Validation Report

Report for:

Giriraj Enterprises

Validation of CDM project for

Grid Connected Wind Power Project by M/s Giriraj Enterprises in Madhya Pradesh

LRQA Reference	:	CDM-MUM-0061726 Version 03.2
Date	:	06/07/2012
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Contents

1 Executive Summary

Lloyd's Register Quality Assurance Limited has been contracted by Giriraj Enterprises, the project participant (PP), to undertake validation of the proposed project activity "Grid Connected Wind Power Project by M/s. Giriraj Enterprises in Madhya Pradesh". The validation has been performed through a process of document review based on the project design document, Version 01.1 dated 24/03/2011 initially submitted for validation and the subsequent revisions, follow-up interviews with the stakeholders, resolution of outstanding issues and issuance of the validation report.

The project intends to reduce greenhouse gas (GHG) emission by utilising wind resource to generate electricity. The project activity envisages the installation of 10 Wind Turbine Generator (WTGs) with capacity of 1.5MW each in the state of Madhya Pradesh. The electricity generated by the project activity will be supplied to the regional grid, i.e. NEWNE Grid. It will reduce the impact of power generation from the conventional fossil fuel based power plants, thereby leading to reduction of GHG emissions.

The fulfilment of the requirements as set forth in Article 12 of the Kyoto Protocol of the United Nations Framework Convention on Climate Change (UNFCCC), the modalities and procedures for a CDM (CDM M&P) and relevant decisions of the Conference of the Parties, serving as meeting of the Parties to the Kyoto Protocol (COP/MOP) and the Executive Board of the CDM (CDM-EB) have been evaluated and conformance to the validation requirements were confirmed based on the given information. A risk based approach was taken to conduct the validation and corrective action requests (CARs) and clarifications (CLs) were raised for relevant actions by the PP.

The validation team has found through the validation process 6 CARs and 5 CLs. The PP has taken actions and submitted to LRQA revised PDD, investment analysis spreadsheet, revised emission reduction spreadsheet. The validation team is of the opinion that the proposed project activity as described in the project design document 02.6 dated 05/07/2012 meets all the relevant UNFCCC requirements for the CDM, as well as the host country's national requirements and if implemented as designed, is likely to achieve the emission reductions and contribute to the sustainable development of the host country. LRQA therefore requests the registration of "Grid Connected Wind Power Project by M/s. Giriraj Enterprises in Madhya Pradesh" to the CDM Executive Board as a CDM project activity.

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Abbreviations

BE	Baseline emissions
CARs	Corrective action requests
CEA	Central Electricity Authority
CDM	Clean development mechanism
CDM-EB	Executive board of clean development mechanism
CDM M&P	Modalities and procedures for a clean development mechanism
CDM VVM	CDM Validation and Verification Manual
CEA	Central Electricity Authority
CERs	Certified emission reductions
CLs	Clarification requests
COP/MOP	Conference of the Parties serving as meeting of the Parties to the Kyoto Protocol
DNA	Designated national authority
DOE	Designated operational entity
EF	Emission factor
EIA	Environmental impacts assessment
ERPA	Emissions reduction purchase agreement
FAR	Forward action requests
GHG	Greenhouse gas
GSP	Global stakeholders' consultation process
IPCC	Intergovernmental panel on climate change
IRR	Internal rate of return
KP	Kyoto Protocol of the United Nations Framework Convention on Climate Change
kW / kWh	Kilowatt / Kilowatt hour
LE	Leakage emissions
LoA	Letter of approval
LR	Lloyd's Register
LRQA	Lloyd's Register Quality Assurance Limited
MAT	Minimum Alternate Tax
MoEF	Ministry of Environment and Forests
MPERC	Madhya Pradesh Electricity Regulatory Commission
MP TRANDECO	Madhya Pradesh Electricity Trading Company Limited
MW / MWh	Mega watt / Mega watt hour
NCDMA	National Clean Development Mechanism Authority
NCV	Net calorific value
NEWNE	North East West North-East
NGO	Non governmental organization
ODA	Official development aid
O&M	Operation and Maintenance
PDD	Project design document
PE	Project emissions
PLF	Plant Load Factor
PLR	Prime Lending Rate
PP	Project participant
PPA	Power Purchase Agreement
REC	Renewable Energy Certificate
SSC	Small Scale
SSC M&P	Simplified Modalities and Procedures
tCO_2e	Tonnes of carbon dioxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change

WACC	Weighted Average Cost of Capital
WTG	Wind Turbine Generator

2 Introduction

The project participant (PP), Giriraj Enterprises, has contracted with Lloyd's Register Quality Assurance Limited (LRQA) to undertake validation of the proposed project activity "Grid Connected Wind Power Project by M/s. Giriraj Enterprises in Madhya Pradesh". This report summarizes the findings of the validation process that has been conducted on the validation requirements of the CDM.

The validation has been undertaken by the team formed of the qualified personnel of LRQA as follows:

Ankush Jain	LRQA India	Team leader / GHG lead validator / CDM programme expert / Sector expert
Ponnada Rama Rao	LRQA India	Team member / GHG lead validator / CDM programme expert / Sector expert
Shubha Shanbhag	LRQA India	Technical reviewer and Sector expert
Imran Ustad[1]	LRQA India	Technical reviewer and Sector expert
Michiaki Chiba	LRQA Ltd	Decision maker

Personnel being engaged in a CDM project validation are qualified based on the established procedures of LRQA to assure the resource requirements satisfy all the requirements of competence criteria for an AE/DOE under CDM (CDM-Accreditation Standard version 04.0). LRQA is designated as an operational entity and holds the full responsibility of decision-making regarding the validation, in accordance with the accreditation requirements of the CDM-EB. The certificate of appointment of the team personnel is attached to this report.

[1] Imran Ustad was the TR during correction to Information and reporting finding

2.1 Objective

Validation is the process of an independent third party evaluation of a project activity on the basis of the PDD, against the requirements of the CDM as set out in Article 12 of the Kyoto Protocol, the CDM M&P, the present annex, subsequent decisions made by the COP/MOP and CDM-EB, and other rules applicable to the proposed project activity including the host country's legislation and its specific requirements for sustainable development. The validation follows the requirements of the current version of the CDM validation and verification manual (CDM VVM) to ensure the quality and consistency of the validation work and the report.

2.2 Scope

The scope of validation is an independent and objective review of the project design. Review of the PDD is conducted against the requirements of the Kyoto Protocol, the CDM M&P and relevant decisions of the COP/MOP and the CDM-EB. LRQA follows a risk-based approach in the validation focusing on the identification of significant risks for project implementation and generation of CERs. Validation is not meant to provide any consulting towards the PP, however, the corrective actions requests (CARs) and clarifications (CLs) might provide input for improvement of the project design. A validation conclusion shall become final subject to the decision maker's review by LRQA Ltd.

2.3 GHG Project Description

Giriraj Enterprises is involved in the installation of 15 MW wind power project (10 × 1.5MW) located at Village Barda Barkheda, Taluka Barod, Shajapur, Madhya Pradesh in India. The electricity will be sold to the connected grids for which PP has entered into Power Purchase Agreement (PPA) with the state utility company, i.e. Madhya Pradesh Power Trading Company Limited.

