the project activity involves generation of electricity using wind energy which is a renewable source, and Category D, Grid connected Renewable Electricity Generation as the generated electricity by the project will be exported to the NEWNE grid. Hence, according to simplified modalities and procedures for small-scale CDM project activities the type and category of the project activity has been correctly identified in PDD. There are no projects in the 'registered or request for registration' category on the UNFCCC website with the same PP name or project title which are within 1 Km of project boundary. Hence, in line with 'guidelines on assessment of de-bundling for SSC project activities' version 03, the project is not a de-bundled component of a large scale project activity.

The proposed CDM project activity is expected to reduce emissions by supplying zero emission electricity to the NEWNE grid, which is dominated by fossil fuel, based power plants. Therefore, the net electricity generated by the project will displace the same amount of electricity that would have otherwise been generated by fossil fuel based power plants and a certain amount of GHG emissions will be consequently reduced as well. The proposed CDM project activity is estimated to achieve an annual emission reduction of 57290 tCO_2e over the 10 year crediting period. This is reflected in the table in section A.4.3 of the PDD/1/. The table reflects the estimated amount of emission reductions over the entire crediting period.

The PP has given a written declaration to confirm that there is no usage of public funding in the project activity.

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

CL#02 was raised as the emission reduction figure for the crediting period was not consistently mentioned in section A.4.3 of the webhosted PDD (refer text and the value in subsequent table). In response, the PP corrected the typographical error in the PDD. Hence CL#02 was closed.

CL#12 was raised asking the PP to submit the complete and signed modalities of communications and declaration on 'No official development assistance' or direct subsidies received in the project activity. Submitted documents were checked and found to be acceptable. Hence, CL#12 was closed.

Opinion

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

4.4 Eligibility as a Small Scale Project

The proposed CDM project activity is a renewable energy project with an installed capacity of 3.3 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 purchase order/13/, and the PPA /11/signed with the state utility.

Thus, the proposed CDM project activity qualifies within the threshold of 15 MW and meets the eligibility criteria for small-scale CDM project activities mentioned in paragraph 6 (c) of decision 17/CP.7. Also, the project activity conforms to type (i) (Renewable Energy Projects) and category D (Grid connected renewable electricity generation). The project activity falls under sectoral scope 1: Energy industries (renewable-/ non-renewable sources).

The PP has used AMS I.D version 17/6/, which is an approved small-scale methodology and has been verified from the following site http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html. The applicability criteria of the methodology have been described in section 4.5 below.

Opinion

As per the requirements of paragraphs 134-136 of VVM version 01.2 (EB 55 Annex 1)/5/, 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 17/6/. 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. The grid connectivity of the project was verified through the PPA/11/ signed with the respective state utilities.
2. Paragraph 2 – The project activity supplying electricity to NEWNE grid which is regional grid. Thus, option (1) of Table 2 of AMS I D version 17 is applicable to project activity. This was also verified during the site visit.
3. Paragraph 3 – The purchase orders/13/ issued for the project activity indicates that the project activity is a Greenfield plant. Thus option (a) is applicable to project activity. It is not a capacity addition or retrofit or replacement as defined in the methodology.
4. Paragraph 4 – This criterion is related to hydro power 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 3.3 MW which is within the threshold of 15 MW for small-scale projects. This was verified from the commissioning certificates/10/.
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 criterion is not applicable since the project is a Greenfield plant as discussed under paragraph 3.
8. Paragraph 8 – This criterion 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[/6/].

Discussion CARs/CLs:

It was found that the PP had referred expired version of applied methodology AMS I.D version 16,hence **CAR #14** was raised asking clarification that why the latest version of AMS I.D is not referred for project activity. In response the PP has revised the PDD in line with latest version of applied methodology AMS I.D version 17 and same was checked and found satisfactory, hence **CAR #14** closed.

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, metering point, sub-station metering point and NEWNE grid, to which the proposed project activity evacuates power, inside the boundary. This was verified through physical inspection during the site visit and through the commissioning certificates[/10/] and PPA[/11/]. The NEWNE grid has 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[/15/] which was available at the time of webhosting the PDD for ISHC.

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

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 02.2.1[/7/] 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[/8/] and by referring to Investment barrier of the tool[/8/]. 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. Quotation from Vestas dated 13/12/2007[/24/]
2. Purchase orders issued to the WTG suppliers[/13/]
3. O&M agreements[/16/]
4. Loan sanction letters[/17/]
5. Board resolution extracts[/18/]
6. CEA database version 4[/15/]
7. PLF estimation report prepared by third party Fair Aero Consultant & Technologist[/19/]
8. MERC tariff order dated 24/11/2003[/20/]
9. Land Lease Deed[/12/]
10. Clearance issued by MEDA & the State Government Approval[/12/]
11. Commissioning Certificates[/10/]
12. Power purchase agreements[/11/]

The data, rationales, assumptions and justifications mentioned in the PDD[/1/] and the IRR excel sheet[/3/] 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 assessment team has validated the key input parameters from the Quotation submitted by the WTG supplier and confirm that the Quotation was available with the PP at the time of investment decision. This is in line with paragraph 6 of EB 62 Annex 5.

Some parameters have been checked against the MERC Order dated 24/11/2003[/20/]. The validation team confirms that this order was the latest authentic and publically official document available at the time of the investment decision and hence appropriately applicable to the project activity.

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)[/5/], 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 16/01/2008. The evidence submitted by the PP for this was the purchase orders[/13/] issued to Vestas for the supply of 2 WTGs. The purchase orders were checked for the date and were 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 6[/21/] and paragraph 67 of EB 41 meeting report.

The start date of the proposed CDM project activity is 16/01/2008, which is before the date of 02/08/2008 and hence it is an existing project activity as per EB 62 annex 13[/22/]. Existing project activities are required to demonstrate that the CDM was seriously considered in the decision to implement the project activity. The

events/actions taken by the PP have been summarized in the tables below. The documents submitted by the PP as evidence have been assessed by the validation team and referenced in the tables below:

TABLE 2: Chronology of Events

NO.	EVENT / ACTION	Evidence validated	DATE
1	Awareness of CDM prior to project activity demonstrated through registered CDM project of M/s Hindustan Platinum Pvt. Ltd.	UNFCCC Ref. no: 0310/23/	29/05/2006
2	Quotation for WTG from Vestas	Original Quotation/24/	13/12/2007
3	Board Resolution with CDM consideration	MoM extract/18/	11/01/2008
4	Project Approval by the Chairperson of HPPL	Approval letter/18/	14/01/2008
5	Purchase order issued (start date of the project activity)	Purchase order/13/	16/01/2008
6	Discussion with PDD consultant	Mail communications with CDM Consultant/25/	28/01/2008
7	Infrastructure Clearance	Clearance letter from MEDA/12/	13/02/2008
8	Commissioning of WTGs	Commissioning certificate/10/	31/03/2008
9	Appointment of PDD consultant	Signed Contract with CDM Consultant /26/	04/04/2008
10	Meeting for HCA Approval at MoEF, Govt. Of India	MoM/2/	17/11/2008
11	Local Stakeholder Consultation Process	MoM/27/	29/11/2008
12	Work Order placed to DOE	Signed agreement with SGS/28/	23/12/2008
13	PDD webhosted for Global Stakeholder Consultation	UNFCCC project webpage/29/	27/01/2009 to 25/02/2009

The chronology of events for the project activity has been provided in section B.5 of the PDD. The validation team has assessed the documentary evidences for all the events listed in the above chronology.

The extracts of the board meetings held on 11/01/2008 confirms that the CDM incentive was seriously considered as part of the management's decision to invest in the project activity. The CDM consultant was appointed within a year of the start date of the project activity. The WTGs have been commissioned, power purchase agreement signed and the DOE appointed within a reasonable period of time after the start date of the project activity. This indicates that continuing and real actions were carried out.

From the above discussions and the chronology of events table, it can be confirmed that the project participant was aware of CDM prior to the start date of the project activity and even prior to the decision for the project activity. From the dates of the events or actions mentioned above it is observed that there is less than 2 years of a gap between the documented evidence. Hence as per paragraph 8(a) of EB 62 Annex 13 the validation team concluded that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation.

CAR#04 was raised asking the PP to documentary evidence to demonstrate serious CDM consideration as per applicable guidance EB 41 Annex 46. In response, the PP provided the assessment team with documentary evidence for all events mentioned in above table. The evidences were checked and found authentic. As discussed above, after validation it was concluded CDM has been seriously considered in the project activity. The information in PDD complied with latest applicable guideline EB 62 Annex 13. Hence, CAR#04 was closed.

Opinion

Based on paragraph 6, 7 and 8 of EB 62 annex 13, the validation team is of the opinion that continuing and real actions were taken to secure CDM status for the project activity.

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 'Attachment A to Appendix B of the simplified modalities and procedures for small scale CDM project activities' to demonstrate additionality and carry out the investment analysis. The same 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 (Internal rate of return) as the financial indicator and WACC (Weighted average cost of capital) as the benchmark.

The following parameters have been used to calculate the Equity IRR:

1. Project Capacity
2. Project Cost
3. Plant Load Factor (PLF)
4. O&M cost
5. Escalation in O&M cost
6. Tariff rate
7. Debt Equity Ratio
8. Term loan
9. Interest on term loan
10. Repayment period
11. Moratorium period
12. Income tax
13. Depreciation (book and IT)

To verify the accuracy of the financial calculations, the IRR excel sheet[/3/] has been assessed against the applicable/relevant criteria of latest version of the Guidance on the Assessment of Investment Analysis (EB 62 Annex 5) which is as per the requirement of paragraph 110 of the VVM version 01.2.

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 the assessment are elaborated under the sensitivity analysis section in this report. The variables, that constitute more than 20% of either total project cost 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 validation team confirms that this variation (+/-10%) is reasonable and appropriate in the context of the proposed project activity circumstances. Further, the same can be confirmed through the purchase orders placed by the PP reflecting the actual values of key input parameters like project cost, O&M and PLF.

Project Capacity: 3.3 MW

The project capacity has been verified from the quotations[/24/] submitted by WTG supplier Vestas. The same is further cross checked with purchase order[/13/] issued by the PP to Vestas for 2 WTGs of capacity 1.65 MW each and the PPA signed[/11/] for this project activity.

Project Cost: INR 2256.60 Lakhs

The PP has considered the project cost per MW of INR 683.82 Lakhs from quotations[/24/] submitted by Vestas. This value was available with the PP at time of investment decision. The project activity has an installed capacity of 3.3 MW and hence the total project cost has been calculated to be INR 2256.60 Lakhs. The project cost includes the cost of the WTG; erection, installation and commissioning charges; and fee paid to Maharashtra Energy Development Agency (MEDA).

It is worthwhile to note that MERC tariff order dated 24/11/2003 provide the estimated cost/MW to the projects commissioned during the period from 01st April 2003 to 31st March 2007.Since the proposed project

activity is commissioned after 31/03/2007, hence it is not appropriate to compare cost/MW mentioned in MERC tariff order dated 24/11/2003 with the same considered for proposed project activity.

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

Project UNFCCC Ref.No-	Implemented capacity(MW)	Cost/MW(INR Lakhs)
3554	1.2	600
4223	1.5	604.76
4475	9.9	676
Proposed project activity	3.3	683.82

The project cost per MW was found to vary from INR 600 lakhs to INR 676 lakhs. This variation in project cost are due to reasons such as different suppliers; varying capacity of the projects; specific location of the project activity; negotiation capability of the client; etc. The corresponding cost per MW for the project activity in the same region is INR 683.82 lakhs. It is worthwhile to note that the actual cost per MW as per purchase order placed for proposed project activity is arrives as INR 677.75 lakhs. Hence, the project cost considered for the proposed project activity is acceptable and appropriate. the project cost per MW from the Centre of Wind Energy Technology (C-WET)[/32/], an autonomous research and development institute under the Ministry of New and Renewable Energy, Government of India, states that "For a wind farm, the capital cost ranges between INR 45 Million to INR 68.5 Million per MW (i.e. between INR 450 lakhs to INR 685 lakhs) depending up on the type of turbine, technology, size and location." This has been verified from web link (http://www.cwet.tn.nic.in/html/information_gi.html).

The value of project cost was also checked by the sectoral scope expert and confirmed to be appropriate.

Plant Load Factor (PLF): 21.84%

The PP has considered a PLF of 21.84% for the financial analysis, which is calculated based on estimated electricity generation by the technology supplier in quotation[/24/] submitted to PP. The estimated electricity generation figure remains consistent in quotation and final contract between the parties. In accordance with EB 48 Annex 11, the PP further contracted a third party to determine the PLF of WTGs at the project site. In a report[/19/] dated 31st July 2010, third party-Fair Aero Consultant and Technologist estimated a PLF of 20.44% of both WTGs at project site. Hence, it has been concluded that PLF used by the PP in IRR calculation is conservative and was found to be appropriate.

The validation team has further crosschecked considered PLF value against the tariff order[/20/] dated 24th Nov 2003, which propose to use a PLF of 20% for projects commissioned after 1st April 2003. Hence, it has been determined that PLF used in the project activity is conservative and found to be appropriate.

Operation & Maintenance (O&M) cost: INR 24.00 Lakhs

The PP has considered the O&M cost to be INR 24 Lakhs as provided by the technology supplier in quotation[/24/] submitted to PP in line with paragraph 6 of EB 62 annex 5.O&M cost is free for first year after commissioning and will be applicable from second year onwards. Anticipating the expected variation in O&M cost Project participant 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 (EB62, annex 5). The results of sensitivity analysis summarized at the end of this section.

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Escalation in Operation & Maintenance (O&M) cost: 7.5% from second year till 5th year and 5% beyond after 5th year-

The annual escalation in O&M has been considered as 7.5% from second year till 5th year as verified through the quotation/24/ submitted to the PP. Since the quotation did not provide the escalation beyond the 5th year of operation, the escalation in O&M costs as 5% beyond the 5th year has been sourced from the relevant MERC Tariff Order dated 24/11/2003 which was the latest official data available to the PP at the time of investment decision,

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. Wind Energy Project in Maharashtra by M/s Shah Promoters & Developers, having UN reference no.4489 registered on 14/02/2011 for Maharashtra

   (Ref: http://cdm.unfccc.int/Projects/DB/RWTUV1297334687.42/view)

2. Wind Power Project at Maharashtra by AAA & Sons Enterprises Pvt. Ltd., having UN reference no.5345 registered on 17/10/2011 for Maharashtra

   (Ref: http://cdm.unfccc.int/Projects/DB/RWTUV1318842301.63/view)

3. Wind Power Project in Maharashtra by M/s Air Control (India) Pvt. Ltd., having UN reference no.5350 registered on 23/11/2011 for Maharashtra

(Ref: http://cdm.unfccc.int/Projects/DB/RWTUV1319104063.63/view)

4. "Roaring 40's Wind Farms (Khandke) Private Limited – Phase III" having UN reference no.3611 registered on 18/09/2010 for Maharashtra

   (Ref: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: 3.50 INR/kWh

The applicable tariff rate has been considered as per the MERC tariff order/20/ dated 24th Nov 2003 (page 112). 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. PPA/11/ signed between the PP and MSEDCL states that the applicable tariff rate will be 3.50 INR/kWh for first year from date of commissioning. It further states that tariff rate will be escalated INR 0.15/ kWh every year for a period of 13 years from the date of commissioning of the project. Furthermore, the tariff rate is also cross verified from PPA/11/ and was found to be consistent with provisions of MERC order, hence accepted. Section 2.01 of PPA clearly states that the sale of Wind energy under this agreement shall be governed by MERC Order dated 24/11/2003; this justifies the applicability of MERC Orders for this project activity. The Wind power tariff in Maharashtra is fixed by MERC order 2003 and there is no possibility of any change and therefore the sensitivity on tariff for first 13 yrs has been ruled out as per guidance mentioned in this order.

After the 13th year the PP considered the tariff INR 3.50/KWh from 14th year up to 20th year with same escalation, despite the fact revealed as per section 1.4.2 of MERC order 2003 that the tariff after the 13th year will be lesser once all debt has been paid off.

Also from the 14th year to the 20th year the PP carried out sensitivity analysis considering the tariff rate variation above and below 10%,in line with paragraph 20 of the "Guidelines on the assessment of investment analysis" (EB62, annex 5). Results of the same is summarized under "Sensitivity analysis" in this report.

Interest on term loan: 13%

The project participant has considered interest rate as 13 %, the average PLR (prime Lending Rate)/38/ published by RBI dated 11/01/2008. (http://www.rbi.org.in/scripts/WSSView.aspx?Id=11936). The same interest rate was valid at the time of the investment decision. This official data is publically available and published by Government of India, hence eliminates any ambiguity that there could have been in this regard.