The exported electricity from the project activity will displace equivalent electricity from the connected grid which is primarily fossil fuel based and hence will result in reduced greenhouse emissions. The validation team confirms that the Wind Turbine Generator (WTGs) of Suzlon of capacity 1.5 MW are based on a proven technology used elsewhere in the host country for electricity generation using wind energy.

The project activity is categorized in the sectoral scope 1 – Energy industries (renewable/non-renewable sources).

The estimated GHG emission reduction is 24,216 tCO_2e per annum during the renewable crediting period of 7 years. The emission reduction has been estimated based on the ex-ante Plant Load Factor (PLF) estimated by Madhav Consultants, third party.

3 Methodology

3.1 Review of documents

The validation is performed primarily based on the review of the project design document (PDD) and the other supporting documentation.

The PDD Version 01.1 dated 24/03/2011 was initially reviewed. LRQA requested the PP to present supporting information and documents relating to the project design and such additional information and documents were also reviewed by LRQA.

Through the process of the validation, the PDD and the supporting documents of the same were evaluated to confirm the actions taken by the PP to the CARs and CLs issued by LRQA. The documents reviewed by LRQA are listed in Appendix B. LRQA reviewed the final version of the PDD version 02.6 dated 05/07/2012 to confirm that all changes agreed had been incorporated.

3.2 Site Visit & Follow-up interviews

A site visit and follow-up interviews with the stakeholders were conducted as detailed in the schedule as below:

Date	Location/ Address	Party Interviewed	Subjects Covered	Team Members on Site
29/09/2011	Tour of the site, Mahuriya site, Madhya Pradesh	Suzlon, Giriraj Enterprises	1. Tour of the site 2. Confirmation of performance related parameters 3. Confirmation on project boundary issues 4. Confirmation on feasibility of monitoring plan. 5. Discussion on environmental impact assessment of the project	Ankush Jain
29/09/2011	Tour of the substation, Sunsher and Agar substations, Madhya Pradesh			
29/09/2011	Local villages, Barda Barkheda	Local stakeholders	1. Confirmation on local stakeholders' identified. 2. Confirmation on the process taken for inviting local stakeholders. 3. Confirmation on minutes of meeting of the proceedings. 4. Views on the project activity	

A full list of persons interviewed is shown in Appendix C.

For details of all the findings of the desk review and site visit, please refer to the Validation Protocol and Findings in Appendix F.

3.3 Resolution of clarification and corrective action requests

LRQA applies the risk based approach aimed at focusing on high risk issues to the validation results whilst not omitting any part of the mandatory processes.

Findings identified in the process are indicated under the titles corrective action requests (CARs) and clarification requests (CLs) and forward action requests (FARs).

CARs and CLs require the PP to take relevant actions. Criteria for judging items as CAR or CL are as follows:

Corrective action request (CAR):

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

Clarification request (CL):

- information is insufficient or not sufficiently clear to determine whether the applicable CDM requirements have been met.

FARs are to be raised to highlight issues related to project implementation that require review during the first verification of the project activity. FARs do not relate to CDM requirements for registration.

CARs and CLs are to be resolved or closed out if the PP modifies the project design, rectifies the PDD or provides adequate additional explanations or evidence that satisfies the concerns. If this is not completed, the project activity cannot be recommended for registration to the CDM Executive Board.

For details of the nature of the issues raised, the nature of the responses provided, the means of validation of such responses and the resulting changes in the PDD or supporting annexes please refer to the Validation Protocol and Findings in appendix F.

3.4 Internal quality control

A technical review by a qualified person independent from the validation team and a review by an authorized decision maker were conducted prior to the submission of the validation report to the PP and prior to requesting the registration of the project activity.

4 Validation protocol and conclusions

This section provides an overview of the validation activities undertaken by LRQA in order to arrive at the final validation conclusions and opinion. It includes general conclusions based on the Clean Development Mechanism Validation and Verification Manual version 01.2. Further details in relation to each element of the protocol and each finding are shown in the Validation Protocol and Findings – Appendix F.

The protocol is structured based on the main validation requirements as follows:

- Approval by the Parties involved
- Participation requirements
- Project design document
- Project description
- Baseline and monitoring methodology
  - Applicability of the selected methodology
  - Project boundary
  - Baseline identification
  - Algorithms and/or formula used to determine emission reductions
- Additionality of a project activity
  - Prior consideration of the CDM
  - Identification of alternatives
  - Investment analysis

- Barrier analysis
- Common practice analysis

- Monitoring plan
- Local stakeholder consultation
- Environmental impacts.

4.1 Approval

A CDM project shall be approved by the Parties involved.

The host Party of the proposed project is India. India ratified the Kyoto Protocol on 26/08/2002. The Designated National Authority (DNA) is National Clean Development Mechanism Authority (NCDMA) established in the Ministry of Environment and Forests (MoEF), Government of India. The information of the DNA has been confirmed by the validation team against the relevant information on the UNFCCC CDM website (http://cdm.unfccc.int/DNA/index.html). A letter from approval from the host country, reference number 4/16/2011-CCC has been received. The copy of the LoA was verified against the original LoA issued by the host country DNA. The contents of the LoA and the signature of the authorised issuer were also compared with those approvals issued by the host country DNA for other CDM projects. This letter of approval confirms the contribution of the project activity "Grid Connected Wind Power Project by M/s. Giriraj Enterprises in Madhya Pradesh" to the sustainable development of India.

The project has currently been proposed as a unilateral CDM project and the Annex I Party has not yet been identified. In line with the provision of paragraph 57 of the 18th meeting of the CDM-EB, registration of a project activity can take place without an Annex I Party being involved at the stage of registration.

For details relating to this section, please refer to the Validation Protocol in Appendix F.

4.2 Participation requirements

Giriraj Enterprises is private entity having its registered office in India.

The contact details of the PPs are correctly provided in Annex 1 of the PDD.

Participation in the project activity of the PPs has been authorized, as confirmed in the LoAs issued by the DNAs of the Parties concerned. The team confirmed that no entities other than the authorized entities are indicated as project participants in the PDD.

For details relating to this section, please refer to the Validation Protocol in Appendix F.

4.3 Project design document

The PDD was checked and confirmed as complete against the Guidelines for completing the simplified project design document (CDM-SSC-PDD) and the form for proposed new small scale methodologies (CDM-SSC-NM) referring to the latest version under the VVM track applicable to the validation.

A valid form of the CDM-SSC-PDD is used that is the current form under VVM track as available on the CDM website.

For details relating to this section, please refer to the Validation Protocol in Appendix

F.

4.4 Project description

Giriraj Enterprises is involved in the installation of 15 MW wind power project (10 × 1.5MW) located at village Barada Barkheda, taluka Barod, Shajapur, Madhya Pradesh in India. Unique coordinates of the project activity are as follows:

Sr. No.	Location Nos.	Latitude	Longitude
1.	M-12	N 23° 51' 55.2"	E 76° 03' 47.5"
2.	M-34	N 23° 51' 05.2"	E 76° 03' 39.7"
3.	M-35	N 23° 50' 53.8"	E 76° 03' 42.0"
4.	M-36	N 23° 50' 45.1"	E 76° 03' 54.6"
5.	M-45	N 23° 50' 25.2"	E 76° 04' 09.6"
6.	M-55	N 23° 48' 39.7"	E 76° 05' 11.9"
7.	M-90	N 23° 50' 05.0"	E 76° 05' 26.5"
8.	M-91	N 23° 49' 56.9"	E 76° 05' 33.9"
9.	M-92	N 23° 49' 44.7"	E 76° 05' 38.5"
10.	M-93	N 23° 49' 34.6"	E 76° 05' 25.5"

The electricity will be sold to the connected grids for which PP has entered into Power Purchase Agreement (PPA) with the state utility company, i.e. Madhya Pradesh Power Trading Company Limited. The exported electricity from the project activity will displace equivalent electricity from the connected grid which is primarily fossil fuel based and hence will result in reduced Greenhouse Gas emissions. The validation team confirms that the Wind Turbine Generator (WTGs) of Suzlon of capacity 1.5 MW are based on a proven technology used elsewhere in the host country for electricity generation using wind energy.

The project activity is categorized in the sectoral scope 1 – Energy industries (renewable/non-renewable sources).

The estimated GHG emission reduction is 24,216 tCO_2e per annum during the renewable crediting period of 7 years. The emission reduction has been estimated based on the ex-ante Plant Load Factor (PLF) estimated by Madhav Consultants, third party.

LRQA confirms that the project description included in the PDD is accurate and complete. This description provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation.

The project description was validated by document review including proposals, purchase orders, commissioning certificates, power purchase agreement, interview, and the on site visit.

Sustainable development

The host Party's DNA confirmed the contribution of the project activity to the sustainable development of the host Party.

Small scale CDM criteria

This project generates renewable energy that displaces electricity from the electricity grid system. The project involves installation of ten turbines each of 1500KW capacity aggregating to 15 MW. From the interview of PP, the validation team has confirmed that the PP does not intend to increase the generation capacity of this project.

The validation team confirmed that the total size of the project will remain under 15MW, the limits of small-scale project activity Type I "Renewable energy project activities with a maximum output capacity equivalent to up to 15 MW (or an appropriate equivalent)" during every year of the crediting period. Hence, LRQA confirms that the project activity satisfies the criteria set out for use of the SSC M&P with respect to Type I activities.

For details relating to this section, please refer to the Validation Protocol in Appendix F.

4.5 Baseline and monitoring methodology

Applicability of the selected methodology to the project activity

The project activity applied the approved baseline and monitoring methodologies: AMS.I.D, Version 17 "Grid connected renewable electricity generation". The methodology is valid from 17/06/2011 and is the latest version available at the time of submission of this report. The web-hosted PDD refers to AMS.I.D Version 16 which was changed to Version 17 by the PP.

LRQA confirms unambiguously that the selected methodology is applicable to this project activity. The project applicability was confirmed against each condition in the approved methodology selected. Appendix F includes the list of each applicability condition, the steps taken to validate each one and the conclusions about its applicability to the proposed project activity.

For details relating to this section, please refer to the Validation Protocol in Appendix F.

Project boundary

The project boundary has been validated through documentation review on the applied methodology, interview and field survey that included purchase orders, commissioning report, physical site and equipment inspection. This information was substantiated via cross check with similar registered wind power projects using similar technology, technical specifications. Through the processes taken, the validation team confirmed that the identified project boundary, the selected sources and the gases were justified for the project activity and they meet the requirements of the approved methodology.

For details relating to this section, please refer to the Validation Protocol in Appendix F.

Baseline identification

The baseline scenario identified in the PDD has been assessed against the requirements in the approved methodology AMS.I.D Version 17. LRQA can confirm that the procedure included in this methodology to identify the most reasonable baseline scenario, has been correctly applied.

The steps taken to assess the baseline identification are described in the Validation protocol in Appendix F.

LRQA confirms that:

- All the assumptions and data used by the project participants are listed in the PDD, including their references and sources;
- All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD;
- Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable;
- Relevant national and/or sectoral policies and circumstances are considered and

listed in the PDD;

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

Algorithms and/or formula used to determine emission reductions

LRQA has confirmed that the steps taken and the equations applied to calculate baseline emissions and emission reductions comply with the requirements of the approved methodology AMS.I.D, Version 17.

The steps taken to assess the algorithms and/or formula used to determine emission reductions are described in the Validation protocol in Appendix F.

LRQA confirms that:

- All assumptions and data used by the project participants are listed in the PDD, including their references and sources;
- All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD;
- All values used in the PDD are considered reasonable in the context of the proposed CDM project activity;
- The baseline methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions;
- All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.

4.6 Additionality of a project activity

The project additionality was demonstrated by the PP using the Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities, Version 08; and Non-binding best practice examples to demonstrate additionality for SSC project activities, Version 01.

Prior consideration of CDM

The start date of the project activity is 03/01/2011 which is after 02/08/2008. For confirmation of prior consideration of CDM latest version of the Guidelines on the demonstration and assessment of prior consideration of the CDM, has been considered.

The PP had notified UNFCCC secretariat and DNA of India within six months from the start date and therefore, the proposed project activity complies with the requirements of the latest version of the Guidelines on the demonstration and assessment of prior consideration of the CDM.

The steps taken to assess the prior serious consideration of the CDM are described in the Validation protocol in Appendix F.

Identification of alternatives

The list in the Validation Protocol – Appendix F section 6.b, shows the alternatives given in the PDD, and clearly states how LRQA has validated whether these alternatives are credible and complete.

It is the opinion of LRQA that the list of alternatives provided in the PDD are credible and complete considering the technology and circumstances of the proposed Project activity as well as the investor business.

Investment analysis

The Investment analysis option has been used to demonstrate the additionality of the proposed project activity. LRQA confirms that the PDD provides evidence that this project activity would not be economically or financially feasible, without the revenue from the sale of CERs.

The PPs have shown that the project activity is additional by demonstrating that the financial returns of the proposed CDM project activity would be insufficient to justify the required investment.

For assessing the additionality of this project activity LRQA has complied with the latest version of the "Guidance on the Assessment of Investment Analysis" as provided by the CDM Executive Board and with other relevant guidance including the latest guidelines on plant load factors "Guidelines for the reporting and validation of plant load factors".

For details about the validation of the parameters used in the financial calculations and assessment of the benchmark applied, please refer to the Validation protocol in Appendix F.

LRQA confirms that the underlying assumptions for the investment analysis are appropriate and that the financial calculations are correct.

4.7 Monitoring Plan

The PDD includes a Monitoring Plan based on the approved monitoring methodology AMS.I.D Version 17.

LRQA confirms that the Monitoring Plan described in the PDD complies with the requirements in the Monitoring Methodology and that the PPs will be able to apply this Monitoring Plan following the monitoring arrangements described in it.

For details about the validation of the Monitoring Plan, please refer to the Validation protocol in Appendix F.

4.8 Local stakeholder consultation

The PPs invited Local Stakeholders to comment on the proposed project activity on the 02/02/2011 prior to the publication of the PDD on the UNFCCC website. The local stakeholder consultation meeting was held in Suzlon Central Monitoring Station Centre at Mahuriya wind site near the project activity and the following persons and entities attended this meeting. The meeting was attended by local villagers, officials and employees of Suzlon, the PP and their consultant, Mitcon.