Same has been checked by the assessment team and was found to be correct. Assessment team is of the opinion that interest rate considered for the project activity is reasonable and hence accepted.

Repayment period: 10 years

The PP has considered a repayment period of 10 years including a moratorium period of 1 year as per the MERC Tariff order[/20/] available to PP at the time of investment decision. This official data is publically available and published by Government of India, hence eliminates any ambiguity that there could have been in this regard.

The repayment period is also further verified through loan sanction letter[/17/] and found consistent, hence accepted.

Income tax: 33.66%

Considering an income tax of 30%, surcharge of 10% on the tax and an education cess of 2% as per the income tax rule, the total income tax on the project activity is 33.66%.

IT Depreciation:

80% using Written Down Value (WDV) method, However In Year 1 only 50% of allowed depreciation is claimed as it was assumed that project will be operation for less than 180 days, the same is in line with provisions in Section 32, Rule 5 of applicable Income Tax Act 1961, for subsequent years, the mentioned rates of depreciation have been considered as per section 32, Rule 5 of the Income Tax Act 1961. Assessment team confirms that the used depreciation rate was applicable at the time of decision making and has been correctly applied in investment analysis.

Book Depreciation: 5.28%, 50% depreciation is claimed for 1st year as it was assumed that project will be operation for less than 180 days. Depreciation rate of 5.28% is as per The Companies Act, 1956, SCHEDULE XIV for wind turbines, it is verified through "The Companies Act", 1956, Schedule XIV.s.

Benchmark Analysis:

Project participant has considered Weighted Average Cost of Capital (WACC) applicable at the time of investment decision as benchmark for the project IRR of project activity as per paragraphs 12 and 13 of Guidance on Assessment of Investment Analysis i.e. EB 62 Annex 05. The benchmark WACC is calculated based on publicly available financial data.

Debt Equity ratio: 70:30

The PP had considered a debt equity ratio of 75:25 in calculation of WACC and IRR. This was based on investment made by PP in previous 3 years in wind power. However, the impact of revised investment guideline (Paragraph 18 of EB 62 Annex 5)[/31/] was assessed by SGS on WACC and IRR. MERC Tariff order[/20/] dated 24/11/2003 have proposed to use 70:30 as the debt/equity ratio for determination of tariff for purchase of energy by utilities from wind power projects. In absence of project specific data, the debt-equity structure of 70:30 is observed in wind power sector in India. SGS has assessed that even application of 70:30 debt-equity ratio will not make project activity financially viable. The same is demonstrated in IRR calculation spreadsheet[/3/]. Hence, considered debt/ratio is found reasonable.

Also validation team has verified the project IRR and benchmark considering debt equity ratio as 75: 25 and it is confirmed that project IRR would remain below benchmark.

Return on equity:

Cost of equity has been estimated based on Capital Asset Pricing Model (CAPM)[/3/]. As per the model, the required return on equity investment is the return of risk free security plus beta times the difference between market return and risk free return.

Re = Risk Free Return + Beta x (Market Return – Risk Free Return)

Risk free rate on return:

The risk free rate of return is a benchmark figure against which all the investments in an economy should be measured. Reserve Bank of India provides information on Month-end yield to 20 years maturity, which is actually risk free return. The available value for risk free return is 8.2083% month-end yield of the month

December 2007[33] published on 14/12/2007 which was latest available at the time of decision of the project activity. The date of publication of data could be verified through official website of RBI[33].

Expected market return and Risk premium:
The market risk premium, as measured and applied in practice is the premium above the risk free rate if return that investors expect to earn on a portfolio of equities. Equity indices are indicator of expected market return. With a view of eliminating the unsystematic risk associated with the projects totally Power generating companies listed in BSE[35] has been taken to represent the market return. In order to determine the market return for the cost of equity in CAPM model, the market return from SENSEX is considered due to its reflection of the market return for a longer period over the other index. SENSEX started in April-1978 but data is available in public domain since Jan 1991.In view of this information PP had two options to select time period for calculation of market returns

i. 29.78 years (considering the SENSEX data from 1st April 1978(base data available) till the data available at time of investment decision(11/01/2008)
ii. 17.03 years(considering the SENSEX data electronically available in public domain since 2nd Jan 1991 till the data available at time of investment decision(11/01/2008)

Considering option (i) value of market returns arrives as 19.64% and the same is 19.53% with option(ii).Hence being on conservative side a period from 2nd Jan 1991 till the date of decision making (11/01/2008) i.e. time period of17.03 years is considered. Assessment team able to confirm that vintage years used to calculate market return and consequently benchmark is appropriate and comparable with the investment horizon and project activity life time.

Beta value:
Project participant estimated equity beta values for power companies in India. Equity beta measures the risk that cannot be eliminated in a systematic, well balanced and diversified portfolio. The beta of equity is calculated as the covariance between its return and the return of a well diversified market portfolio, divided by the variance of the return of a well diversified market portfolio.

Equity Beta (β) = Covariance (r, rm) / Variance (rm)

Where:
r is the return from the equity investment in a single stock
rm is the return from the equity investment in the well-diversified market portfolio.

Based on the analysis, the PP has estimated beta values for a set of power generating companies in India. It is verified that the list of all companies listed and being traded on BSE is available on official website of "Bombay stock exchange" (Ref:http://www.bseindia.com/downloads/about/abindices/file/Indices.zip).
After checking the listing dates of these companies, it is confirmed that only 16 companies were being traded on BSE at the time of decision making.

Equity Beta of various power companies of India for financial year 2006-2007 are presented as following:

The PP has considered beta values of above listed companies which function in the electricity generation area in India. The data used to calculate the Equity Beta of the selected companies are from the stock prices available from the BSE exchange. A period of latest 5 years stock price data has been considered for determining the Equity. In view of the fact that a company should have been listed for at least 5 years at the time of investment decision, the number of similar companies are lessened down to 7

Company Name	Beta Value
Tata Power Co. Ltd	1.1107
CESC Ltd.	1.0208
Reliance Infrastructure Ltd.	1.2039
Neyveli Lignite	1.1986

BF Utilities	0.7289
Gujarat Industries Power	1.0746
Diamond Cables Ltd.	0.9197
Average	**1.0367**

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The PP for setting up the regression can use the data (monthly stock prices) for either a long gestation period or for a short period. A longer gestation period may provide more data for observation which is desirable, but however the firm itself might have changed its risk characteristics over the time period. For instance, using data for a longer period (from 1991 to till decision making) to estimate beta might increase the amount of data available, but it will lead to a beta estimate that is much higher than the true beta, since the firm was a smaller and riskier firm in 1991 than it was in 2008.This is as indicated by Ashwath Damodaran[37] in his "**Corporate Finance Theory"** which confirms that ""*Risk and return models are silent on how long a time period one needs to use to estimate betas. Services use periods ranging from two years to five years for beta estimates, with varying results*" and as per the literature "**Investment Management: A modern guide to security analysis and stock selection**[37]" mentions that *"an analyst has the liberty to choose the time period for beta estimation. Typically analysts use 2 year and 5 year data".*
Hence a recent data of 5 years (01/01/2003 to 01/01/2008) has been considered for the regression analysis and the average of the data arrived as 1.0367 which is found to be appropriate.

Cost of debt:

Project participant has considered the average prevailing Prime Lending Rate of State Bank of India as debt rate to calculate benchmark for the project activity[38] available at the time of decision. This official data is publically available and published by Government of India, hence eliminates any ambiguity that there could have been in this regard.

Using the above values the benchmark for the project activity has been determined as 12.02% as per the latest IRR sheet. Thus, the project IRR of the project activity is below the benchmark. The analysis indicates that the project activity is not financially viable. Further, a sensitivity analysis has been carried out subjecting critical parameters to variations of 10% and the same has been discussed below under the heading – "Sensitivity Analysis".

The data in the revised excel spreadsheet presented by the PP have been validated against the references provided and was found to be correct.

The PP has submitted all versions of the excel spreadsheets used for the investment analysis. The financial expert has checked the sheets. All the assumptions, links and formulae used in the sheet are readable and all cells are viewable and unprotected. The analysis has been presented in a transparent manner in the excel spreadsheet and is reproducible.

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

Sensitivity Analysis

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. Plant Load Factor (PLF)
3. Tariff rate
4. O&M Cost

The results of the sensitivity analysis have been presented in the PDD. The results have also been presented in the excel spreadsheet in a reproducible manner. The sensitivity analysis for the variables covers a range from +10% to -10%, which is appropriate in context of the project requirements.

The outcome of the sensitivity analysis for each of the variable along with the selected benchmark is as follows:

The sensitivity analysis for the project activity has been carried out by varying PLF by 10% from base value. The sensitivity analysis result indicates that increase in 10% PLF will make project IRR jump to 10.59% and by decreasing PLF by 10%, project IRR decreases to 7.27%. It is noted that varying PLF to 19.6% will make IRR cross the benchmark. However, a PLF of 26.12% seems highly unrealistic as third party report /19/ indicates a PLF of 20.44% in the region. Further, it may be worth noting that the PP has considered a conservative value of PLF (i.e. 21.84%) in IRR calculation. Hence, the variation of 10% in PLF accounted under sensitivity analysis is reasonable and found acceptable. The calculation was checked and found to be correct and the project IRR does not cross the benchmark in this case.

The sensitivity analysis has also been carried out on the total project cost. The sensitivity analysis results indicated that with decrease in 10% of the total project cost, the IRR value shoot up to 10.29% and will not cross the benchmark value of 12.02%.

Even after giving a sensitive variation of 10% in electricity tariff the project IRR shoots up to 10.31% but does not cross the benchmark.

Hence, it could be concluded that under any realistic variation in input values the project IRR will not cross the benchmark value of 12.02%. Therefore, the project activity could be termed as 'additional'.

Discussion CARs/CLs:

CAR #3 was raised asking clarifications for following key issues:

1. Objective evidences for all the assumptions and justifications made for the investment analysis mentioned in the section B.5 of the PDD were not provided.
2. Justification for the choice of PLF value used was not provided in the PDD
3. Evidence for applicability of "other barriers" and "technological risk" for project activity was not provided.

In response to CAR #3 the PP has clarified that

1. The PP has submitted documentary evidence for all input parameters used in investment analysis. Objective evidences for all input parameters used in investment analysis and the same has been checked and found to be valid at the time of investment decision. Hence issue closed.
2. The PP has clarified that the considered PLF of 21.84% for the financial analysis, which is calculated based on estimated electricity generation by the technology supplier in quotation. The estimated electricity generation figure remains consistent in quotation and final contract between the parties. Also in accordance with EB 48 Annex 11, the PP has further contracted a third party to determine the PLF of WTGs at the project site and as per the report dated 31st July 2010 prepared by third party-Fair Aero Consultant & Technologist, the estimated PLF as 20.44% is arrived of both WTGs at project site. Hence, it has been concluded that PLF used by the PP in IRR calculation is conservative and acceptable. Hence this issue was closed.
3. In final PDD additionality is demonstrated based on investment analysis and all other barriers have been removed from the PDD. The same is found satisfactory, hence issue was closed.

Responses provided by PP were found satisfactory hence CAR #3 was closed out. Detailed discussions have been provided in annex 3 under CAR #3.

CAR#06 was raised asking the PP to provide the emission reduction calculation sheet. On analysis of spreadsheet, the PP was requested to justify the calculated PLF value. The PP was also requested to update the emission factor calculations in line with the latest tool. In response, the PP clarified that uncertainty factors were not applied in calculation of net gross generation in webhosted PDD, also loss factors were applied on net electricity generation rather than gross generation. The errors in calculation of PLF were corrected in revised sheet and emission reductions were recalculated. The emission reduction

calculation in final PDD was found correct and in line with applied methodology. Hence CAR#06 was closed. Detailed discussions have been provided in annex 3 under CAR #6.

CAR#13 was raised by the assessment team to seek justification on why 19.6% of sensitively on PLF was not realistic since this variation to the PLF will result in the project IRR crossing the benchmark. The PP submitted the Report (dated 31st July 2010) on Generation & P.L.F. estimation by third party Fair Aero Consultant & Technologist. The report suggests that the most likely PLF achievable by both the WTGs is 20.44%. Hence, the considered PLF of 21.84% is already very conservative when compared to third party estimation. Therefore, the assessment team accepted the argument that it is highly unrealistic that the PLF for all the years of the assessment period can increase by 19% from the third party PLF estimation. Hence CAR#13 was closed by the assessment team appropriately. Detailed discussions have been provided in annex 3 under CAR #13.

CAR #15 was raised to clarify following issues:

i. It was not clear how the considered risk free rate of return is suitable to calculate benchmark comparable to financial indicator calculated using 20 yrs assessment period.

ii. It was not clear how the considered time period used to calculate cost of equity is suitable to calculate benchmark comparable to financial indicator calculated using 20 yrs assessment period.

iii. It was not clear how the source referred for interest rate on loan is in line with paragraph 13 of EB 62 annex 5.

iv. It was not clear why only 4 companies have been selected for beta calculation, no information on what data vintage has been considered and no direct link to source is provided. Also screen shots of capitaline were not included in the PDD.

v. No documentary evidence was provided for the actual escalation on O&M cost after 5th year of project implementation. Also it was not clear why the escalation rate of O&M is not included as parameter under sensitivity analysis.

i. In response the PP has clarified each issue as following:The risk free rate has been derived as the yield on maturity of a 20 year old government bond, as per the latest Reserve Bank of India Handbook available at the time of decision making (published on 14/12/2007. Since the considered risk free rate derived as the yield on maturity of a 20 year old government bond, the same is found comparable to financial indicator calculated using 20 yrs assessment period, hence accepted. Issue closed satisfactorily.

ii. The data vintage for calculating cost of equity is based on the historic performance of the BSE-SENSEX. However, historic data is not available for the period since a day after its inception, i.e., 02/04/1978 (inception date: 01/04/1978) to 01/01/1991. Hence, market growth has been calculated between both periods (01/04/1978-11/01/2008) and (02/01/1991-11/01/2008). The more conservative value for growth has been observed for the latter period. Though the period of (02/01/1991-11/01/2008) is around 17 years, it may please be noted that not only is this data conservative, it is also more similar to project duration of 20 years rather than (01/04/1978-11/01/2008) which is less conservative and widely different than the project duration. Hence the same may be considered appropriate against the assessment period chosen for investment analysis.

The data vintage of 17 years is used to calculate cost of equity which is comparable and appropriate for the project activity hence accepted. Issue closed satisfactorily.

iii. This value is now based on the latest average RBI Prime Lending Rate published at the time of investment decision. The same is checked and found satisfactory hence issue closed.

iv. The list of all companies listed and being traded on BSE is available on (http://www.bseindia.com/downloads/about/abindices/file/Indices.zip). Being a power project activity, only 'POWER' sector listed companies have been used for arriving at the list of similar companies. If the listing dates of these companies are looked at, only 16 companies were being traded on BSE at the time of decision making. Based on the justification provided for beta determination, it can be confirmed that Beta value considered to arrive benchmark is appropriate hence accepted.Issue closed satisfactorily.

v. In line with the quotation from WTG supplier, the PP has entered into an O&M agreement with Vestas for a period of 5 years from 2010-15. As and when 2015 arrives, a new O&M contract will be

entered into whose actual cost & escalation parameters are presently not available. Since the quotation also did not provide any clarity on O&M escalation beyond the 5th year, the MERC tariff order escalation value has been used for estimating O&M expenses beyond the 5th year. O&M expenses have now been subjected to sensitivity analysis in the revised PDD. As per the proposal technology supplier has provided escalation over O&M cost since commissioning to 5 years only. The same is verified from signed O&M agreement also, since the escalation rate after 5th year was not provided by WTG supplier hence the same is sourced from MERC tariff order available to PP at the time of investment decision.Anticipatiing the future variation in O&M cost, the same is included as parameter under sensitivity analysis. Hence this point is closed satisfactorily.

Response to all the concerns raised was found satisfactory. Hence CAR #15 was closed out appropriately. Detalied discussions have been provided in annex 3 under CAR #15.

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 is utilizing renewable wind energy to generate electricity which in-turn is supplied to NEWNE grid. The project has applied baseline methodology as mentioned in the small scale methodology AMS I.D version 17 “Grid connected renewable energy generation” as per appendix B of the simplified modalities and procedures for small scale CDM project activities.