LRQA confirms that the stakeholder consultation process targeted stakeholders and was appropriate for identifying stakeholders' opinions about the project and collecting their views.

For details about the steps taken to assess the adequacy of the Stakeholder consultation, please refer to the Validation protocol in Appendix F.

4.9 Environmental impacts

LRQA has confirmed that the host country regulations do not require any Environmental Impact Assessment (EIA) to be conducted for the project activity.

For details about the document review and determination of whether the PPs have undertaken the analysis of environmental impacts, please refer to the Validation protocol in Appendix F.

4.10 Summary of Changes

Significant changes made to the original PDD published for Global Stakeholder Consultation Process are summarised below. The PDD version 01.1 dated 24/03/2011 was modified and several changes occurred due to the result of validation process. The PDD version 02.6 dated 05/07/2012 includes all these changes.

For details about the results of the responses to CARs and CLs, discussions on revisions to project documentation and the detailed changes to the PDD coming from the validation process, please refer to the Validation Findings Log in the Validation Protocol in Appendix F.

1. Unique coordinates were corrected in closure of CL-05
2. Description of input values used in investment analysis in closure of CAR-03
3. Grid emission factor was revised in closure of CAR-04. This has resulted in change in ex-ante emission reduction estimate to 24,216 tCO_2/annum from 24,456 tCO_2/annum
4. Revision in monitoring plan in closure of CAR-05

5 Comments by parties, stakeholders and NGOs

In accordance with the requirement of the Procedures for Processing and Reporting on Validation of CDM project activities, the PDD is to be made publicly available for 30 days subject to confidentiality provisions agreed with the PP, to enable comments to be received from Parties, stakeholders and UNFCCC accredited NGOs on the validation and registration requirements.

The PDD was made publicly available in accordance with the requirements of the procedure for the period of 26/03/2011 to 24/04/2011 as per http://cdm.unfccc.int/Projects/Validation/DB/RP76WUG3MTIRULIE6H6UP7LVPQ6IJ0/view.html.

Three comments were received during the period and the comments were made publicly available as per http://cdm.unfccc.int/Projects/Validation/DB/RP76WUG3MTIRULIE6H6UP7LVPQ6IJ0/view.html.

The comments received have been taken into consideration as detailed in Appendix D of this report.

6 Validation Opinion

LRQA has undertaken the validation of the proposed project activity "Grid Connected Wind Power Project by M/s Giriraj Enterprises in Madhya Pradesh" based on the requirements of CDM as set out in Article 12 of the Kyoto Protocol, the CDM M&P, the present annex, subsequent decisions made by the COP/MOP and CDM-EB, and the other rules applicable to the proposed project activity including the host country's legislation and its specific requirements for sustainable development.

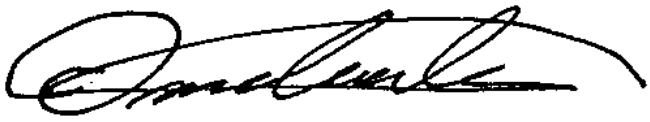
The project activity is installation of new 15 MW wind power project (10 × 1.5MW) at Barda Barkheda village, Barod Taluka, Shajapur, Madhya Pradesh in India. The electricity generated from the project activity will be sold to the connected grid for which PP has entered into Power Purchase Agreement (PPA) with the state utility company, i.e. Madhya Pradesh Power Trading Company Limited. The exported electricity from the project activity, thus, will displace equivalent electricity from the connected grid which is primarily fossil fuel based and hence will result in reduced greenhouse emissions.

In order to arrive at the final validation conclusions and opinion, LRQA carried out review of project documents, assessment of compliance with and application of the approved small scale methodology as well as the approved methodological tools, field survey and physical on site assessment of the project site and interviewing the local stakeholders. There was no project component or issues excluded from the validation.

Through the validation process, the validation team identified 6 CARs and 5 CLs. The PP has taken necessary actions and all CARs have been successfully closed. The PP has taken action on the raised issues and submitted to LRQA the revised PDD, revised investment analysis spreadsheet, revised emission reduction spreadsheet and other supporting evidence. LRQA reviewed the response and actions taken by the PP, and all the findings were closed through the process.

The validation team is of the opinion that the proposed project activity conforms to all the relevant UNFCCC requirements for the CDM as well as the host country's national requirements, and if implemented as designed, is likely to achieve the validated emission reductions of 24,216 tCO_2 per annum during the renewable crediting period of 07 years and contribute to the sustainable development of the host country. Therefore LRQA requests the registration of "Grid Connected Wind Power Project by M/s Giriraj Enterprises in Madhya Pradesh" to the CDM Executive Board as a CDM project activity.

Decision Maker



Michiaki Chiba

Climate Change Manager – Asia & Pacific

Date: 20/08/2012

7 Appendices

7.1 Appendix A: Letter of approval for the project by the host and investing country DNA

Letter of Approval from the DNA of India dated 20/09/2011

7.2 Appendix B: List of documents reviewed

Category A documents (documents prepared by the PP)

1. Offer for Supply of 10 nos of S82 Suzlon 1500KW wind turbine generator at Mahuriya site dated: 27/12/2010
2. Offer for Supply of 10 nos of tubular tower component for wind turbine generator at Mahuriya site dated: 27/12/2010
3. Offer for Supply of 10 nos of transformer, components of renewable energy for wind turbine generator at Mahuriya site dated: 27/12/2010
4. Offer for Supply of civil work including foundation and other civil works for wind turbine generator at Mahuriya site dated: 27/12/2010
5. Offer for work order for electrical works for wind turbine generator at Mahuriya site dated: 27/12/2010
6. Offer for services for erection and commissioning for wind turbine generator at Mahuriya site dated: 27/12/2010
7. Offer for sale of land for wind turbine generator at Mahuriya site dated: 27/12/2010
8. Offer for Operation and maintenance contract for wind turbine generator at Mahuriya site dated: 27/12/2010

9. Purchase order for Supply of 10 nos of S82 Suzlon 1500KW wind turbine generator at Mahuriya site dated: 03/01/2011
10. Purchase order for Supply of 10 nos of tubular tower component for wind turbine generator at Mahuriya site dated: 03/01/2011
11. Purchase order for Supply of 10 nos of transformer, components of renewable energy for wind turbine generator at Mahuriya site dated: 03/01/2011
12. Purchase order for Supply of civil work including foundation and other civil works for wind turbine generator at Mahuriya site dated: 03/01/2011
13. Work order for electrical works for wind turbine generator at Mahuriya site dated: 03/01/2011
14. Work order for services for erection and commissioning for wind turbine generator at Mahuriya site dated: 03/01/2011
15. Order for sale of land for wind turbine generator at Mahuriya site dated: 03/01/2011
16. Land sale deeds

17. Technical evaluation report of wind turbine generators in Madhya Pradesh state, prepared by Madhav Consultants, dated: 31/12/2010
18. Loan application dated: 11/01/2011

19. Commissioning certificate dated: 08/04/2011, Ref: No./SE/O&M/SJR/11-12/2252
20. Commissioning certificate dated: 08/04/2011, Ref: No./SE/O&M/SJR/11-12/2253