The baseline emission factor used for calculation of estimated emission reductions has been referred from carbon dioxide baseline database (version 04)/15/ published by Central Electricity Authority, Government of India. The emission factor for the NEWNE grid has been considered in emission reduction calculation. The Central Electricity Authority provides the data which can be referred at the link: http://www.cea.nic.in/reports/planning/cdm_co2/user_guide_ver4.pdf thus the same was accepted. The revised PDD has mentioned the weighted average grid emission factor of 0.9075 tCO_2/MWh for the NEWNE grid and the same was checked with the latest version of CEA at the time of PDD submission for validation. The emission factor has been fixed ex-ante.

The baseline emissions have been calculated in line with the applied methodology AMS I.D version 17/6/. The project activity will not result in any project emissions. Also as no energy generating equipment is transferred from another project activity, leakage emissions have been assumed to be zero.

The emission reduction calculations have been checked, the baseline methodology is applied correctly to calculate emission reductions. Estimated emission reductions from project activity are 5729 Tco2e.

CL#05 was raised asking the PP to mention equations used and assumptions made in calculating the Baseline, Project and Leakage emissions in section B.6 of the PDD. PP was also requested to specify the data source and discuss appropriate references. In response, the PP included calculation of emission factor and defined all parameters in the PDD. The PP also corrected the calculations in PDD and made it consistent with emission reduction calculation sheet. The calculation in final PDD and emission reduction calculation were found correct and in line with applied methodology. Thus issue CL#05 was closed. Detailed discussions have been provided in annex 3 under CL #05.

4.9 Application of Monitoring Methodology and Monitoring Plan

The present project activity uses monitoring methodology AMS I.D version 17 “Grid connected renewable energy generation”/6/. The description towards the ex-ante parameters available at validation in the section B.6.2 of the PDD has been checked and is in accordance with the project scenario. This is further validated that the data has been well calculated and/or referred to traceable and credible sources.

The project proponent has also provided the clear description towards the data and parameter required to be monitored at the ex-post scenario in the final PDD[/1/], which has been cross checked and found complete and in line with AMS I.D version 17.

The PP has mentioned following data and parameters to be monitored in the section B.7.1 of the PDD[/1/] which have been validated and found correct:

1. Net units of electricity due to substituted in the grid during the period y, **$EG_{BL,y}$** (MWh): The net electricity exported from the project activity to the grid will be a calculated component, this is inline with the SSC WG clarification 371[/34/] on the applied methodology. The calculation procedure mentioned in annex 4 of PDD[/1/] has been checked and found ok. Energy meters installed at the sub-station of the state electricity board will measure the total electricity exported and imported by the WTGs connected to same metering point. The difference of 'electricity exported' and 'electricity imported" by the project activity will give the net electricity supplied by all WTGs to the grid. The electricity exported by each project WTG can be calculated by taking difference of electricity generation and import by each WTG from controller located at each WTG. Joint meter readings will be carried out monthly by the project proponent, state board official and an official from the EPC contractor.
2. Gross units of electricity exported to grid from feeder during the period y **$EG_{y,exp}$ (**MWh): The electricity exported to the state electricity board will be continuously measured from the energy meter and these readings are manually reported on monthly basis in the joint meter reading sheets. Energy meter of accuracy class 0.2 is used for the purpose of monitoring this parameter. The meter will be calibrated on yearly basis.
3. Units of electricity imported from grid from feeder during the period y, **$Eg_{y.imp}$ (**MWh): The electricity imported from the state electricity boards will be continuously measured from the energy meter and these readings are manually recorded on monthly basis in the joint meter reading sheets. Energy meter of accuracy class 0.2 is used for the purpose of monitoring this parameter. The meter will be calibrated on yearly basis.
4. Net Export as per Project WTG Controller (**$EG_{PR\_Controller,y}$**): The total electricity generated and imported by individuals WTGs under the project activity will be continuously measured using integrated electronic meters which are connected to CMS (central monitoring station). The data is recorded in the log books on a monthly basis. The net export is equal to the difference of electricity export & import as recorded in controller of WTGs under project activity.
5. Total Export as per WTG Controller **($EG_{All\_Controller,y}$)** will be continuously measured using integrated electronic meters which are connected to CMS (central monitoring station). The data is recorded in the log books on a monthly basis. This parameter is summation of electricity generated (exported) by projects WTGs.

The type of metering equipment, procedure of meter reading, meter testing, and calibration has been described in section B.7.2 of the PDD[/1/] and is consistent with the PPA signed[/11/] specifically for this project activity.

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 2 years after the end of the crediting period.

The validation team confirms that the description in the PDD[/1/] 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.

Vestas, the O&M contractor for the WTGs has experience in monitoring and managing the O&M of numerous other wind farm 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.

CAR#07 was raised asking the PP to include all relevant monitoring parameters in PDD as the monitoring plan in webhosted PDD was found incomplete and not sufficient to accurately monitor the emission reductions. In response, the PP included **$EG_{y,exp}$, $Eg_{y.imp}$, $EG_{PR\_Controller,y,}$, $EG_{All\_Controller,y}$** as monitoring parameter under section B.7.1 of PDD. The PP also included combined margin emission factor in section B.6.2 of the PDD. The monitoring procedures for individual parameters were found to be complete in final PDD. Hence CAR#07 was closed satisfactorily.

CL#08 was raised asking the PP to include QA/QC procedures, management review procedures, and details on internal audit in the PDD. In response the PP updated the monitoring plan to include necessary details in the PDD. The final PDD contains details on type of metering equipment, procedure of meter reading, meter testing, and calibration has been described in section B.7.1. Details on internal audit and performance review are included in section B.7.2 of PDD. Hence CL#08 was closed.

CL#09 was raised asking the PP to provide details on training of monitoring personnel. In response, the project clarified that HPPL has signed O &M contract with the technology supplier-Vestas. The technology supplier in a separate mail confirmed that training related to O&M of WTGs, fire fighting, basic safety training and rescue from height training to all its monitoring personal. Hence this issue was closed.

CL#10 was raised asking the PP to clarify date of completion of baseline and monitoring methodology as the date (12/09/2007) does not fall with in the time line of the PDD history. In response the PP corrected the typographical error and put the correct date (12th Sep 2008). Thus CL#10 was closed.

4.10 Environmental Impacts

As mentioned in the section D.1 of the PDD, the project activity is in line with all the rules and regulations for the conservation of environment. The Ministry of Environment and Forest, Government of India does not require Environment Impact Assessment (EIA) for this kind of project. The weblink for the notification http://envfor.nic.in/legis/eia/so1533.pdf has been also cross verified which is inline with the information provided in the PDD. The project activity has positive impacts on environment being a renewable energy project. There are no negative environmental impacts envisaged from the project activity.

4.11 Local Stakeholder Comments

The project proponent has notified several identified local stakeholders for the proposed project activity and conducted local stakeholder consultation process on 29th Nov 2008. The local stakeholders including local government stakeholders, DNA GOI, MSEDCL, HPPL employees and Vestas were invited by sending notice/27/ to individuals and organisation. The local stakeholder consultation process was conducted at 09:00 AM on 29th Nov 2008/27/ at Revangaon, Dist. Sangli, and Maharashtra. The notice sent to local stakeholders and minutes of local stakeholder consultation was checked and it has been found that no negative comments have been received from the stakeholders. The attendance sheet/27/ was also checked and was found to be sufficient.

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/1/. The villagers also confirmed that they were invited for the meeting through invitation letters. This was found to be consistent with the invitation process mentioned in the PDD/1/.

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.

According to the requirements of the paragraphs 128-130 of the VVM version 01.2 (EB 55 Annex 1)/5/, the validation team is of the opinion that the local stakeholder consultation process has been satisfactorily carried out.

CL#11 was raised asking the PP to provide an English translation of the notice circulated to invite local stakeholders as original notice was circulated in Marathi (local language). The client was also requested to provide comments of local stakeholders and attendance sheet of the meeting. All relevant documents were provided by HPPL, the authenticity of which was checked through interview with local stakeholders during the site visit. Hence, the CL #11 was closed.

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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/HGLLOEUONKY04SLAM4HWI4IBQ79Y10/view.html* and was open for comments from 27th Jan 2009 until 25th Feb 2009 Comments were invited through the UNFCCC CDM homepage

5.2 Compilation of all Comments Received

Comment Number	Date Received	Submitter	Comment
00	N/A	N/A	N/A

5.3 Explanation of How Comments Have Been Taken into Account

No comment is received in international consultation process.

6. List of Persons Interviewed

Date	Name	Position	Short Description of Subject Discussed
25/03/2009	Mr. Gautam Choksi	Vice President-Finance-HPPL	-Project Management -Project funding -HPPL managements awareness about CDM
25/03/2009	Ms. Dipti Kittur	Manager-Production-HPPL	-Local Stakeholder Consultation -Host Country Approval
25/03/2009	Mr. Dipjay Sanchania	CDM Consultant-	-Baseline -Additionality demonstration -Monitoring procedures -Quality assurance and Quality control procedures

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 08 dated 11/05/2012 (final version)
/1.a/ Previous Versions of PDD:
PDD version 01 dated 19th Jan, 2009 and the subsequent versions dated 23/04/09, 03/08/09, 04/05/10,03/03/2011, 15/09/2011, 12/10/2011,
/2/ Letter of Approval (Ref. No: 4/27/2008-CCC & dated 27/01/2009) issued by Indian DNA to the project participant-M/s Hindustan Platinum Pvt. Ltd. And Minutes of Meeting dated 17/11/2008 between Officials of Indian DNA and PP
/3/ IRR spreadsheet version 08 (final version)
/3.a/ Previous versions of IRR spreadsheet:
IRR spreadsheet version 01, version 02, version 3, version 4, version 05,version 06, version 07
/4/ Duly filled and signed Modalities of Communication dated 20/10/2011

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
PDD version 01 (Webhosted PDD)	19/01/2009	-
PDD version 02	23/04/2009	-Emission reduction figure corrected in section A.4.3 -Input values used in IRR analysis included in section B.5 -WACC calculation corrected in section B.5 -Sensitivity variations results included in section B.5 -Combined margin emission factor included in section B.6.2 -Emission reduction figure corrected in section B.6.4 -Monitoring parameters included in section B.7.1
PDD version 03	03/08/2009	-Section B.7.2 is updated to include data recording procedures
PDD version 03.1	04/05/2010	-PDD is updated in line with version 15 of AMD ID -Emission reductions re-calculated and corrected -IRR recalculated and PDD is updated to reflect the same -Barriers other than investment barrier removed from the PDD
PDD version 04	03/03/2011	-In accordance with issues raises, IRR and WACC were recalculated and PDD was updated
PDD version 05	15/09/2011	-Minor editorial changes and font corrected in PDD
PDD version 06	12/10/2011	-Minor editorial changes in PDD
PDD version 07	16/04/2012	PDD is updated in line with latest version of methodology AMS I.D version 17
PDD version 08	11/05/2012	Section B.5 is updated in line with comments received from UNFCCC during information and reporting check.

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 'Grid connected renewable electricity generation' version 17.
/7/	Tool to calculate the emission factor for an electricity system (Version 02.2.1, EB 63, Annex 09)
/8/	Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM

	project activities
/9/	Guidelines for completing the simplified project design document (CDM-SSC-PDD) and the form for proposed new small scale methodologies (CDM-SSC-NM) version 05.
/10/	Commissioning certificate for R8 WTG (ref. No: SE/SC/T/AE[C]/2760) dated 10th April 2008 and Commissioning certificate for R22 WTG (ref. No: SE/SC/T/AE[C]/2761) dated 10th April 2008
/11/	Power Purchase Agreement (PPA) for R8 WTG (ref. No: BA983514) dated 08th Aug 2008 and R22 WTG (ref. No: BA099080) dated 16th Jul 2008.
/12/	Land lease deed dated 23rd Jan 2008 and MEDA clearance (ref. No: PGN-I/IC/Hindustan Platinum/3.30 MW/07-08/1920) dated 31st Mar 2008.
/13/	Purchase order for WTGs dated 16th Jan 2008
/14/	Letter on no Official Development Assistance received dated 07th Oct 2008
/15/	CEA database version 04 available at http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm
/16/	O&M agreement for WTGs with Vestas dated 16th Jan 2008.
/17/	Loan sanction letter (ref. No: Worli/Adv/44/758) dated 15/07/2005 issued by Bank of Baroda approving loan of INR 14.00 crores for wind mill project at Andhiyur, Dist. Coimbatore, Tamil Nadu. Loan sanction letter dated 29th August 2008 issued by HDFC Bank for the proposed CDM project activity.
/18/	Copy of board resolution passed in the meeting of the board of directors on Hindustan Platinum Pvt. Ltd. Held at 11:00 AM on Friday, 11th Jan 2008 at the registered office at C-122 TTC Industrial Area, Pawane, Navi Mumbai 400703 of M/s Hindustan Platinum Pvt. Ltd. Approval dated 14th Jan 2008 for 3.3 MW wind power project by Mr. Gautam Choksi (authority at M/s Hindustan Platinum Pvt. Ltd.).
/19/	Report (dated 31st July 2010) on Generation & P.L.F. estimation of Vestas make WTG. (V-82/1.65 MW) at Bhud site in Maharashtra for M/s Hindustan Platinum Pvt. Ltd. Prepared by third party Fair Aero Consultant & Technologist.
/20/	Wind Tariff order dated 24th Nov 2003 released by Maharashtra Electricity Regulatory Commission.
/21/	Glossary of CDM terms, version 06
/22/	EB 62 Annex 13-Guidelines on the demonstration and assessment of prior consideration of the CDM (version 04)
/23/	Project Design Document of registered project UNFCCC Ref 310 available at http://cdm.unfccc.int/UserManagement/FileStorage/QHZU5CN321RNIWYQQ8DGK5HHYO9BBC
/24/	Quotation for WTGs from Vestas dated 13th December 2007
/25/	Mail communication between CDM consultant and M/s Hindustan Platinum Pvt. Ltd. Dated 28/01/2008.
/26/	Contract between HPPL and CDM Consultant dated 04th April 2008 for CDM Advisory Services.
/27/	Local stakeholder consultation process minutes of meeting dated 29th Nov 2008 and attendance sheet signed by stakeholders who participated in the activity. Notice circulated to local stakeholders.
/28/	Signed contract dated 23rd Dec 2008 between HPPL and SGS UK Ltd.
/29/	http://cdm.unfccc.int/Projects/Validation/DB/HGLLOEUONKY04SLAM4HWI4IBQ79Y10/view.html
/30/	Registered project UNFCCC Ref. no: 4223 http://cdm.unfccc.int/Projects/DB/Germanischer1291989296.33/view Registered project UNFCCC Ref. No: 4475 http://cdm.unfccc.int/Projects/DB/BVQI1297243746.22/view
/31/	EB 51 Annex 58 and EB 62 Annex 5-Guidelines on the assessment of investment analysis

/32/	Centre of Wind Energy Technology (C-WET) report (http://www.cwet.tn.nic.in/html/information_gi.html)
/33/	Risk Free Return (ref: http://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/82069.pdf) RBI official website (ref: http://rbi.org.in/scripts/BS_ViewBulletin.aspx)
/34/	SSC WG clarification (Ref. No:371) on AMS I.D version 15 http://cdm.unfccc.int/methodologies/SSCmethodologies/clarifications/40371
/35/	BSE(Bombay stock exchange) India (Ref :http://www.bseindia.com/stockinfo/indices.aspx)
/36/	Capitaline Database (Ref: http://www.capitaline.com/new/index.asp)
/37/	Corporate Finance Theory by Ashwath Damodaran (ref: http://archive.nyu.edu/bitstream/2451/26906/2/wpa99019.pdf) Investment Management: A modern guide to security analysis and stock selection (ref: http://books.google.co.in/books?id=oowq_PkME3UC&pg=PA84&lpg=PR1)
/38/	Interest rate on term loan(cost of debt) (ref: http://www.rbi.org.in/scripts/WSSView.aspx?Id=11936)

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A.1 Annex 1: Local Assessment

This checklist is designed to provide confirmation of in-country data and information provided in the Project Design Document for Wind Power Project of Hindustan Platinum in 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?**
The Modalities of Communication for the project activity should be submitted by the Project participant before submitting a request for registration.	The PP is requested to provide the letter on Modalities of communication.	MoC	CL12 (a) CL 12(a) is closed. (Refer Annex 3)
The applicable ownership documents or licenses which allow the project participant to implement the project at that mentioned site	The applicable ownership documents (land agreements) are being provided by the PP.	Land details and agreements	No
As mentioned in the PDD no public funding has been identified. Please provide supportive documents for the same.	Please provide an undertaking on no ODA received.	Declaration from PP on ODA	CL12 (b) CL 12 (b) is closed. (Refer Annex 3)
The purchase orders along with technical specifications of the installed equipments (WTGs) needs to be checked during site visit.	The purchase order of WTGs have been provided by the PP.	Purchase order for 2*1.65 MW WTGs.	No
The compliance of the mentioned information in the PDD with actual situation or	The project activity has been implemented as per the information mentioned in the PDD.	Site visit	No