21. Commissioning certificate dated: 08/04/2011, Ref: No./SE/O&M/SJR/11-12/2254
22. Commissioning certificate dated: 28/06/2011, Ref: No./SE/O&M/SJR/11-12/4012
23. Commissioning certificate dated: 28/06/2011, Ref: No./SE/O&M/SJR/11-12/4111

24. Tariff order for procurement of power from wind electric generator, prepared by Madhya Pradesh Electricity Regulatory Commission for May 2010.
25. Power Purchase Agreement with MP Power Trading Company Limited (MP TRADECO) dated: 23/07/2011
26. Minutes of local stakeholders' meeting, including attendance sheet and photographs
27. MPERC permission for setting up 15MW wind power project dated: 24/02/2011
28. Minutes of meeting on investment decision dated: 01/01/2011
29. Inter office communication on admin expense dated: 01/01/2011
30. Technical specification of S82 Wind Turbine Generator
31. Wind Energy Information prepared by TERI
32. Insurance Tariff advisory Committee (TAC) order
33. Giriraj Enterprises Partnership deed, dated: 01/04/2008
34. Clarification letter from Bank of Baroda, dated: 04/07/2012

Category B documents (other documents referenced)

1. Grid connected renewable electricity generation, version 16.
2. Grid connected renewable electricity generation, version 17.
3. Tool to calculate the emission factor for an electricity system" Version 02.2.1
4. CO_2 Baseline Database for the Indian Power Sector, User Guide Version 6.0
5. User guide version 06 CO_2 baseline database for Indian power sector.
6. Clean Development Mechanism Small Scale Project design document form (CDM-SSC - PDD)
7. 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
8. Guidelines on the Assessment of Investment Analysis, Version 05.
9. Guidelines on the Demonstration and Assessment of prior consideration of the CDM (version 04)
10. Clean Development Mechanism Validation and Verification Manual (Annex 3 of CDM-EB meeting 51)
11. Eligibility Criteria for Host Country Approval, National CDM Authority, Ministry of Environment & Forests
12. Notification by Ministry of Environment & Forests dated 14/09/2006
13. Central Electricity Authority (CEA), Installation and operation of meters regulation, Amendment 2010.
14. International Monetary Fund (IMF) World Economic Outlook (WEO) database, September 2011.

7.3 Appendix C: List of persons interviewed

S. No.	Name	Organization
1.	Jitendra Singh Chauhan	Villager, Barada

2.	Gajendra Singh Chauhan	Villager, Barada
3.	Ganpati Gupta	Suzlon
4.	Dinesh Chandhari	Suzlon
5.	Shaikh Rais	Malpani Group
6.	Kailas Bankar	Malpani Group
7.	Kishor Deshmukh	Mitcon
8.	Vinay Tripathi	Mitcon
9.	Prafulla Khinvasara	Giriraj Enterprises
10.	Anil Sharma	Sunsher Substation
11.	Dharmendra Sharma	Sunsher Substation
12.	Bijendra Singh Parihar	Agar Substation
13.	Vinayvu Painya	Agar Substation

7.4 Appendix D: How due account has been taken to the public input made to the validation requirements

The PDD was made publicly available in accordance with the requirements of the Procedures for processing and reporting on validation of a CDM project activity for the period of 26/03/2011 to 24/04/2011 as per http://cdm.unfccc.int/Projects/Validation/DB/RP76WUG3MTIRULIE6H6UP7LVPQ6IJ0/view.html.

Three comments were received during the period and the comments were made publicly available as per http://cdm.unfccc.int/Projects/Validation/DB/RP76WUG3MTIRULIE6H6UP7LVPQ6IJ0/view.html .

Comments received have been taken into consideration as follows:

Date	Comment
Comment 01, dated: 27/03/2011	From the PDD uploaded, it is not clear as to whether post tax project IRR is compared with pretax benchmark? If the financial analysis is included in the PDD it would be helpful to know the assumptions made Submitted by: S B
Response by the PP	In the PDD post-tax project IRR has been compared with commercial lending rate. Pre-tax benchmark will not be able to include the savings from income tax from other business due to the impact of high depreciation rate enjoyed by wind power projects. Therefore, it is conservative to compare post-tax project IRR with commercial lending rate.
Evaluation of LRQA	Validation team confirmed that post tax IRR has been compared with commercial lending rate[2]. For details related to appropriateness of benchmark and financial indicator, refer CL-04 and its resolution in section 6c of Protocol below.
Comment 02, dated: 02/04/2011	The PP states that they have considered 80% accelerated depreciation. However the PDD is silent on the tax shielding as a result from accelerated depreciation. PPs cleverly do not consider the accounting tax offsetting in their companies while calculating the IRR. This is evident from the recently registered projects and those requesting registration. The DOE is therefore requested to critically analyze how the accelerated depreciation benefit has been taken into account and confirm the accounting of the cash inflows as a

[2] Commercial lending rate, prime lending rate and benchmark prime lending rate represents lending rate generally followed in the host country and has been interchangeably used in the report.

	result of the negative tax liability in the initial years. DOE should not be misguided by the financial presented by the PP or consultant which are custom made for CDM purposes and not the actual financial considered at the investment decision. Note that considering cash inflows results in an increase in the IRR making wind projects a profitable venture. Please also check the offer from WTG supplier and Purchase Order while validating the PLF. It may be so that the third party report which is made after investment decision making - indicates a lower PLF. The PLF seems to be very low. Also check the tariff order. Benchmark: No details are provided on the beta estimation. Is the beta levered or unlevered and what is the reason?? How is the beta appropriate for irr chosen? Stakeholder consultation: No details provided on which all stakeholders attended the meeting. Benchmark: The benchmark is too high. Even after considering CDM benefits the IRR will not cross the benchmark. Then WHY did the PP go ahead with this non-profitable venture?? This clearly indicates the benchmark is made high just to prove additionality and is not the real benchmark expected by the PP. Why has the PP considered Reliance Infrastructure Ltd for beta determination when Reliance Infrastructure Ltd. has many other businesses other than pure power generation? How come the risk profile of Reliance Infrastructure Ltd match with the project activity which involves wind electricity generation? What is the vintage considered for beta determination? Is considering only one year appropriate? Why tax computations for beta are only considered for one year?? What is the basis for considering a particular vintage for the market returns, beta estimation and risk free returns? Why the particular index is considered for calculating the market returns? DOE to evaluate whether the PP has made any other investments considering the same index. Only because a particular index results in a higher benchmark?? Project cost seems to be very high. Are the quotations real or fabricated? Are REC benefits being claimed? How will the DOE ensure that the PP does not claim REC benefits during project operation? DOE to submit a negative opinion in case the IRR does not cross the benchmark even after considering CDM benefits as it clearly indicates the projects unviability in any case. Why would any one invest in a loss making venture? And if the PP can still go ahead with the project - it indicates that the benchmark is fabricated and is not considered by the PP while making the investment decision!! DOE to validate this critically!! How are the investment decisions really made??? DOE to check if the financials correctly apply the 10 year tax holiday - i.e. not liable for taxes for 10 years from the initial 15 years. Submitted by: Babloo
Response	Income tax savings from other businesses has already been accounted in the investment

by the PP	analysis. Plant load factor has been taken from the offer submitted by the technology supplier. Further, the same value has been considered and appraised by bank for loan application and assessed by the third party. Local stakeholders' included employees of Suzlon and its group companies involved in this project and local villagers residing in and around the project activity. Benchmark used for the project is commercial lending rate and not derived from Capital Asset Pricing Mechanism (CAPM), therefore, does not use beta and market return. Project cost has been taken from offer submitted by Suzlon. The project cost is also same as mentioned in the firm purchase orders, bank loan application and sanction letters. PPA has been signed with state transmission company at preferential tariff. Renewable Energy Certificates (REC) benefits cannot be claimed by the projects applying preferential tariff. Therefore, benefit from REC is not applicable for the project activity. Investment in the project has been done considering its environmental benefits and revenues from CDM. We think that future prospects of CER prices are bright and revenues from this will make project a profitable venture. Tax holiday has been computed for consecutive 10 years in first 15 years in accordance with section 80IA. Further, the tax holiday has been considered from the period when the project makes profitable returns.
Evaluation of LRQA	Validation team confirms from its local expertise that income tax savings due to high depreciation rate enjoyed by wind power projects has been correctly accounted. The plant load factor has been validated from the review of offer submitted by the technology supplier, PLF study report and bank loan application. Reasonableness of the plant load factor has also been confirmed from the review of applicable tariff order of Madhya Pradesh. For detailed validation of the PLF please refer to section 6c of the Protocol below. Project cost has been validated from the review of offer provided of the technology supplier. Validation team confirms the appropriateness of the project cost from the review of firm purchase orders, loan application and sanction letters. Suitability of the project cost has been confirmed through the local expertise and comparison with other similar projects. For detailed valid of input values refer to section 6c of the Protocol below. Validation team confirms from the review of PPA that it was signed with MP TRADECO, a state transmission company[3]. Validation team also confirmed from the review of applicable tariff order that preferential tariff has been applied for the project activity. Validation team further confirms that REC will not be issued to the projects applying preferential tariff[4]. Validation team confirms from the review of attachment A to appendix of the simplified modalities and procedures for small-scale project activities and non-binding best practice examples that it does not require to check if the IRR after considering CDM benefits crosses the benchmark. Validation team confirms from its local expertise that income tax holiday and tax

[3] http://www.mptradeco.com/mptradeco-about-us.html

[4] https://www.recregistryindia.in/index.php/general/publics/faqs (Refer Q5)

	computation is in accordance with the host country rules. For detailed valid of input values refer to section 6c of the Protocol below.
Comment 03, dated: 19/04/2011	1) Purpose of the project and how the proposed project activity reduces greenhouse gas emissions are not briefed in the PDD. Refer section A.2. 2) How environmentally safe and sound technology is used for the project and details of technology transfer is not demonstrated adequately. Refer A.4.2 3) Non- debundling nature of the project activity is not adequately justified as per EB54 Annex 13 (Debundling tool). Refer A.4.5. 4) Please check the project boundary of the project activity is not based on the guidance of the applicable project category. 5) Why has option A (Combined margin) been chosen for calculating emission factor is not justified. Refer B.6 6) The justification of choosing IRR as financial indicator is not adequately justified. Whether it is equity or project IRR, pre-tax or post tax is not mentioned in the PDD. 7) The emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants. 8) Basis of choosing PLR as benchmark is not adequately demonstrated in the PDD 9) All the issues of investment analysis guidelines are not discussed in the PDD. Refer B.5. 10) Justification of parameters including O&M, insurance, loan, derating, escalation, and tariff are not demonstrated with justification. Refer B.5. 11) Please provide a proof for proposed debt to equity taken at the investment decision. Refer B.5 12) Proof for PLF is not justified. 13) Date of offer is not provided 14) Project cost is not as per state norms. Refer B.5. 15) O&M charges and its escalation is not as per norms 16) IT rate assumed is not as per standard practice. 17) The application of MAT which is based on tax holiday while calculating WACC is not appropriate. 18) The PP has not explained and justified the key assumptions and rationale. 19) The PP and consultant has not Illustrate in a transparent manner all data used to determine the baseline emissions. 20) Not demonstrated that the proposed project activity is additional as per options provided under attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities. 21) National policies and circumstances relevant to the baseline of the proposed project activity are not being summarized clarify. 22) Explain and justify all relevant methodological choices for the proposed project activity 23) Data that is calculated with equations provided in the approved category or default values specified in the category should not be included in the compilation. 24) CER revenue assumed is not consistently applied 25) Project cost is not as per norms, DOE has to check and clarify. 26) The project cost of the project should be based on offer and not on purchase order or tariff order. 27) O&M charges considered are on higher side. Pls. clarify. 28) Benchmark calculation is not as per WACC tool (EB53 Annex 8) 29) Whether pre-tax or post tax IRR is selected is not demonstrated in the PDD. 30) The basis of calculation of benchmark is not documented in the section B.5. PLR is not acceptable benchmark for the project. WACC based on Government bonds, risk premiums should be taken. 31) Prior consideration of CDM which is important for the determination of additionality is not documented in the section B.5 of the PDD. 32) Date of PPA is not mentioned in the prior consideration of CDM 33) The selection of simple OM based on low cost/must run resources is not

	adequately justified. Refer B.6.1 34) PP has not provided for each parameter the chosen value or, where relevant, the qualitative information. 35) Please Provide the actual value applied. Where time series of data is used, where several measurements are undertaken or where surveys have been conducted, provide detailed information. 36) Explain and justify the choice for the source of data. 37) Ex-ante option of calculating OM is not adequately demonstrated. Step 3 of Refer B.6.1 38) Power plants registered as CDM project activities should be included in the sample group that is used to calculate the operating margin if the criteria for including the power source in the sample group apply. This argument is not demonstrated. B.6.1 39) The selection of option (out of two) for calculating OM is not adequately documented with justification. CEA calculation is based on net electricity generation, the average efficiency of each power unit and the fuel types used in each power unit. Step 4 of B.6.1 40) The argument that CEA data for build margin is calculated as per Emission factor tool is not documented. B.6.1 41) Spread sheet is not provided. The data should be presented in a manner that enables reproducing of the calculation of OM, BM, and CM. 42) The justification of negligible project emissions for wind project is not as per AMS. I. D ver 16.0 EB 54). 43) The emission factor value (Southern grid) for calculating baseline emission is wrong. Refer B.6.3 44) Net electricity should be continuously monitored, hourly measured and at least monthly recorded. Refer B.7.1 45) Metering regulations as per CEA norms is not adequately followed in monitoring plan. Refer B.7.2. 46) Where the values have been measured, include a description of the measurement methods and procedures that comply with the guidance provided under general guidance. 47) Provide a detailed description of the monitoring plan, including an identification of the data to be monitored and the procedures that will be applied during monitoring. 48) The PP should include sources of data that will be actually used for the proposed project activity (e.g. which exact national statistics, actual measurement etc.). 49) Where the parameters are to be measured in accordance with the guidance of the approved project category or the general guidance to the indicative methodologies, specify the measurement methods and procedures including accepted industry standards or national or international standards which will be applied, which measurement equipment is used, how the measurement is undertaken. 50) Which calibration procedures are applied, what is the accuracy of the measurement method, who is the responsible person / entity that should undertake the measurements and what is the measurement interval? Submitted by: Fleming
Response by the PP	1) Project activity is wind power project. The description has already been included in section A.2 2) Project reduces emissions and therefore is environmentally safe and sound. Appropriate description is already included in the PDD 3) Non-debundling nature has already been described in the relevant section of the PDD 4) Project boundary is in accordance with the applied methodology 5) Option A (Combined margin) is one of the options given to the PP for emission reduction calculation in accordance with the applied methodology. Further, the project supplies electricity to the grid, therefore, option A is more relevant. 6) Post tax project IRR has been chosen as financial indicator. Refer PDD 7) Only grid power plants have been included. Refer PDD 8) Prime Lending Rate (PLR) is appropriate benchmark for project IRR in