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
planning needs to be checked during site visit.			
The procedure carried out for the Local Stakeholder Consultation Process will be verified during site visit. Identified local stakeholders will be interviewed and their feedbacks regarding the project activity need to be cross checked during the site visit.	PP has circulated a notice in local language (Marathi) to invite the stakeholders for the local stakeholder's consultation process. However the date of issuance/circulation is not mentioned on the notice. Please provide the notice in the English language to understand and interoperate the information mentioned in it. The date of issuance/circulation of the notice should be specified on it. Please provide the details of the comments/issues raised and summarized discussion of stakeholder consultation process.	Local Stakeholder Consultation process documents (Minutes of meeting, attendance sheet)	CL 11 CL 11 is closed. (Refer Annex 3)

A.2 Annex 2: Validation Checklist

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

Requirement	Reference	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 1.2 (from this point forwarded referenced as VVM) - 49a-d /54a-b/125 Paragraph 37 CDM Modalities and procedures	The Party (India) has ratified the Kyoto Protocol on 26 August 2002 and is allowed to participate in the CDM project activity. The web link is http://maindb.unfccc.int/public/country.pl?country=IN No annex I Party is involved in the proposed CDM project activity at the stage of Registration. The Project will assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment. The project activity is likely to contribute to sustainable development of the non-Annex I Party, India Letter of approval issued by Host Country (India) Designated National Authority (DNA) to be submitted by the project proponent.	CAR01 Letter of approval from the host country has been provided by the PP. Hence this issue is closed.
1.2. The letter/s of approval are unconditional with respect to 1.1.1 to 1.1.4 above	VVM Para. 49/54	Letter of approval can be issued from the Indian DNA. Pending site visit.	Pending Issue closed

Requirement	Reference	Comments	Conclusion/CARs/CLs
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 PDD has been web-hosted in the UNFCCC website for invitation of comments on the project activity as the global stakeholder consultation process: Website: http://cdm.unfccc.int/Projects/Validation/DB/HGLLOEUONKY04SLAM4HWI4IBQ79Y10/view.html Start date: 27/01/09 Close date: 25/02/09 Number of comments received: Nil	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 project has used version 3 of CDM-SSC-PDD format correctly.	Y
4. The project participants shall submit a letter on the modalities of communication (MoC) before submitting a request for registration	EB-09 F_CDM_REG form	The Modalities of Communication for the project activity should be submitted by the Project participant before submitting a request for registration. MoC received, CL12(a) is closed.	CL12(a) Closed

Table 2PDD

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
A. General Description of Project Activity				
A.1. Project Title				
A.1.1. Does the used project title clearly enable the reader to identify the unique CDM activity?	VVM Para.56 Guidelines for completing a CDM-PDD (PDD) section A.1	DR	The project title 'Wind Power Project of Hindustan Platinum in Maharashtra' mentioned in the PDD clearly enables to identify the unique CDM activity.	Y
A.1.2. Is there an indication of a revision number and the date of the revision?	VVM Para.56 PDD section A.1	DR	The webhosted PDD indicates Version number: 01, Date: 19/01/09 under section A.1 in the PDD.	Y
A.2. Description of the Project Activity				
A.2.1. Does the description of the proposed CDM project activity as contained in the PDD sufficiently cover all relevant elements accurately?	VVM Para.59 PDD section A.2 see also A.4, A.4.3 and B.3	DR	The project activity involves the installation of 2 Wind Turbine Generators (WTGs) of 1650 kW each. The technology used in the project activity is supplied by Vestas Wind Technology India Pvt. Ltd. The electricity produced by the WEGs will be supplied to the Maharashtra State Electricity Distribution Company Limited (MSEDCL). The electricity produced by the wind energy will be replacing the electricity in the local grid usually generated by burning fossil fuel(s). The project activity assists in greenhouse gas (GHG) emission reductions by avoiding CO2 emissions from electricity generation, which would have been generated by fossil fuel based power plants.	Y
A.2.2. Does the information provide the reader with a clear understanding of the proposed CDM activity?	VVM Para.60 PDD section A.2 see also A.4, A.4.3 and B.3	DR	The project activity demonstrated in the PDD provides clear picture about the technology implemented.	Y
A.2.3. Is all information provided consistent and in compliance with the actual situation or	VVM Para.64 PDD section A.2 see also A.4,	DR/SV	The actual situation of the project activity needs to be checked during site visit. The actual situation of the project activity is in compliance with the information mentioned in the PDD. The same information has been verified during the site visit.	Pending site visit Issue

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
planning?	A.4.2 and B.3			Closed
A.2.4. Is all information provided consistent with details provided in further chapters of the PDD?	VVM Para.64 PDD section A.2	DR	All information towards description of project activity, provided consistent with details provided in further chapters of the current version of the PDD.	Y
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 table (under section A.3 of the PDD version 01) used for the indication of project participants has been applied correctly. India is the host party for the proposed project activity and M/s Hindustan Platinum Pvt. Ltd is the Project participant involved.	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	All the information regarding project participants is consistent with details provided by further chapters of the PDD (in particular annex 1: contact information on participants in the project activity).	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 project activity is located in Village Revangaon, Taluka Khanapur, District Sangli, Maharashtra. Geographical coordinates of the project activity are clearly mentioned in the PDD. The location of the proposed project activity site has needs to be further validated during validation site visit. The location of the project activity has been verified during the site visit and is found to be in line with the information mentioned in the PDD.	Pending Site Visit Issue Closed
A.4.2. Does the proposed CDM project activity involve the alteration of existing installations or	VVM Para.64 PDD section A.4	DR	The project activity involves installations of new wind turbines; it does not involve the alterations of existing installations or process.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
process?				
A.4.3. Do the project participants possess ownership or licenses which will allow the implementation of the project at that site / those sites?	VVM Para.64 PDD section A.4	DR	The applicable ownership documents or licenses which allow the project participant to implement the project at that mentioned site needs to be checked during site visit. Ownership document, land clearance document have been checked and found ok.	Pending site visit/LAC Closed.
A.4.4. Is the category(ies) of the project activity correctly identified?	VVM Para.64 PDD section A.4	DR	As mentioned in section A.4.2 of the PDD, the project falls under Type 1- Renewable Energy Projects and Category I.D- Grid Connected Renewable 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	DR	The compliance of the information mentioned in the PDD with the actual situation or planning will be verified during the site visit.	Pending site visit 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	The table for the indication of projected emission reductions is correctly applied. However, GHG emission reduction mentioned in section A.4.3 is 54940 tons, which does not match with the value specified in the subsequent table. Please Clarify. The error is corrected as 57290 tonnes of CO_2e in revised PDD. CL 02 is closed.	CL02 Closed.
A.5. Debundling				
A.5.1. Is the small-scale project activity a debundled component of a large scale project activity	VVM Para. 134c	DR	There are no projects in 'registered or request for registration' category on UNFCCC website with same PP name or project title which in within 1 Km of project boundary. Hence the project is not a debundled component of a large scale project activity.	Y
A.5.2. If the project is a debundled component of a larger project, does the larger project fall within the limits for	VVM Para. 134c	DR	Please refer above section.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
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 mentioned in the PDD no public funding has been identified. Please provide supportive documents for the same. Declaration PP on No ODA received has been taken from PP. CL12(b) is closed.	Pending/LAC CL12(b) is 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	The Information provided in Annex 2 of PDD is consistent with details in section A.4.4 of the PDD. No public funding is involved.	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	Please refer above sections	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	The PDD has been developed on the guidelines of 'Approved small scale methodology AMS I-D, version 17'. The same information is mentioned in section B.1. of the PDD	Y
B.1.2. Has the methodology (incl. the tools) been altered from the original	VVM Para.69 PDD section B (B.1-B.2)	DR	The methodology AMS I.D version 17 has been used in its original format, no deviation from approved methodology has been observed.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
version as referenced in the PDD?				
B.1.3. Does the project activity qualify as small scale project?	VVM Para. 134a	DR	The maximum capacity of the wind project is 3.3 MW, which is well below the 15 MW mark defined for the small scale projects. Therefore the project activity qualifies as small scale project.	Y
B.1.4. Is the category(ies) of the project activity correctly identified in accordance with Appendix B to the simplified modalities and procedures for small-scale CDM project activities?			In accordance with Appendix B to the simplified modalities and procedures for small-sclae CDM project activities, the project falls in 'Scope I - Renewable Energy Projects & Category D- Grid connected renewable electricity generation'.	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 applicable methodology AMS I.D version 17 is applicable to the project scenario.	Y
B.1.6. Does the project activity conform to one of the approved small-scale categories?	VVM Para. 134b	DR	Please refer section B.1.4 above.	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/SV	The project activity involves installation of two 1650 kW wind turbine generators at the same location (village). The project is not a bundled activity of several small scale activities.	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	Please refer section B.1.7 above.	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	Please refer section B.1.7 above.	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	The project activity is a wind mill project of 3.3 MW capacities; hence it can be classified under small scale category.	Y
B.2. Project Boundary				
B.2.1. Are all emission sources and gases related to the baseline	VVM Para.79/76 /67a PDD section B.3	DR/SV	The pictorial representation of the project boundary in shown in section B.3 of the PDD. The project boundary included all the relevant components of the project activity. No other source of GHG emission other than mentioned in PDD are identified at project	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.			site.	
B.2.2. In case of grid connected electricity projects: Is the relevant grid correctly identified in accordance with the tool to calculate emission factor of electricity system (wherever applicable) and the underlying methodology?	VVM Para.79 PDD section B.3	DR	The generated electricity is fed into the NEWNE grid through the local grid i.e. to MSEB distribution lines.	Y
B.2.3. Does the project boundary include the physical delineation of	VVM Para.78/79 PDD section B.3 also see section	DR	Yes the pictorial representation of the project boundary is being shown in section B.3 of the PDD.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
the proposed CDM project activity?	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	The project boundary is defined as per AMS I.D version 17.	Y
B.3. Identification of the Baseline Scenario				
B.3.1. Does the PDD discuss the identification of the most likely baseline scenario? Does the PDD follow the steps to determine the baseline scenario required by the methodology and is the application of the methodology and the discussion and determination of the chosen baseline transparent?	VVM Para.67b.80/82/86 PDD Section B.4/B.5	DR	The most likely baseline scenario has been identified by the PP as per methodology AMS I-D, version 17.	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 and credible baseline	VVM Para.81/82/86a-d/83/84 PDD Section B.4/B.5	DR	The combined margin is calculated as the weighted average of Operating margin and Build margin, as per latest version of "Tool to calculate the emission factor for an electricity system". The tool has been correctly applied to calculate the baseline emission factor.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
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	The Operating and Build Margin emission factors for calculating the Combined margin has been referred from the "Baseline Carbon Dioxide Emission Database Version-4 Dated-Sep 2008" developed by CEA India. The values applied are 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	Yes the conservative approach has been followed to identify the baseline.	Y
B.3.5. Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	VVM Para.90/91 PDD Section B.4/B.5	DR	The most likely baseline scenario has been identified by the PP as per methodology AMS I-D, version 17.	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	Please refer above section	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.67d/95 PDD Section B.1/B.4/B.5	DR	The Additionality for the project activity has been demonstrated as per 'non binding best practice examples to demonstrate additionality for SSC project activities – EB35 annexure 34	Y
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	The Additionality has been demonstrated as per Attachment A to Appendix B "Indicative simplified baseline and monitoring methodologies for selected small scale CDM project activity categories". All the steps are transparently followed.	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 to all available data and documentation?	VVM Para.93/91 PDD Section B	DR	Below mentioned supportive documents are required: 1. Please provide the WACC, CAPM & IRR calculation sheets. 2. Please provide the objective evidence for all the assumptions and justifications made for the investment analysis mentioned in the section B.5 of the PDD. 3. Please provide the sensitivity analysis calculation sheet. 4. Please provide justification for the choice of PLF value used. 5. Please provide necessary evidences and documents for the arguments mentioned under the following sections: • Section 1.4 "Poor Financial Health of MSEDCL" • Section 2 "Technological Risk" • Section 4. "Other barriers" 6. Data mentioned in section '3. Barriers due to prevailing practice', is not in line with the information mentioned on the websites, links for which have been provided in the PDD. 7. Please produce the necessary documents for the Power purchase agreement for	CAR03 Closed. And CAR #15 closed.

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			fixing up the tariff for power sale to the grid. All issues raised have now been closed. Please refer Annex 3 of AR6.	
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	The start date of the project activity as per PDD version 01 is 16/01/2008. Please provide documentary evidences for the serious CDM consideration. CAR 04 is closed. Please refer Annex 3 for more details.	CAR04 Closed.
B.4.5. If an investment analysis has been used, has it been shown that the proposed project activity is economically or financially less attractive than at least one other alternative without the revenue from the sale of CERs?	VVM Para. 106, 107, 109 112a-c PDD Section B.5	DR	The investment analysis has been done to prove the Additionality of the project. The PP has been requested to provide the financial calculation sheets and other supportive documents. Pending closure of CAR03. CAR 03 is closed, Please refer Annex 3.	Pending Closed
B.4.6. If a benchmark is used, is it ensured that it is selected in accordance with the requirements of the tool /methodology and it	VVM Para. 110 PDD Section B.5		Pending closure of CAR03 CAR 03 is closed, Please refer Annex 3.	Pending Closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
represents standard returns in the market (not linked to the subjective profitability expectation or risk profile of a particular project developer).				
B.4.7. If a barrier analysis has been used, has it been shown that the proposed project activity faces barriers that prevent the implementation of this type of proposed project activity but would not have prevented the implementation of at least one of the alternatives?	VVM Para. 114 115a-b/116 PDD Section B.5		The PP has been requested to provide the credible evidences to prove the Additionality of the project and to justify the arguments mentioned. Pending closure of CAR03 CAR 03 is closed, Please refer Annex 3.	Pending 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	DR	Yes the discussion is consistent with identified with baseline scenario.	Y
B.4.9. Do the identified baseline scenarios include technologies and practices that include outputs or services comparable with the proposed CDM project activity. Do they	VVM Para. 105 PDD Section A.4.2/B.5	DR	There are no regulations on implementation of wind energy projects in India. 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	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
also abide by the same applicable laws and legislations?				
B.4.10. Has it been shown that the project is not common practice?	VVM Para. 119a/b PDD Section B.5	DR	Barriers due to prevailing practice analysis has been carried out by the PP. CAR03 has already been raised in this regard. Additionality is demonstrated based on investment analysis, other barriers have been removed from the PDD. CAR 03 is closed, please refer Annex 3.	Pending Closed.
B.4.11. What are they key distinctions between the project activity and any similar projects that are widely used as common practice?	VVM Para. 118, 119c/d PDD Section B.5	DR	Please refer above sections. CAR 03 is closed.	Pending Closed.
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	Please clearly mention the equations used and assumptions made in calculating the Baseline, Project and Leakage emissions in section B.6 of the PDD. Clearly mention the values used, specify the source of data and provide necessary references. CL 05 is closed, refer Annex 3.	CL05 Closed. CAR #14 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	Please refer above section	CL05 Closed
B.5.3. Has the simplified methodology been applied correctly for	VVM Para. 91d PDD Section B	DR	Please refer above section	CL05 Closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
determining **leakage**?	(B.6.2 -B.71)			
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	Please refer above section	CL05 Closed
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	Please refer above section	CL05 Closed
B.5.6. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	PDD Sections B.5-C	DR	Please refer above section	CL05 Closed
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	DR	Yes, data is provided in compliance with applied methodology.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
	B.6.3B.6.4			
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	The Operating and Build margin emission factors have been referred from "Baseline Carbon Dioxide Emission Database Version-4" and are correctly applied.	Y
B.6.3. Is the vintage of the baseline data correct?	PDD Section B.6.3/B.6.4	DR	The data for calculating the emission factor has been referred from the Version 4 of the CEA report on Baseline Carbon Dioxide Emission database.	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 is correctly applied in the project activity.	Y
B.6.5. Are data and parameters that are not being monitored and remained fixed throughout the crediting period appropriately assessed, correct, and will they result in conservative estimates?	VVM Para. 90 PDD Section B.6.3/B.6.4	DR	Operating and Build margin data have been referred from CEA, India.	Y
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	Please provide the Emission Reduction calculation sheet. Please provide supportive documents for all the assumptions made. Provide necessary references. CAR 06 is satisfactorily closed, please refer Annex 3 for more details	CAR06 Closed
B.7.2. Are the emission reduction calculations documented in a	VVM Para. 91e PDD Section B.6	DR	Pending closure of CAR06 Emission reduction calculation is correct and in line with applied methodology in final version of PDD. CAR 06 is satisfactorily closed, please refer Annex 3 for more details.	Pending Closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
complete and 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	Please refer above sections	Y
B.7.4. Is the calculation of the emission reduction correct?	VVM Para. 91e PDD Section B.6	DR	Please refer above sections	Y
B.8. Emission Reductions				
B.8.1. Is the form/table required for the indication of projected emission reductions correctly applied?	PDD Section A.4.3/ Section B.6	DR	Yes the table required for the indication of projected emission reductions has been correctly applied.	Y
B.8.2. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	PDD Section A.4.3/ Section B.6	DR	The projected value of emission reductions for the crediting period has been mentioned in the table under section B.6.4. However this value does not match with the value mentioned in section 4.3 of the PDD. CL02 has already been raised in this regard. CL02 is closed	Pending Closed.
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	VVM Para. 67e PDD Section B.7-B.8 see also Annex 4	DR	The monitoring methodology is consistently applied in the PDD. The monitoring plan in registered PDD is complete with reference to the monitoring methodology.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
information provided by the PDD? Are all parameters and data that are available at validation consistent with the simplified methodology. Has this data been interpreted and applied correctly?				
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	Monitoring methodology is applied consistently.	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	The PP has been asked to list all the relevant parameters in the monitoring plan. CAR07 has been raised in this regard. OEM contractors are collecting daily reports for all the relevant parameters and pass it to Manager every month. Manager is responsible for all the record keeping. Internal audits and performance review of the collected data and emission reductions claimed yearly by the senior officials from Hindustan Platinum. CAR 07 is closed; refer Annex 3 for more information.	Pending Closed
B.10.2. Are the choices of project GHG indicators	PDD Section B.7-B.7.2/B.6.2	DR	Pending closure of CAR07.	Pending