	accordance with Guidance 12 of Guidelines on assessment of investment analysis, Version 05. 9) Investment analysis is in conformance with Guidelines on the assessment of investment analysis 10) O&M cost is also in accordance with offer letter by technology supplier. 11) Debt equity ratio has been considered from the previous investment in similar activity. 12) PLF has been considered from the study report prepared by third party, Madhav Consultants. 13) Date of offer is not required to be included in the PDD. 14) Project cost is as per the offer submitted by the technology supplier. Also, actual project cost is same as in the offer. 15) O&M charges and escalation is as per norms and similar in other projects 16) Income Tax (IT) rate is as per the taxation rates prevailing in India 17) WACC has not been used in the additionality of the project 18) Key assumptions and rationale for input values used in investment analysis is already included in the PDD. 19) Data used for baseline emissions includes CO2 database for Indian power sector, Version 06 has already been described in the PDD. 20) Investment barrier has been used for demonstration of additionality which is as per attachment A to Appendix B. 21) National policies and circumstances has already been included in the PDD 22) All methodological choices has been described in the PDD 23) Default values and data calculated from equations has not been included in the PDD 24) CER revenues have been consistently applied. 25) Project cost is as per the offer submitted by the technology supplier. Also, actual project cost is same as in the offer. 26) Project cost is based on offer. 27) O&M cost is not on higher side. Refer other similar registered CDM projects. 28) Benchmark is not WACC, therefore, comment not applicable. 29) Post-tax project IRR has been used. 30) PLR as a benchmark for project IRR is appropriate as per Guidance 12 of Guidelines on the assessment of investment analysis, Version 05. 31) Prior consideration of the CDM has been through notification to UNFCCC and Indian DNA. 32) Prior consideration of CDM is through notification. Therefore, for justifying prior consideration of CDM, date of PPA is not required. 33) Selection of simple OM has already been justified in the PDD. 34) Value for each parameter has been provided in the PDD. 35) Actual values have been provided in the PDD. 36) Source of data has been explained and justified. 37) Ex-ante option for OM has been explained and justified in the PDD. 38) Sample group for OM includes registered CDM projects, and for BM registered CDM projects are excluded. 39) Ex-ante OM option has been selected and documented in the PDD. 40) Data source used for BM has been documented in the PDD. 41) Spreadsheet for emission reduction calculation has been provided to the DOE. 42) Project emissions are nil as per AMS.I.D, Version 17 43) Emission factor values for NEWNE grid are correct and sourced from CO2 baseline database for Indian Power sector, Version 06. 44) Net electricity is continuously monitored, measured and monthly recorded. 45) Meter regulations are as per CEA norms. 46) Measurement method is already included in the PDD, which is in accordance with the General Guidance on small scale methodologies. 47) Detailed monitoring plan has already been included in the PDD. 48) Source of data for monitoring has already been included in the PDD. 49) Measurement methods are already included in the PDD.

	50) Calibration procedures, accuracy of the meters, responsible entity and measurement interval has already been included in the PDD.
Evaluation of LRQA	(1). Purpose of the project activity is installation of wind power project to displace the electricity generated from fossil fuel based power plants, already included in the relevant section of the PDD. For validation of emission sources and gases refer section 5a of the protocol below. (2). The project generates renewable electricity from wind power project. This activity leads to reduction in emissions including those of Greenhouse gases. Therefore, project is considered environmentally safe and sound. Validation team further confirms its sectoral expertise. Further, section A.4.2 of the PDD mentions that the project activity does not emit harmful GHGs or any other harmful gases. Validation team confirms this from the review of applied methodology, site visit, and its sectoral expertise (3). The project activity is not a debundled component of large scale project activity. Section A.4.5 of the PDD correctly presents the debundling justification in accordance with the latest version of Guidelines on assessment of debundling for SSC project activities. Validation team confirmed from document review, interviews and site visit. (4). Validation team confirms from the review of applied methodology and general guidelines to SSC methodologies that project boundary has been correctly presented and justified. For further information refer section 5 of the Protocol below. (5). Use of Option A (Combined margin) is in accordance with the applied methodology. Further, validation team confirms that the project activity supplies electricity to the grid, therefore, combined margin emission factor is more appropriate than Option B (weighted average emissions of current generation mix). For further information refer section 5c of Protocol below. (6). The PDD correctly mentions that the post-tax project IRR has been used as financial indicator. Choice of financial indicator is based on the parameter considered at the time of investment decision by the PP. Validation team confirms from the interview of the PP that pos-tax project IRR was chosen as financial indicator at the time of investment decision making. For validation on appropriateness of benchmark refer section 6c of Protocol below. (7). Validation team confirms from the review of PDD, emission reduction calculations that off-grid power plants are not included in calculation of emission factor for project electricity system. For detailed validation of emission reduction calculation refer section 5c of Protocol below. (8). PLR is considered appropriate benchmark in accordance with the Guidance 12 of Guidelines on the assessment of investment analysis, Version 05. For validation on appropriateness of benchmark refer section 6c of Protocol below. (9). Guidelines for completing CDM-SSC-PDD; and Validation and Verification Manual do not require PDD to discuss all the guidelines on the assessment of investment analysis. Validation report discusses the relevant guidelines applicable to the project activity. (10). Validation team confirms the appropriateness of input values in investment analysis from the document review, cross checked from other documents, third party sources, wherever applicable. Suitability of input values has been confirmed from the local and sectoral expertise of the team. For detailed validation of input values refer section 6c of Protocol below. (11). Validation team confirms the debt-equity ratio from the previous investment made in wind power project by the PP. Validation team also confirms the suitability of debt-equity ratio from its local and sectoral expertise. For detailed validation of input values refer section 6c of Protocol below. (12). PLF has been sourced from the third party study report prepared by the Madhav Consultants and loan application submitted by the PP for loan funding. For detailed validation of input values refer section 6c of Protocol below. (13). Validation report confirms the date of offer provided by the technology supplier.