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
reasonable and in conformance with the requirements set by the simplified methodology applied?			CAR 07 is closed; refer Annex 3.	Closed.
B.10.3. Will it be possible to determine the specified project GHG indicators?	PDD Section B.6.2-B.8	DR	All relevant monitoring parameters are included in PDD for accurate calculation of emission reductions.	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	DR	Information give for each monitoring variable is sufficient to ensure proper implementation of monitoring plan and to deliver high quality data.	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 refer section B.10.5 above	Y
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	Please refer section B.10.5 above	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.10.7. Are all formulae used to determine project emission clearly indicated and in compliance with the monitoring methodology.	PDD Section B.6.2-B.7.1		Formulae used to determine project emissions are in compliance with the applied methodology AMS I.D version 17.	Y
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	All relevant monitoring parameters are included in final PDD	Y
B.11.2. Is the belonging determination of uncertainty levels done correctly for each ID in a correct and reliable manner?	Refer to all data within the PDD Inc. B.4/B.7.2/Annex 4	DR	Information to determine monitoring parameter is sufficient to deliver accurate and high quality data.	Y
B.11.3. Are quality control procedures and quality assurance procedures sufficiently described to ensure the delivery of high quality data?	VVM Para 121	DR	Please clearly describe the procedure used (QA/QC, Management reviews, uncertainty level determination, internal audits) used to maintain the data quality and accuracy. These steps should be described separately for each of the monitored parameter. CL 08 is closed, refer Annex 3.	CL08 Closed.
B.11.4. Is it ensured that data will be bound to national or internal reference standards?	VVM Para. 86d	DR	The data for Operating and Build margin has been referred from the CEA, India. The data will be bound to the national standards.	Y
B.11.5. Is it ensured that data provisions will be free of potential conflicts of interests resulting in a	VVM Para. 19	DR	The monitoring plan is complete to deliver accurate and correct emission redutions.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
tendency of overestimating emission reductions?				
B.12. Operational and Management Structure				
B.12.1. Is the authority and responsibility of project management clearly described?	PDD Section B.8/Annex 1	DR/I	Director Finance is responsible for the overall project management. Manager is responsible for data handling.	Y
B.12.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD Section B.8/Annex 1	DR	Site supervisor from Vestas is responsible for operations, maintenance and data recording from the meters.	Y
B.12.3. Are procedures identified for training of monitoring personnel?	PDD Section B.8/Annex 1	DR	Please provide information on training of monitoring personnel. CL 09 is closed, procedures for training of monitoring personal are included in PDD. Refer annex 3.	CL09 Closed.
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	Monitoring plan mentioned in Annex 4 of PDD is same as in section B.7.2.	Y
B.13.2. Does the monitoring plan completely describe all measures to be implemented for monitoring all parameter required,	VVM Para. 122b	DR	Yes complete details on monitoring procedures for each monitoring parameter are included in PDD.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
including measures to 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	Details of energy meter are mentioned in PDD.	Y
B.13.4. Are procedures identified for calibration of monitoring equipment?	VVM Para. 122a-c	DR	The energy meters will be calibrated once in a year.	Y
B.13.5. Are procedures identified for maintenance of monitoring equipment and installations?	VVM Para. 122a-c	DR	The Manager is responsible for the operation and maintenance of the project activity. However operation and maintenance of wind generators will be done by Vestas.	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. 122a-c	DR	Data recording procedures for each monitoring parameter are mentioned in the PDD.	Y
B.13.7. Are procedures identified for dealing with possible monitoring data adjustments and missing data allowing	VVM Para. 122a-c	DR	Monitoring plan in final PDD is found to be complete.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
redundant 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.122a-c	DR/I	Internal audit procedures are in place to maintain the accuracy of the data reported. Internal audit will be performed once a year.	Y
B.13.9. Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	VVM Para. 122a-c	DR	Details on performance reviews are included in PDD.	Y
B.13.10. Describe the ability of the project participants to implement the monitoring plan.	VVM Para. 122c	DR	Vestas-the technical supplier is overall responsible for monitoring plan implementation. The PP has signed a contract from O & M with Vestas. Hence, PP is able to implement the monitoring plan.	Y
B.14. Baseline Details				
B.14.1. Is there any indication of a date when determining the baseline?	PDD Section B.8/Annex 3	DR	The date of completion of the application of the baseline study as 12/09/2007 has been provided under Section B.8 of the PDD.	Y
B.14.2. Is this consistent with the time line of the PDD history?	Also see revision history of the PDD	DR	The date of completion of the application of baseline and monitoring methodology 12/09/2007 does not fall with in the time line of the PDD history. Please clarify. CL 10 is closed, refer annex 3.	CL10 Closed.
B.14.3. Is all data required provided in a complete manner by annex 3 of	PDD Annex 3	DR	Data for the calculation of emission factor is mentioned in the 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	The start date of the project activity is 16/01/08 and expected operational life time of the project activity is state in the PDD as 20 year.	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	Considering the lifetime of WTGs as 20 years, PP has chosen a fixed crediting period of 10 years.	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	The project's operational lifetime of 20 years clearly exceeds the crediting period of 10 years.	Y
C.1.4. Does the start date indicate whether this is a new project activity or a pre-existing project activity?	VVM Para. 102a/ 98 PDD Section C.1.1/C.2.1.1	DR	The project activity has start date after 2nd Aug, 2008. This project is an existing project.	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	No EIA is required for small scale wind energy projects 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	A clear description of possible impacts on environment due to project activity has been described in the PDD.	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	Please refer D.1.1 section	Y
D.1.4. Will the project create any adverse environmental effects?	VVM Para. 131 PDD section D	DR	No the defined wind power project activity does 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	Refer section D.1.4 above	Y
D.1.6. Have identified environmental impacts been addressed in the project design?	VVM Para. 131 PDD section D	DR	Refer section D.1.4 above	Y
E. Stakeholder Comments				
E.1.1. Have relevant stakeholders been consulted?	VVM Para. 128a PDD Section E.1	DR/I	All relevant stakeholders have been consulted. Minutes of local stakeholder consultation process are checked and found ok. Local stakeholders were interviewed during the site visit.	Y
E.1.2. Have appropriate media been used to invite comments by local stakeholders?	VVM Para. 128a PDD Section E.1	DR	Notices and letters to invite various stakeholders for the meeting scheduled on 29th Nov. 2008, had been circulated 30 days prior to the above mentioned schedule. All the authentic documents have been checked and found ok.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
E.1.3. Is the undertaken stakeholder process described in a complete and transparent manner?	VVM Para. 128b PDD Section E.1	DR/I	Yes the local stakeholder consultation process has been conducted in complete and transparent manner.	Y
E.1.4. Is a summary of the stakeholder comments received provided?	VVM Para. 128b PDD Section E.2	DR	Yes, summarized comments are listed in the PDD.	Y
E.1.5. Has due account been taken of any stakeholder comments received?	VVM Para. 128b PDD Section E.3	DR	No negative comment identified in the PDD.	Y

A.3 Annex 3: Overview of Findings

Findings Overview Summary

	CARs	CLs	FARs
Total Number raised	08	07	00

Date:	08/04/2009		Raised by:	Assessment Team		
Type:	CAR	Number:	01		Reference:	Table 1-3
Lead Assessor Comment:				**Date:** 08/04/2009		
Please provide the Letter of approval issued by the Host Country (India) Designated National Authority (DNA) to the project proponent.						
Project Participant Response:				**Date:** 22/04/2009		
Copy of Host Country Approval letter is submitted to validation team						
Documentation Provided by Project Participant:						
Letter of Host Country Approval						
Information Verified by Lead Assessor:						
Requirements of paragraph 45 VVM version 01 in 'letter of approval' from Host Party.						
Reasoning for not Acceptance or Acceptance and Close Out:						
The Letter of 'Host country approval' has been submitted by the project proponent. The letter of approval refers to precise project title in the PDD. The 'letter of approval' fulfils requirements of paragraph 45 of VVM version 1.2. Hence CAR 01 is closed.						
Acceptance and Close out by Lead Assessor: CAR 01 closed				**Date:** 21/05/2009		

Date:	08/04/2009		Raised by:	Assessment Team		
Type:	CL	Number:	02		Reference:	A.4.6.
Lead Assessor Comment:				**Date:** 08/04/2009		
The table for the indication of projected emission reductions is correctly applied. However, GHG emission reduction mentioned in section A.4.3 of the PDD (Version 01) is 54940 tons, which does not match with the value specified in the subsequent table. Please Clarify.						
Project Participant Response:				**Date:** 21/04/2009		
Necessary changes have made in updated PDD						
Documentation Provided by Project Participant:						
Revised PDD						
Information Verified by Lead Assessor:						
Information on 'Estimated emission reductions' in section A.4.3. of the revised PDD.						
Reasoning for not Acceptance or Acceptance and Close Out:						
The value of total emission reduction is now consistently mentioned through out the PDD. Hence, CL 02 is closed.						
Acceptance and Close out by Lead Assessor: CL 02 is closed				**Date:** 21/05/2009		

Date:	08/04/2009		Raised by:	Assessment Team	
Type:	CAR	Number:	03	Reference:	B.4.3.
Lead Assessor Comment:			**Date:** 08/04/2009		
1. Please provide the WACC, CAPM & IRR calculation sheets. 2. Please provide the objective evidence for all the assumptions and justifications made for the investment analysis mentioned in the section B.5 of the PDD. 3. Please provide the sensitivity analysis calculation sheet. 4. Please provide justification for the choice of PLF value used.					

5. Please provide necessary evidences and documents for the arguments mentioned under the following sections:
- Section 1.4 “Poor Financial Health of MSEDCL”
- Section 2 “Technological Risk”
- Section 4. “Other barriers”

6. Data mentioned in section ‘3. Barriers due to prevailing practice’, is not in line with the information mentioned on the websites, links for which have been provided in the PDD.
7. Please produce the necessary documents for the Power purchase agreement for fixing up the tariff for power sale to the grid.

Project Participant Response:	**Date:** 21/04/2009

1. WACC, CAPM & IRR calculation sheets are provided to validation team.
2. Financial analysis is done based on the values provided by WTG supplier in their quotation. Copy of same is provided to validation team.
3. Sensitivity analysis calculation sheet provided to validation team.
4. PP has referred the registered project activity of similar nature in Maharashtra to understand common issues related to the project activity. (Please refer PDD of UNFCCC registration No. 1145)
5. Necessary corrections are being done.
6. Tariff was finalised in Power Purchase Agreement. Detail of the Tariff is given in Exhibit C of PPA. Copy of PPA is submitted to validation team.

Documentation Provided by Project Participant:

Financial Work sheet
Power Purchase Agreement (already submitted to validation team)
Quotation of WTG

Information Verified by Lead Assessor:

Financial, CER estimate, Sensitivity analysis calculations.

Reasoning for not Acceptance or Acceptance and Close Out:

A) Please respond to the below mentioned issues raised on arguments 1-3, mentioned above:

1. Please provide the DATE on which the financial calculations have been made. This should be clearly specified on the calculation sheet.
2. Please provide relevant documents to justify the estimated data used for the following parameters:
    a. Insurance cost
    b. Interest rate, repayment period and moratorium
3. As per the spreadsheet, the repayment on the term loan has been considered from the second year. However, the interest for the second year has been calculated after deducting the first repayment instalment from the principal amount. The same procedure is followed for interest calculation in the subsequent years as well. Please clarify.
4. Justify the value of Depreciation (as per companies act on SLM basis) used in the financial calculation.
5. Please give a suitable justification for accounting the IT Depreciation from the 0th year in the financial calculation. Also provide the reference for the value of Depreciation used.
6. The investment in the wind power project in Maharashtra is being done by the parent company Hindustan Platinum. Please provide a suitable explanation for not including Tax shield (and including MAT) in the financial calculation.
7. Net cash flow calculation in the spreadsheet is not as per the accounting standards. Please clarify.
8. Please provide a strong justification for the chosen BSE Index for calculating CAGR.
9. Beta is the measure of a stock's volatility with reference to the market index. It measures the risk associated with the stock as compared to the Index. Please clarify why the average beta value but

not the minimum value is considered in the financial calculation.

10. The beta value should be calculated for the period for which the CAGR is computed on the considered Index. Please justify the chosen 2007-2008 period for calculating the Beta value.
11. Please justify the value of 'Income tax during repayment (MAT)' used in the WACC calculation.
12. Please provide the relevance of data mentioned in last four spreadsheets (Data, units and Abb., Assumptions, transfers) in the calculation sheet.

B) The PP is requested to not to take any precedence of the registered project, as the conditions during project framing and development might be entirely different. Please provide necessary documentary evidences for the below mentioned arguments:

- Section 1.4: Poor Financial Health of MSEDCL
- Section 2: Technological Risk
- Section 4: Other barriers

C) As there are very few potential region in the country to generate wind energy (incl. governments regulation to use the barren land for wind energy generation), comparing the installed capacity of wind energy with total installed capacity in not a fair argument. Please demonstrate 'Barrier due to prevailing practise' with proper justification or demonstrate Additionality based only one chosen barrier.

Acceptance and Close out by Lead Assessor: CAR 03 is open	**Date:** 21/05/2009
Project Participant Response:	**Date:** 03/06/2009

A)

1. The financial calculation was done before the date on which board had decided for the investment in the project activity.

2. Cost of insurance and loan related parameters are as considered based on preliminary discussion with WTG supplier, bank officials and based on the PP's experience with earlier projects.

   a. Insurance cost was estimated based on the actual insurance cost of similar type of WTG owned by PP. This WTG was installed on 25/08/2005 which is prior to date of decision making for this project activity. Copy of insurance documents will be made available to validation team. Insurance cost of above reference WTG is Rs. 543,038 per year per WTG based on this value PP has considered Rs. 500,000 per year per WTG for financial estimation of the project activity under discussion.

   b. Value of interest rate i.e. 12.25% is commercial lending rate of State Bank of India (India's leading public sector bank) for the year 2006-07. Same can be checked from table 74 of "RBI Handbook on Indian Economy", a copy of same is submitted to validation team. Repayment period and moratorium is based on PP's discussion with banks and internal decision.

3. Repayment of loan is considered at the start of the period however interest is calculated on end of the period hence calculation of interest for a particular period is done after adjusting the repayment made during the period. Because of this interest for each year is calculated after deducting the repayment made during that year from the total outstanding.

4. Depreciation rate as per Companies Act considered in the financial calculation i.e.5.28% is as per prevailing rules. Same can also be verified by Schedule XIV.

5. Depreciation as per IT Act is as per the prevailing rules. Depreciation considered in the 0^{th} year is removed.

6. Net cash flow calculations are revised to meet the requirement of guidance on investment analysis.

7. BSE Sensex is leading index of Indian capital market and it was first compiled in 1986. Sensex is calculated on a "Market Capitalization-Weighted" methodology of 30 component stocks representing

large, well-established and financially sound companies across key sectors. Sensex today is widely accepted as bench mark in various financial calculations in both domestic and international projects. It is scientifically designed and is based on globally accepted construction and review methodology - "free-float market capitalization-weighted". This methodology is a widely followed index construction methodology on which majority of global equity indices are based; all major index providers like MSCI, FTSE, STOXX, S&P and Dow Jones use the free-float methodology. Thus BSE Sensex truly represents equity return in Indian markets and CAGR of same is considered for the calculation of WACC based on CAPM model.

8. As rightly understood, Beta is the measure of a stock's volatility with reference to the market index and It measures the risk associated with the stock as compared to the Index. Taking average of Beta values variance with minimum or maximum Beta can be reduces. Hence the average Beta value will provide more accurate risk compared to minimum beta value. Thus average Beta value is considered for the CAPM calculation.
9. Beta value for long period.
10. Justification for MAT rate
11. Worksheet titled “Data”, “units and Abb.”, “Assumptions”, “transfers” are part of Central Electricity Authority: CO_2 Baseline Database. Data from in these sheets is used for the calculation of Emission Factors given in the worksheet titled “Results”.

Documentation Provided by Project Participant:	

Insurance document of 1.65 MW Vestas make WTG commissioned on 25/08/05
Schedule XIV for depreciation rate as per Companies Act

Information Verified by Lead Assessor:

Section B.5 of the PDD.

Reasoning for not Acceptance or Acceptance and Close Out:

A) Please provide the revised financial calculation sheet addressing the issues raised.
B) The PP is requested to not to take any precedence of the registered project, as the conditions during project framing and development might be entirely different. Please provide necessary documentary evidences for the below mentioned arguments:

- Section 1.4: Poor Financial Health of MSEDCL
- Section 2: Technological Risk
- Section 4: Other barriers

C) As there are very few potential region in the country to generate wind energy (incl. governments regulation to use the barren land for wind energy generation), comparing the installed capacity of wind energy with total installed capacity in not a fair argument. Please demonstrate ‘Barrier due to prevailing practise’ with proper justification.

Acceptance and Close out by Lead Assessor: **CAR 03 is open**	**Date:** 17/08/2009
Project Participant Response:	**Date: 24/12/2009**

a) Updated IRR sheet is attached which has following updates,

   6. Tax shield is considered in the updated IRR sheet.
   10. Beta values used are from 01.01.2000 (earliest date from which beta values are available in CapitalLine Database) to 01.01.2008

b) Additionality section of PDD is updated. Also attached is copy of annual report of MSEDCL which demonstrates financial health of MSEDCL is not good.

c) The purpose of the project activity is to generate electricity hence for the PP can consider all the options for electricity generation. Hence, it is valid to compare total installed capacity of various type of power plants with total installed. Further, just like wind type of power generation has some of the other restriction i.e. for Coal you need to have better connectivity for coal supply; for Gas base power plant you need Gas availability, despite of these they are majority of the total installed capacity but wind is not. Hence, “Barrier due to prevailing practise” exists.

Documentation Provided by Project Participant:

Updated IRR sheet Annual report of MSEDCL
Information Verified by Lead Assessor:
Inputs values in IRR calculation and revised IRR sheet.
Reasoning for not Acceptance or Acceptance and Close Out:
1. The date of revision of IRR sheet is indicated on the spreadsheet now. Closed 2. The PP has not submitted the supportive documents for escalation on O&M cost, Insurance cost, repayment period and moratorium. Please submit. Further, the document submitted to justify the value of interest rate considered in IRR calculation has got no reference number/date of publication/author name. Please submit the original document. Also the interest rate in PDD version 03 and IRR sheet is not consistent, please clarify. Open 3. The interest rate calculation is inconsistent with the repayment schedule considered in IRR calculation. For e.g. the interest rate for year 2 is calculated considering that no repayment has been made in the same year. However, according to spreadsheet the PP has made repayment worth 526 lakhs. Please check the calculation of interest paid to bank. Open 4. The depreciation rate has been considered as per companies act, the same has been verified against Schedule XIV. Closed. 5. The IT depreciation for the 0^{th} year has been removed from IRR calculation. However, PP is requested to provide the reference for the 80% depreciation considered in tax calculation. Open 6. Tax shield has been included in IRR calculation, this has been checked and found OK. Closed 7. Net cash flow calculations are corrected and are now as per accounting standards. Closed. 8. CAGR is calculated based on BSE Index for the period 1991-2008. Jan'91 being the earliest date for which the data is available in BSE website and Jan'08 is the project decision date. Closed. 9. Average Beta value has been used in IRR calculation and found to be appropriate. Closed. 10. Beta values for the period 01.01.2000-01.01.2008 have been considered in CAPM calculation. The values have been checked from the snap shots submitted by the PP and found OK. Closed 11. The tax rate used in calculation of post tax cost of debt is not correct. The tax rate payable for the project is taken as 33.66%, please clarify why the same has not been used in the calculation of benchmark as well. Open 12. The irrelevant sheets have been removed from the spreadsheet. Closed 13. Please refer to clause 9.3 of supply agreement between Vestas and HP, machine & grid availability, transmission losses & uncertainty factors have already been accounted to arrive at the estimated average annual generation. Please clarify why these factors have been applied to calculate gross generation in IRR calculation. Open 14. Actual Interest Rate – Please provide details of previous investments made by the project developer in previous 3 years to demonstrate that the interest rate considered in the IRR calculation is in line with EB 51 Annex 58 para 11. Open 15. Since the commissioning date of project is 30th March, please clarify why the depreciation and the capital outflow are not claimed in the year of commissioning (Year 0 i.e. 2007-08). Instead, in the IRR calculations, depreciation and outflow is claimed in the 1st year of generation creating an inappropriate delay of tax savings and capital expense in the IRR calculations. While doing so please refer to depreciation guidelines for claiming depreciation if the project has run for less than 180 days in the 1st year. Open 16. Tariff rate after 14th year – It is not particularly clear why the tariff rate is reduced to Rs. 3.5/unit after 14th year. Please clarify. Open 17. Debt-Equity Ratio – Please provide relevant evidences to validate debt-equity ratio. Please also check the actual debt equity ratio. Open 18. Generation after 11th year – It is not clear how the generation after 11th year has reduced by 5%. Please provide relevant evidence. Open

19. As per section 18.02 of power purchase agreement, the seller (HP) can approach MERC for review of tariff structure once project becomes eligible for CDM or similar credits. In view of this clause. Please clarify why this tariff rate is not included in the sensitivity analysis for a realistic variation. Open

B) 1. Point 1.3- High Capital Cost is inconclusive in the PDD. If PP is considering 'high capital cost' of wind turbines as a barrier to the project, please demonstrate it as per the guidance in EB 50 Annex 13. Further, please clarify why a comparison is being made with coal/NG/diesel based power plants when these were not considered as plausible alternatives to the project activity. Open
2. Point 1.4- Poor financial health of MSEDCL is inconclusive in PDD. It is not particularly clearly why these statements have been made in the PDD. If this has been a barrier to the project activity then please demonstrate the existence of barrier as per paragraph 5 and 7 of EB 50 Annex 13. Open
3. As per the guidance in EB 35 Annex 34, PP is requested to clearly define the existing regulatory and policy requirements in the country that would have led to implementation of a technology with higher emissions. While explaining this in PDD, please consider all promotional policies granted for the implementation of wind energy projects by the Indian Government. Further based on the penetration on wind energy in India, please justify why power generation from wind is considered as a 'novel' technology and not a 'prevailing practise'. Open

Acceptance and Close out by Lead Assessor: **CAR 03 is open**	**Date:** 27/05/2010
Project Participant Response:	**Date:** 20/10/2010

2. Evidences for the various parameters, that is submitted to validation team, are as follows:
a) Escalation in O&M cost - Quotation for WTG supply from Vestas dated 13/12/2007. The same have been submitted to the DOE as a response to previous comments in this same CAR.
b) Insurance cost - Insurance documents of PP's previous projects in Tamil Nadu (INR 584,601 for 1 nos. Vestas 1.65 MW project in Tamilnadu). The same have been submitted to the DOE as a response to previous comments in this same CAR.
c) Repayment Period & Moratorium - Repayment period and moratorium is based on PP's discussion with banks and internal decision as responded to previous comments in this same CAR
d) Interest rate value in PDD & IRR sheet has been made consistent. The reference has been presented as a weblink in the revised PDD

3. Interest calculation has been corrected in the revised sheet. Since repayments are made at year end, hence, interest payable in year "y" has been calculated on the amount remaining after repayment in year "(y-1)". Thus, for example, interest paid in Year 4 is computed as the product of interest rate and amount remaining after 3 years of repayment.

5. The weblink to support the IT Depreciation rate has been provided in the revised PDD. IT depreciation has been used in 0^{th} year. Since, the project operates for less than 180 days in the 0^{th} fiscal (Commissioning on March 30), hence, 40% depreciation has been made in this year. From 1^{st} year onwards, depreciation rate of 80% has been used.

11. The corporate tax rate of 33.66% has now been used for benchmark determination

13. The losses provided in Clause 9.3 are applicable over and above the generation value provided in Clause 9.1 of the Supply Agreement. Hence, it has been calculated for use in IRR sheet. The same has been clarified by Vestas through e-mail communication. The same communication is forwarded to the DOE. Further, it may please be noted here that additionality demonstration is based on generation values mentioned in the quotation from WTG supplier rather than the supply agreement in accordance to Paragraph 6 of the latest version of "Guidelines on the assessment of investment analysis" (version 03, EB 51).

14. In the three years previous to investment decision of the project activity, there is only one instance where loan was sanctioned for wind power project. This was the PP's wind power project at Tamilnadu and in this case the loan was sanctioned at a rate of 1.50% below the Benchmark Prime Lending Rate (BPLR). At the time of investment decision of the present project, the BPLR was 13%. Hence, the interest rate for this project might be considered as 11.50%. The Tariff Order for Renewable Energy from Maharashtra Electricity Regulatory Authority proposes an interest rate of 13% (page 140 of 176). For the sake of conservativeness, the higher interest rate has been adopted in the IRR sheet.

15. IT depreciation has been used in 0th year. Since, the project operates for less than 180 days in the 0th fiscal (Commissioning on March 30), hence, 40% depreciation has been made in this year. From 1st year onwards, depreciation rate of 80% has been used.

16. The power purchase agreement (PPA) is valid for a period of 13 years. In the 14th year, a new PPA has to be signed. Based on prevailing guidelines, tariff rates for sale of power to grid is INR 3.50/kWh in the first year of the PPA term. Hence, the tariff value in 14th year has been considered as INR 3.50/kWh

17. Debt: Equity ratio has been extracted from Tariff Order for Renewable Energy from Maharashtra Electricity Regulatory Authority (page 140 of 176). The actual debt in the project is INR 150 million of total final project cost of INR 224 million which provides a debt:equity ration of 67:23

18. The 5% reduction is based on the assumption of generation derating contained in Tariff Order for Renewable Energy from Maharashtra Electricity Regulatory Authority (page 140 of 176)

19. As per the latest version of "Tool for the demonstration and assessment of additionality (Version 5.2)", impact of CDM registration is not a part of the process of additionality demonstration. Hence, clause 18.02 of the PPA has not been incorporated for demonstration of additionality

B) 1 - 3: The draft of additionality demonstration has been corrected in the revised PDD.

Documentation Provided by Project Participant:

2.
d) Tariff Order for Renewable Energy from Maharashtra Electricity Regulatory Authority

13. Email confirmation from Vestas for generation estimates

14. Loan Sanction of wind projects by PP in previous three years, The Tariff Order for Renewable Energy from Maharashtra Electricity Regulatory Authority

17.
a) Tariff Order for Renewable Energy from Maharashtra Electricity Regulatory Authority
b) Loan Sanction Letter for the present CDM project activity

18. Tariff Order for Renewable Energy from Maharashtra Electricity Regulatory Authority

Information Verified by Lead Assessor:

1. Quotation dated 13/12/2007 submitted to HP by Vestas;
2.

Reasoning for not Acceptance or Acceptance and Close Out:

The open comments are discussed below:

1. As per the quotation from Vestas dated 13/12/2007, the O & M cost will be INR 12 laks per WTG from second year, with an annual escalation of 7.5% from 3rd year upto 5th year. Please clarify why the O&M cost have been considered for the lifetime of the WTGs. Please also submit the documentary evidence for insurance cost, repayment period, moratorium and interest rate. Open.
2. The interest rate calculation has been made consistent with the repayment schedule in IRR calculation. Closed.
3. IT Depreciation for 0th year has been considered as 40% and 80% for subsequent years. This has been found correct by the financial expert. Closed.
4. Corporate tax rate of 33.66% has now been used in the calculation of post tax benchmark. Closed.
5. Please provide quotation provided by vestas. open
6. Inline with para 11 of EB 51 Annex 58, please clarify why the actual interest rate has been not used in the calculation of income tax and benchmark. Further, please clarify why an interest rate 14% was used in the webhosted PDD. PP is requested to provide the authentic document to support interest rate at which loan is sanctioned. Open.

7. IT Depreciation for 0th year has been considered as 40% and 80% for subsequent years. This has been found correct by the financial expert. Closed.
8. A tariff rate of 3.5 per kWh (with 0.15 paisa escalation every year) has been considered after 13th year (PPA is signed for 13 years) in the IRR calculation. The same has been found appropriate as per the MERC order dated Nov 2007 (Case 33 of 2007) after PPA term (ending 31st March 2007) the tariff rate of group II projects has been frozen at 90% of lowest tariff offered first PPA. Hence, this issue was closed.
9. As per guidance in para 11 of EB 51 Annex 58, the PP is requested to clarify why a debt-equity ratio of 75/25 has not been used in IRR calculation as is the case with the wind power project activity of HP in Tamil Nadu. Further, how the project activity is deemed additional as with the application of this ratio the IRR is crossing the benchmark. Open
10. A 5% deration in electricity generation has been considered inline with MERC order 2003-04. This is checked and found ok. Hence, this issue is closed.
11. Sensitivity analysis is now performed on tariff as well. Closed.
12. Others barriers have been removed in the revised PDD. Issues raised on barrier analysis are closed now.

Acceptance and Close out by Lead Assessor: CAR 03 is open	**Date:** 02/11/2010
Project Participant Response:	**Date: 02/12/2010**
1. O&M cost is a fixed cost incurred in **all** power projects. That the quotation provides indicative figures for initial 5 years does in no way mean that a project does not require O&M costs beyond 5th year. Insurance cost incurred by same PP for the same WTG model set up in Tamilnadu has been adopted as the basis of insurance charges for the present project activity. Loan Sanction letter is provided as evidences for repayment period, moratorium & interest rate. 5. The value of 41 Lakh kWh per WTG p.a. is gross generation and loss factors are to be incorporated to arrive at net generation. The PP hereby submits the email communication with WTG supplier 6. 14% is the actual interest rate of sanction and was made available at the time of webhosting. The same is used in revised PDD & IRR sheet in line with para 11 of EB51 Annex 58. 9. The debt:equity ratio of 75/25 has been applied as per guidance in para 11 of EB 51 Annex 58 and the project IRR still does not cross the benchmark	
Documentation Provided by Project Participant:	
1. a) Insurance Cost - Insurance premiums paid for 1.65 MW Vestas WTG in Tamilnadu by PP b) Moratorium, Repayment Period & Interest Rate - Sanction of Term Loan for project activity in Maharashtra 5. Email confirmation from Vestas for generation estimates	
Information Verified by Lead Assessor:	
Revised PDD and documents submitted	
Reasoning for not Acceptance or Acceptance and Close Out:	

1. In webhosted PDD, insurance cost equivalent to 0.7% of project cost was considered. This amounts to 15.796 lakhs (approx.), hence, the actual insurance (5.84601 lakhs/WTG) used in the investment analysis has been found conservative and accepted. O & M beyond 5th year has been considered as per MSEB wind project tariff order 2003-04 (refer annexure 1). This is accepted as O & M contract is signed for 5 years @ 7.5% escalation per year. Repayment period of 8 years and moratorium period of 1 year are now considered as per the loan sanction letter for a similar wind power project of the project proponent. The loan sanction letter dated 15/07/2005 from Bank of Baroda has been checked and found ok. Hence this issue is closed.
2. The factors used in calculation of gross are inline the quotation and contract signed with technology supplier. This is further confirmed through a mail communication with technology supplier. Hence issues is closed.
3. As per the PP response dated 20/10/2010 and MSEB tariff order dated 24/11/2003, an interest rate of 11.5% (1.5% below 13% proposed by MSEB, this is as per loan sanctioned for a similar project of the PP) is deemed valid during the time of investment decision. The same is now applied in IRR calculation and found ok. Hence, this issue is closed.
4. The debt/equity ratio of 75/25 has now been used in the investment analysis. Closed.

Acceptance and Close out by Lead Assessor: CAR 03 is Closed.	**Date:** 25/08/2011

Date:	08/04/2009		Raised by:	Assessment Team		
Type:	CAR	Number:	04		Reference:	B.4.4.

Lead Assessor Comment:	**Date:** 08/04/2009
The start date of the project activity as per the PDD version 01 is 16/01/2008. Please provide documentary evidences to prove the serious CDM consideration as per EB 41 Annex 46.	
Project Participant Response:	**Date:** 07/05/2009
Details related to serious CDM consideration are updated in Table 11 of section B.5 of the PDD. Documentary evidences related to these events are submitted to validation team	
Documentation Provided by Project Participant:	
• Registered PDD for PP's first wind project in Rajasthan (http://cdm.unfccc.int/Projects/DB/DNV-CUK1143050217.74/view) • Detailed techno-commercial quotation from technology supplier to HPPL • Copy of Board Note for CDM consideration (already submitted to validation team) • Purchase order (already submitted to validation team) • Email communication with CDM consultant	
Information Verified by Lead Assessor:	
Chronology in revised PDD, relevant documents provided	
Reasoning for not Acceptance or Acceptance and Close Out:	

1. The email correspondences between PP and CDM consultant in its present form are unacceptable; please provide the original authentic copy of Emails. Also please provide a copy of the contract between the CDM consultant and PP.
2. Also please provide the email correspondence between the technology supplier (Vestas) and PP, before the final quotation was received from Vestas.
3. The extract of the board resolution does not talk about the consideration of CDM funds in implementation of the project activity. Please provide the document in its original form or provide a strong justification for the same.
4. The PP has one registered CDM project; this proves that the PP was aware of the CDM and its potential to make project financially viable. However, please explain the delay in appointing DOE and delay in putting application for HCA by the PP in the process.

Acceptance and Close out by Lead Assessor: CAR 04 is open	**Date:** 21/05/2009
Project Participant Response:	**Date:** 31/07/2009

A. Email correspondences between PP and CDM consultant are forwarded to validation team.

B. Email between PP and technology supplier (Vestas) prior to are forwarded to validation team

Documentation Provided by Project Participant:

Revised PDD

Information Verified by Lead Assessor:

Chronology in revised PDD

Reasoning for not Acceptance or Acceptance and Close Out:

1. The email correspondences between PP and CDM consultant in its present form are unacceptable; please provide the original authentic copy of Emails. Also please provide a copy of the contract between the CDM consultant and PP.
2. Also please provide the email correspondence between the technology supplier (Vestas) and PP, before the final quotation was received from Vestas.
3. Please justify the serious CDM consideration as per paragraph 5(a) of EB41 Annex 46.
4. As per paragraph 5(b) of EB41 Annex 46, please justify that the real actions were taken to secure the CDM status in parallel to the project implementation.

Acceptance and Close out by Lead Assessor: CAR 04 is open	**Date:** 17/08/2009
Project Participant Response:	**Date: 24/12/2009**

1. Email correspondence between PP and CDM consultant is forwarded to validation team
2. Email correspondence between PP and Vestas has been forwarded to validation team
3. Extract of the board resolution clearly mentions “revenue from the CDM will be considered while deciding financial viability”. Further, as guided by The Board, HPPL team has performed detailed financial analysis and found that project is not financially viable unless CDM funds are considered. Hence, considering CDM funds as critical for the financial viability, the project was approved. Copy of internal memo for project approval demonstrates the same. This along with various action taken by PP to achieve CDM status clearly demonstrates PP’s seriousness consideration of CDM for this project activity. Table no. 12 has list of all major steps taken to achieve CDM registration.
4. Section B.5 of PDD is updated with the real action taken to achieve CDM status in parallel to project implementation and it is in line with EB49 Annex 22.

Documentation Provided by Project Participant:

Project_approval.pdf

Information Verified by Lead Assessor:

Chronology in revised PDD

Reasoning for not Acceptance or Acceptance and Close Out:

1. The email correspondences between PP and CDM consultant have been checked and found OK. Closed 2. The email correspondences between PP and Vestas have been checked and found OK. Closed 3. The board resolution dated 11/01/2010 and approval from chair of board on consideration of funds from CDM to make project financially viable has been checked and found OK. Closed. 4. Within two years of project start date the PP had signed a contract with CDM consultant, presented project activity to Host Party DNA for granting LoA for the project activity and signed a contract with SGS. The project activity was finally webhosted in Jan'09. Hence, as per para 6, 7 and 8a of EB 49 Annex 22, it could be concluded that CDM was seriously considered in the project activity. Closed.
Acceptance and Close out by Lead Assessor: CAR 04 is Closed — **Date:** 26/05/2010

Date:	08/04/2009		Raised by:	Assessment Team	
Type:	CL	Number:	05	Reference:	B.5.1-B.5.3
Lead Assessor Comment:				**Date:** 08/04/2009	
Please clearly mention the equations used and assumptions made in calculating the Baseline, Project and Leakage emissions in section B.6 of the PDD. Clearly mention the values used, specify the source of data and provide necessary references.					
Project Participant Response:				**Date:** 07/05/2009	
Necessary corrections are being done.					
Documentation Provided by Project Participant:					
Revised PDD					
Information Verified by Lead Assessor:					
Emission reduction calculations in the revised PDD					
Reasoning for not Acceptance or Acceptance and Close Out:					
The emission reduction calculations are wrongly performed in section B.6.3 of the PDD. The value of net emission reduction should be corrected as per the emission reduction calculation sheet.					
Acceptance and Close out by Lead Assessor: CL 05 is open				**Date:** 21/05/2009	
Project Participant Response:				**Date: 31/07/2009**	
Necessary correction is done in section B.6.3.					
Documentation Provided by Project Participant:					
Revised PDD					
Information Verified by Lead Assessor:					
Emission reduction calculations in the revised PDD					
Reasoning for not Acceptance or Acceptance and Close Out:					
The emission reduction calculations in section B.6.3 of the PDD have been corrected. The value of the net CERs in the PDD version 3 matches with the emission reduction calculation sheet.					
Acceptance and Close out by Lead Assessor: CL 05 is closed				**Date:** 17/08/2009	

Date:	08/04/2009		Raised by:	Assessment Team	
Type:	CAR	Number:	06	Reference:	B.7.1.
Lead Assessor Comment:				**Date:** 08/04/2009	
Please provide the Emission Reduction calculation sheet. Please provide supportive documents for all the assumptions made. Provide necessary references.					
Project Participant Response:				**Date:** 21/04/2009	
Emission Reduction calculation sheet is provided to validation team along with all necessary supportive documents for all the assumptions made.					
Documentation Provided by Project Participant:					
HP_MH_Worksheet_v2.xls					
Information Verified by Lead Assessor:					

Emission reduction calculations and assumptions made.	
Reasoning for not Acceptance or Acceptance and Close Out:	
The gross generation data of the WEGs, PLF value used for the CER estimates have been referred from the WEGs purchase agreements. The estimated PLF value referred from the relevant sources should be used in CER estimation calculation. Please clarify.	
Acceptance and Close out by Lead Assessor: CAR 06 is open	**Date:** 21/05/2009
Project Participant Response:	**Date: 31/07/2009**
The gross generation data is taken from the quotation received from the technology supplier. Value of PLF is calculated by deducing various losses as mentioned in the quotation. This calculated PLF value is used in estimation of CERs.	
Documentation Provided by Project Participant:	
Copy of quotation for 1x1.65 MW WTG from Vestas	
Information Verified by Lead Assessor:	
Emission reduction calculations and assumptions made.	
Reasoning for not Acceptance or Acceptance and Close Out:	
1. The PLF of wind turbines is calculated based on the estimated generation mentioned in quotation provided by the technology supplier. PP is requested to further substantiate the considered PLF value in line with the requirements of paragraph 3(a) and 3(b) of EB 48 Annex 11. Open 2. The emission factor is referred from CEA database version 4 which uses 'tool to calculate emission factor version 01'. However, now as the revised version of 'tool to calculate the emission factor' is published in EB 50, please clarify how the original OM and BM data is still valid. Open	
Acceptance and Close out by Lead Assessor: CAR 06 is Open	**Date:** 26/05/2010
Project Participant Response:	**Date: 28/05/2010**
1. The PLF of the wind project has been determined based on the report of a third party agency. The report is hereby submitted to the DOE in accordance to the latest version of "Guidelines for the Reporting and Validation of Plant Load Factors" 2. The latest version of the tool has been used to determine the emission factor in the revised PDD. It may please be noted here that the input values have been maintained from CEA database version 4 as the same was the latest version of publication available at the time of start of validation.	
Documentation Provided by Project Participant:	
1. PLF Report by Fair Aero Consultant & Technologists	
Information Verified by Lead Assessor:	
Third party report on PLF	
Reasoning for not Acceptance or Acceptance and Close Out:	
1. Third party contracted by Hindustan Platinum has determined a PLF of 20.44% for the 2 wind turbines installed in the project activity. The PLF used in IRR calculation has been found as 'conservative' and hence accepted. However, PP is requested to clarify why a PLF of 24.58% was used in webhosted PDD. Open 2. Tool to calculate emission factor EB 50 Annex 14 has been used to determine emission factor. Closed.	
Acceptance and Close out by Lead Assessor: CAR 06 is Open	**Date:** 02/11/2010
Project Participant Response:	**Date: 02/12/2010**
1. Uncertainty losses of 5% was omitted in the webhosted PDD which resulted in a PLF different from that in the revised PDD	
Documentation Provided by Project Participant:	
None	
Information Verified by Lead Assessor:	
PLF in webhosted PDD	
Reasoning for not Acceptance or Acceptance and Close Out:	

SGS 08/11/2010: After omission of uncertainty of losses of 5%, PLF is coming out to be 23.3% as calculated in the intial spreadsheet submitted to SGS. Hence, still it is not clear why a PLF of 24.58% was used in the PDD. Hence, this issue remains open. PP: The PLF was wrongly calculated in initial spreadsheet, the same error has been nullified in revised spreadsheet. SGS 25/08/2011: OK, closed.
Acceptance and Close out by Lead Assessor: CAR 06 is closed. **Date:** 25/08/2011

Date:	08/04/2009		Raised by:	Assessment Team	
Type:	CAR	Number:	07	Reference:	B.9.1.
Lead Assessor Comment:				**Date:** 08/04/2009	
Please include all the parameters (Net electricity generated, Electricity Imported, Electricity exported) in the monitoring plan of the PDD. Please include The Combined Margin Emission Factor in the list of parameters that are available at validation.					
Project Participant Response:				**Date:** 21/04/2009	
Necessary changes are made in PDD.					
Documentation Provided by Project Participant:					
Revised PP					
Information Verified by Lead Assessor:					
Monitoring parameters and parameters available at validation in the revised PDD					
Reasoning for not Acceptance or Acceptance and Close Out:					
1. Please specify the Version of the CEA data, from which the values of OM, BM have been referred. Also please provide a more elaborative and clear description on 'Justification of choice of data' for all the three parameters (OM, BM, CM). Please correct existing typo-graphical errors as well. 2. Please correct the Typo-graphical errors in section B.7 of the PDD 3. PP is requested to demonstrate the calculation of data for Net electricity exported, gross electricity exported, gross electricity imported by JMR sheets and apportioning methods.					
Acceptance and Close out by Lead Assessor: CAR 07 is open				**Date:** 21/05/2009	
Project Participant Response:				**Date: 31/07/2009**	
1. Version of CEA data from which values of OM and BM is referred is given in section B.4. A hyperlink of the data base is also given in footnote no 5. Version of the database is also added at other places. 'Justification of choice of data' is also updated for OM, BM and CM. 2. Typo graphical errors are corrected.					
Documentation Provided by Project Participant:					
Copy of quotation for 1x1.65 MW WTG from Vestas					
Information Verified by Lead Assessor:					
Monitoring parameters and parameters available at validation in the revised PDD					
Reasoning for not Acceptance or Acceptance and Close Out:					
1. The values of Operating margin and build margin are referred from CEA database version 04. This is mentioned in section B.6.2 of the PDD version 03. Closed 2. Please explain how the 'Net electricity exported' will be calculated on daily basis based on JMR readings, as mentioned in section B.7.2 of the PDD Version 03. Open 3. The information on monitoring procedure (measured, calculated, estimated) is not consistent for the parameters 'Gross Electricity Exported' and 'Gross Electricity Imported' in section B.7.2 of the PDD Version 03. Open 4. PP is requested to demonstrate the calculation of data for Net electricity exported, gross electricity exported, gross electricity imported by JMR sheets and apportioning methods. Open					

Acceptance and Close out by Lead Assessor: CAR 07 is open	**Date:** 17/08/2009
Project Participant Response:	**Date: 24/12/2009**
2. Value of 'Net electricity exported' will be calculated monthly as per JMR. 3. The information on monitoring procedure are corrected in updated PDD version 3.1 and are now consistent with section B.7.2 4. Steps of JMR and apportioning procedure are included in Annex 4 of update PDD version 3.1	
Documentation Provided by Project Participant:	
Revised PDD	
Information Verified by Lead Assessor:	
Monitoring parameters and parameters available at validation in the revised PDD	
Reasoning for not Acceptance or Acceptance and Close Out:	
2. It has been made clear in PDD that 'net electricity exported' to grid will be calculated on monthly basis from JMR. Closed. 3. The information on monitoring procedures is not consistent with the description of monitoring parameter. Please correct. **Open** 4. The calculation procedures for apportioning of net/gross electricity exported/imported is not correct. Please check. Open	
Acceptance and Close out by Lead Assessor: CAR 07 is open	**Date:** 26/05/2010
Project Participant Response:	**Date: 28/05/2010**
3. The monitoring procedures have been corrected in the revised PDD. 4. The calculation procedures for apportioning of net/gross electricity exported/imported has been corrected in the revised PDD.	
Documentation Provided by Project Participant:	
Revised PDD	
Information Verified by Lead Assessor:	
Monitoring procedures and apportionining calculations.	
Reasoning for not Acceptance or Acceptance and Close Out:	
1. The information on monitoring procedures has been made consistent with the description of monitoring parameter. Closed 2. The calculation procedures for apportioning of net/gross electricity exported/imported has now been corrected in the revised PDD. Closed	
Acceptance and Close out by Lead Assessor: CAR 07 is Closed.	**Date:** 02/11/2010

Date:	08/04/2009		Raised by:	Assessment Team	
Type:	CL	Number:	08	Reference:	B.11.3.
Lead Assessor Comment:			**Date:** 08/04/2009		
Please clearly describe the procedure used (QA/QC, Management reviews, uncertainty level determination, internal audits) used to maintain the data quality and accuracy in monitoring plan of the PDD. These steps should be described separately for each of the monitored parameter					
Project Participant Response:			**Date:** 07/05/2009		
As mentioned in monitoring plan of project activity, Net Export of Electricity will be calculated by deducting Imports from Gross Export. All this three parameters are monitored during the Joint Meter Reading (JMR) procedure, section B.7.2 of PDD is updated with required details of these parameter.					
Documentation Provided by Project Participant:					
Revised PDD					
Information Verified by Lead Assessor:					
Information on monitoring parameters					
Reasoning for not Acceptance or Acceptance and Close Out:					

The required information has been specified for all the monitored parameters.
Acceptance and Close out by Lead Assessor: CL 08 is closed — **Date:** 21/05/2009

Date:	08/04/2009		Raised by:	Assessment Team	
Type:	CL	Number:	09	Reference:	B.12.3.
Lead Assessor Comment:				**Date:** 08/04/2009	
Please provide information on the training imparted to the personnel's employed to monitor the process.					
Project Participant Response:				**Date:** 18/05/09	
Following trainings carried out: 1. Basic training on WTGs' operation, maintenance (preventive & break down), trouble shooting. 2. Rescue training from height 3. Fire fighting 4. Basic safety training.					
Documentation Provided by Project Participant:					
Email from technology supplier.					
Information Verified by Lead Assessor:					
Information on training imparted to monitoring personnel by the technology supplier.					
Reasoning for not Acceptance or Acceptance and Close Out:					
Please provide necessary documents (manual of training program, email from tech. suppliers etc.) to assure that the monitoring personnel are technically trained and possess necessary skills to effectively monitor the process.					
Acceptance and Close out by Lead Assessor: CL 09 is open — **Date:** 21/05/2009					
Project Participant Response: — **Date: 31/07/2009**					
PP has outsourced the O&M activity to Vestas who has technical expertise required for O&M of such WTGs. PP and Vestas has agreed on certain service quality levels in O&M of WTGs of this project activity and under this agreement Vestas is committed to deliver the needed service quality level by employing skilled persons and regularly training them. An email from Vestas has been already submitted to validation team, this email has clearly mentioned list of trainings given to their staff.					
Documentation Provided by Project Participant:					
Email from technology supplier.					
Reasoning for not Acceptance or Acceptance and Close Out:					
Please provide the copy of the email from the technology supplier on training of monitoring personnel.					
Acceptance and Close out by Lead Assessor: CL 09 is open — **Date:** 17/08/2009					
Project Participant Response: — **Date: 24/12/2009**					
Copy of email is submitted to validation team. Same is also forwarded to validation team.					
Documentation Provided by Project Participant:					
Email from technology supplier about trailing details (RE_ QA_QC details of O&M team.pdf)					
Reasoning for not Acceptance or Acceptance and Close Out:					
The mail communication from the technology supplier on training of monitoring personnel has been verified and found OK. Hence, CL 09 is closed					
Acceptance and Close out by Lead Assessor: CL 09 is Closed — **Date:** 21/05/2010					

Date:	08/04/2009		Raised by:	Assessment Team	
Type:	CL	Number:	10	Reference:	B.14.2.
Lead Assessor Comment:				**Date:** 08/04/2009	

The date of completion of the application of baseline and monitoring methodology 12/09/2007 does not fall with in the time line of the PDD history. Please clarify.	
Project Participant Response:	**Date:** 07/05/09
Error is removed in the updated PDD and date is changed to 12/09/2008	
Documentation Provided by Project Participant:	
[Note to PP: Please provide evidence to the Response above, clearly reference the documentation and indicate documentation name/version and date here- for soft copies, exact names of electronic files and if applicable, active links to the web page; reference to the section(s) and text within the documentation including page number(s) should be provided for easy reference and transparency]	
Information Verified by Lead Assessor:	
Revised PDD	
Reasoning for not Acceptance or Acceptance and Close Out:	
Please make necessary corrections in the PDD on date of completion of baseline.	
Acceptance and Close out by Lead Assessor: CL 10 is open	**Date:** 21/05/2009
Project Participant Response:	**Date: 31/07/2009**
Necessary correction is done in section B.8	
Documentation Provided by Project Participant:	
Revised PDD	
Information Verified by Lead Assessor:	
Information on date of completion of baseline and monitoring methodology.	
Reasoning for not Acceptance or Acceptance and Close Out:	
The date of completion of the application of the baseline and monitoring methodology is 12th September 2008.	
Acceptance and Close out by Lead Assessor: CL 10 is closed	**Date:** 17/08/2009

Date:	08/04/2009		Raised by:	Assessment Team	
Type:	CL	Number:	11	Reference:	LAC
Lead Assessor Comment:				**Date:** 08/04/2009	
PP has circulated a notice in local language (Marathi) to invite the stakeholders for the local stakeholder's consultation process. However the date of issuance/circulation is not mentioned on the notice. Please provide the notice in the English language to understand and interoperate the information mentioned in it. The date of issuance/circulation of the notice should be specified on it. Please provide the details of the comments/issues raised and summarized discussion of the stakeholder consultation process.					
Project Participant Response:				**Date:** 07/05/09	
Copy of minutes of meeting is already provided to validation team. English translation of invitation notice is provided to validation team.					
Documentation Provided by Project Participant:					
English translation of invitation notice					
Information Verified by Lead Assessor:					
Stakeholder documents					
Reasoning for not Acceptance or Acceptance and Close Out:					
The date of issuance/circulation is not mentioned on the notice. Please provide necessary documents to assure that the stakeholder process has had happened in the past.					
Acceptance and Close out by Lead Assessor: CL 11 is open				**Date:** 21/05/2009	
Project Participant Response:				**Date: 31/07/2009**	
Date of stakeholders is available on the attendance sheet submitted to validation team. This confirms that the stakeholder's meet was held on 29th November 08.					
Documentation Provided by Project Participant:					
Copy of attendance sheet of stakeholder's meet.					

Information Verified by Lead Assessor:	
Stakeholder documents	
Reasoning for not Acceptance or Acceptance and Close Out:	
The stakeholder meeting was held on 29th November 2008, this has been verified from the attendance sheet provided.	
Acceptance and Close out by Lead Assessor: CL 11 is closed	**Date:** 17/08/2009

Date:	08/04/2009		Raised by:	Assessment Team	
Type:	CL	Number:	12	Reference:	LAC
Lead Assessor Comment:				**Date:** 08/04/2009	
The PP is requested to submit the Modalities of communication as per EB 45 Annex 59. Also submit a certificate (undertaking) on Official Development Assistance (ODA).					
Project Participant Response:				**Date:** 07/05/09	
Copy of Modalities of Communication and undertaking on No Official Development Assistance is submitted to validation team.					
Documentation Provided by Project Participant:					
Modalities of Communication (HPPL_MH_MOC.pdf) Undertaking for No ODA fund (No ODA.pdf)					
Information Verified by Lead Assessor:					
1. Duly filled and signed MoC form. 2. Certificate on No ODA from an independent chartered accountant.					
Reasoning for not Acceptance or Acceptance and Close Out:					
1. The PP has submitted a duly filled form on MoC, this has beenc checked and found in line with guidance in EB 45 Annex 59. Closed 2. Certificate on financial assessment and no involvement of official development assistance from an independent financial expert has been submitted by the project proponent. The document also mentioned that project has been funded by internal accruals and terms loans. Closed					
Acceptance and Close out by Lead Assessor: CL 12 is Closed				**Date:** 21/05/2010	

Date:	12/10/2011		Raised by:	Technical Reviewer	
Type:	CAR	Number:	13	Reference:	SG 10
Lead Assessor Comment:				**Date:** 12/10/2011	
a. Version of 'tool to calculate emission factor' is not consistent in the PDD. Please correct. b. Please choose a realistic start date of crediting period. c. Please clarify why 10% sensitively on PLF is appropriate where as just increasing 1.5% more, IRR is crossing the benchmark.					
Project Participant Response:				**Date:** 13/10/2011	
Relevant corrections have been made in PDD for issues raised above.					
Documentation Provided by Project Participant:					
Revised PDD					
Information Verified by Lead Assessor:					
Corrections made in Revised PDD					
Reasoning for not Acceptance or Acceptance and Close Out:					
1. Version of tool is now consistent throughout the PDD. Closed. 2. Start date of crediting period is chosen as 01/01/2012. This is realistic. Closed. 3. Varying PLF to 11.5% will make IRR cross the benchmark. However, a PLF of 24.35% seems highly unrealistic as third party report[19] indicates a PLF of 20.44% in the region. Further, it may be worth noting that PP has considered a conservative value of PLF (i.e. 21.84%) in IRR calculation. Hence, variation of 10% in PLF accounted under sensitivity analysis is reasonable and found acceptable. Closed.					

CAR #13 Closed.	
Acceptance and Close out by Lead Assessor:	**Date:** 13/10/2011

Date:	16/04/2012		Raised by:	Assessment Team		
Type:	CAR	Number:	14		Reference:	Table 1-3
Lead Assessor Comment:				**Date:** 16/04/2012		
It is found that applied methodology AMS I.D version 16 has expired; please clarify why the latest version of AMS I.D is not referred for project activity.						
Project Participant Response:				**Date:** 16/04/2012		
The revised PDD based on the latest available version of AMS ID (Version 17) is hereby submitted to the DOE						
Documentation Provided by Project Participant:						
Revised PDD version 07 dated 16/04/2012						
Information Verified by Lead Assessor:						
Revised PDD is checked						
Reasoning for not Acceptance or Acceptance and Close Out:						
PP has updated the PDD in line with latest available version of AMS ID (Version 17) found satisfactory, hence CAR #14 is closed.						
Acceptance and Close out by Lead Assessor:				**Date:** 17/04/2012		

Date:	07/05/2012		Raised by:	Assessment Team		
Type:	CAR	Number:	15		Reference:	Table 1-3
Lead Assessor Comment:				**Date:** 07/05/2012		
Please clarify the following issues: **Risk free Rate of return:** How the considered risk free rate of return is suitable to calculate benchmark comparable to financial indicator calculated using 20 yrs assessment period. **Data vintage to calculate cost of equity:** How the considered time period used to calculate cost of equity is suitable to calculate benchmark comparable to financial indicator calculated using 20 yrs assessment period. **Interest on term loan:** Inconsistent source mentioned in IRR sheet, please clarify how the source referred for interest rate on loan is in line with paragraph 13 of EB 62 annex 5. **Beta:** why only 4 companies have been selected for beta calculation, no information on what data vintage has been considered and no direct link to source is provided. Also screen shots of capitaline are not included in PDD. **O&M cost escalation**: Please provide documentary evidence for the actual escalation on O&M cost after 5th year of project implementation. Also clarify why the escalation rate of O&M is not included as parameter under sensitivity analysis?						
Project Participant Response:				**Date:** 11/05/2012		
Risk free Rate of return: The risk free rate has been derived as the yield on maturity of a 20 year old government bond, as per the latest Reserve Bank of India Handbook available at the time of decision making (published on 14/12/2007 and available at http://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/82069.pdf). Since this data is based on more than 20 years of historic government securities data, the same may be considered appropriate against the assessment period chosen for investment analysis. **Data vintage to calculate cost of equity:** As per the revised submission, the data vintage for calculating cost of equity is based on the historic performance of the BSE-SENSEX. However, historic data is not available for the period since a day after its inception, i.e., 02/04/1978 (inception date: 01/04/1978) to 01/01/1991. Hence, market growth has been calculated between both periods (01/04/1978-11/01/2008) and (02/01/1991-11/01/2008). The more conservative value for growth has been observed for the latter period. Though the period of (02/01/1991-11/01/2008) is around 17 years, it may please be noted that not only is this data conservative, it is also more similar to project duration of 20 years rather than (01/04/1978-11/01/2008) which is less conservative and widely different than the project duration. Hence the same may be considered appropriate against the assessment period chosen for investment analysis. **Interest on term loan:** Interest and other loan terms have been now been sourced from MERC tariff order which was available to the PP at the time of investment decision and hence, in accordance to guidance 6 of						

EB 62 Annex 5

Beta: The list of all companies listed and being traded on BSE is available on (http://www.bseindia.com/downloads/about/abindices/file/Indices.zip). Being a power project activity, only 'POWER' sector listed companies have been used for arriving at the list of similar companies. If the listing dates of these companies are looked at, only 16 companies were being traded on BSE at the time of decision making.

The time period for beta estimation has been derived from several business-related literatures. As per "*Estimating Risk Parameters*" by Aswath Damodaran (http://archive.nyu.edu/bitstream/2451/26906/2/wpa99019.pdf): "*Risk and return models are silent on how long a time period one needs to use to estimate betas. Services use periods ranging from two years to five years for beta estimates, with varying results*". Again, "*Investment Management: A modern guide to security analysis and stock selection*" (http://books.google.co.in/books?id=oowq_PkME3UC&pg=PA84&lpg=PR1) mentions *"…an analyst has the liberty to choose the time period for beta estimation. Typically analysts use 2 year and 5 year data. The latter is more popular…"* Based on both available literatures, beta of 5 years has been considered for estimating the risk portfolio of similar companies. Considering that a company should have been listed for at least 5 years at the time of investment , the list of similar companies are narrowed down to 7. The beta for all of these companies for the relevant 5 year period (01/01/2003 to 01/01/2008) have been sourced from Capitaline (a copyrighted website) and presented to the DOE separately. The same data has been used for the computation of benchmark.

O&M cost escalation: In line with the quotation from WTG supplier, the PP has entered into an O&M agreement with Vestas for a period of 5 years from 2010-15. As and when 2015 arrives, a new O&M contract will be entered into whose actual cost & escalation parameters are presently not available. Since the quotation also did not provide any clarity on O&M escalation beyond the 5th year, the MERC tariff order escalation value has been used for estimating O&M expenses beyond the 5th year. O&M expenses have now been subjected to sensitivity analysis in the revised PDD

Documentation Provided by Project Participant:

1. Capitaline Beta Screenshots

Information Verified by Lead Assessor:

Revised PDD and IRR excel sheet is checked

Reasoning for not Acceptance or Acceptance and Close Out:

PP has considered risk free rate derived as the yield on maturity of a 20 year old government bond, as per the latest Reserve Bank of India Handbook available at the time of decision making, the same is found satisfactory hence accepted.
The data vintage of 17 years is used to calculate cost of equity which is comparable and appropriate for the project activity hence accepted.
Interest rate for IRR and Benchmark calculation is sourced from MERC tariff order published in 2003,it is not clear if the same was the latest data available to PP at the time of investment decision? Please clarify the appropriateness of source referred.
Based on the justification provided for beta determination, it can be confirmed that Beta value considered to arrive benchmark is appropriate hence accepted.
As per the proposal technology supplier has provided escalation over O&M cost since commissioning to 5 years only. The same is verified from signed O&M agreement also, since the escalation rate after 5th year was not provided by WTG supplier hence the same is sourced from MERC tariff order available to PP at the time of investment decision.Anticipatiing the future variation in O&M cost, the same is included as parameter under sensitivity analysis. Hence this point is closed satisfactorily.
Please address the following concerns:

Benchmark Calculation: Market Return: please clarify why the considered time period (in yrs) is not mentioned in a separate cell for transparency.
It is not clear how the residual value considered is just 5% of WTG cost. Please provide appropriate source/reference for the same.

Project Participant Response:	**Date:** 04/06/2012

Interest Rate: This value is now based on the latest average RBI Prime Lending Rate published at the time of investment decision.

Benchmark Calculation: The time period for calculating market returns is mentioned both in the IRR sheet as well as PDD Residual Value: The consideration of residual value as 5% of WTG cost is sourced from the MERC Tariff Order
Documentation Provided by Project Participant:
Revised PDD version 08 dated 11/05/2012 Revised Financial analysis sheet version 08,dated 04/06/2012
Information Verified by Lead Assessor:
Revised PDD and IRR sheet is checked
Reasoning for not Acceptance or Acceptance and Close Out:
PP has considered the interest rate as latest average RBI Prime Lending Rate published at the time of investment decision. The same is found satisfactory hence accepted. The time period considered to calculate market return is transparently reported in revised finical analysis sheet and PDD, The same is found satisfactory hence accepted. PP has considered residual as 5%, outlined in MERC tariff order dated 24/11/2003,which was the latest official document available to PP at the time of decision making, hence accepted.
Acceptance and Close out by Lead Assessor: **Date:** 10/06/2012

A.4 Annex 4: Team Members Statements of Competency

Name: Ravi Kant Soni

Status

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

Scopes of Expertise

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

Technical Area(s): TA 1.2 Energy generation from renewable energy sources (Wind)

2. **Energy Distribution**

Technical Area(s):

3. **Energy Demand**

Technical Area(s):

4. **Manufacturing**

Technical Area(s):

5. **Chemical Industry**

Technical Area(s):

6. **Construction**

Technical Area(s):

7. **Transport**

Technical Area(s):

8. **Mining/Mineral Production**

Technical Area(s):

9. **Metal Production**

Technical Area(s):

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

Technical Area(s):

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

Technical Area(s):

12. **Solvent Use**

Technical Area(s):

13. **Waste Handling and Disposal**

Technical Area(s):

14. **Afforestation and Reforestation**

Technical Area(s):

15. **Agriculture**

Technical Area(s):

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

Statement of Competence

Name: Ajay Singh Thakur

Status

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

Approved Member of Staff by: Siddharth Yadav Date: 20/04/2012

Statement of Competence

Name: Anshul Sharma

Status

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

Scopes of Expertise

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

Approved Member of Staff by: Siddharth Yadav Date: 07/03/2012

Statement of Competence

Name: 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: 06/02/2012