	For detailed validation of input values refer section 6c of Protocol below. (14). Validation team confirms the project cost from the review of offer provided by technology supplier. Further, suitability of project cost has been confirmed from the review of firm purchase orders, loan application and sanction letter, and comparison with other similar projects. For detailed validation of input values refer section 6c of Protocol below. (15). Validation team confirms the O&M cost and its annual escalation from the review of offer provided by technology supplier. Further, suitability of O&M cost and its annual escalation has been confirmed from the review of loan application, and comparison with other similar projects. For detailed validation of input values refer section 6c of Protocol below. (16). Income tax rate has been confirmed from the host country rules. For detailed validation of input values refer section 6c of Protocol below. (17). Validation team confirms that Weighted Average Cost of Capital (WACC) is not used as benchmark for demonstration of additionality. Therefore, consideration of Minimum Alternate Tax (MAT) in computing WACC is not relevant to the project activity. (18). Key assumption and rationale has been justified in the PDD on emission reduction calculation. For detailed validation of input values refer section 6c of Protocol below. (19). Validation team confirms that the data used for calculation of baseline emissions is included in section B.6 of the PDD. For details refer section 5c of Protocol below. (20). Validation team confirms that PP has applied investment barrier to demonstrate additionality in accordance with attachment A to appendix B of the simplified modalities and procedures for small-scale CDM project activities. For details refer section 6 of Protocol below. (21). Relevant national policies and circumstances are correctly included in the PDD. Validation team confirms from its local expertise. For details refer section 6 of Protocol below. (22). Validation team confirms that PDD explains relevant methodological choices from the applied methodology and tool. For details refer section 6 of Protocol below. (23). Default values and data that is calculated with equations is not included in the PDD. For details refer section 5c of Protocol below. (24). Information on additionality as described in attachment A to appendix B of simplified modalities and procedures for small scale project activities does not require investment analysis including CER revenues to be presented. (25). Validation team confirms that the project cost is appropriate. For detailed validation of project cost please refer to section 6c of the Protocol below. (26). Validation team confirms that project cost used in the investment analysis has been sourced from the offer supplied by the technology supplier. For detailed validation of input values refer section 6c of Protocol below. (27). Validation team confirms that O&M cost is appropriate. Please refer to Protocol below on appropriateness of O&M cost. For detailed validation of input values refer section 6c of Protocol below. (28). Benchmark used for the project activity is commercial lending rate and not the WACC. Therefore, comment is not relevant to the project activity. (29). Validation team confirms from the review of the investment analysis, that post-tax project IRR has been used. For details refer section 6c of Protocol below. (30). Commercial lending rate is appropriate benchmark for project IRR in accordance with Guidance 15 of Guidelines on the assessment of investment analysis, Version 05. For details refer section 6c of Protocol below. (31). Validation team confirms that prior consideration of CDM has been appropriately presented by the PP. For detailed validation of prior consideration of CDM please refer to Protocol below. For details refer section 6a of Protocol below. (32). Validation team confirms that the prior consideration of the CDM has been

	demonstrated through notification submitted to UNFCCC secretariat and DNA of India. Therefore, including date of PPA is not relevant. For details refer section 6a of Protocol below. (33). Validation team confirms that low-cost/must-run power plants for five years have been appropriately presented in the PDD to justify the use of simple OM. Validation team confirms that the data used for low-cost/must-run power plants is correct. For details refer section 5c of Protocol below. (34). Validation team confirms that the PDD provides the relevant values of operating margin, build margin and combined margin emission factor. Validation team confirms that PP has correctly presented these values from the review of CO2 baseline emission factor for an Indian power sector, Version 06. For details refer section 5c of Protocol below. (35). Actual values are already provided in the PDD. No time survey has been conducted or required by the applied methodology. (36). Validation team confirms that correct source of data has been referred in the PDD for operating margin, build margin and combined margin emission factor. For details refer section 5c of Protocol below. (37). Validation team confirms that ex-ante option of OM has been correctly calculated by considering 3-year generation weighted average OM in accordance with the applied tool. For details refer section 5c of Protocol below. (38). Validation team confirms that emission factor has been calculated in accordance with the Tool for calculation of emission factor for an electricity system. For details refer section 5c of Protocol below. (39). Validation team confirms that option for OM as ex-ante OM has been appropriately justified in the PDD. Validation team also confirms that the emission factor has been correctly computed. For details refer section 5c of Protocol below. (40). Validation team confirms that PDD correctly presents that source of Build margin emission factor as CO2 baseline database for Indian power sector, Version 06. For details refer section 5c of Protocol below. (41). Validation team confirms that spreadsheet has been provided for emission factor calculations including combined margin emission factor. For details refer section 5c of Protocol below. (42). Validation team confirms from the review of applied methodology paragraph 20 that project emissions for wind power project is nil. Further, validation team confirms from its sectoral expertise and field survey that no fossil fuel consumption is required for operation of wind power plants. For details refer section 5c of Protocol below. (43). Validation team confirms that connected electricity system to the project activity is NEWNE grid system and not Southern grid. Further, validation team confirms that combined margin emission factor calculation has been correctly presented for NEWNE grid system. For details refer section 5c of Protocol below. (44). Validation team confirms that the net electricity supplied to the grid is measured and monitored continuously and recorded monthly for billing. Validation team confirms that measurement monitoring and recording frequency of net electricity supplied to the grid is in accordance with the applied methodology. For details refer section 7 of Protocol below. (45). Validation team confirms that metering equipment is in accordance with PPA which refers CEA norms. Validation team further confirms that metering is in accordance with relevant CEA norms[5] as well. For details refer section 5c of Protocol below. (46). Validation team confirms that measurement methods and procedures have been correctly described and in accordance with general guidelines to SSC methodologies. For details refer section 5c of Protocol below. (47). Validation team confirms that monitoring plan has been correctly described in the PDD. For details refer section 5c of Protocol below.

[5] http://www.cea.nic.in/reports/regulation/amend_meter_reg.pdf

	(48). Validation team confirms that data source for net electricity supplied to the grid has been correctly described in the PDD. Further, data source for combined margin emission factor has also been correctly described in the PDD. For details refer section 5c of Protocol below. (49). Validation team confirms that monitoring plan is in accordance with the general guidelines to SSC methodologies. For details refer section 5c of Protocol below. (50). Validation team confirms that calibration procedures, accuracy, responsible entity and measurement interval has been correctly described in the PDD. For details refer section 5c of Protocol below.

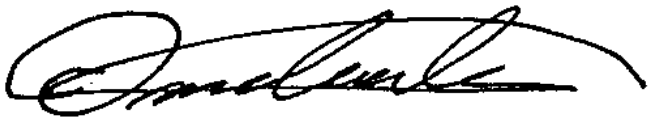
7.5 Appendix E: Certificate of Appointment

Validation of "Grid Connected Wind Power Project by M/s Giriraj Enterprises in Madhya Pradesh"

We hereby certify that the following personnel have engaged in the validation process that has fully satisfied the competence requirements of the validation of the CDM project activity.

Name of Person	Assigned Roles
Ankush Jain	Team Leader, Sector Expert
Ponnada Rama N Rao	Team Member
Shubha Shanbhag	Technical Reviewer, Sector Expert
Imran Ustad	Technical Reviewer, Sector Expert
Michiaki Chiba	Decision Maker

Signed by



Decision Maker
Michiaki Chiba
Climate Change Manager – Asia & Pacific

7.6 Appendix F: Validation Protocol and findings log

LLOYDS REGISTER QUALITY ASSURANCE
Clean Development Mechanism
Validation Protocol and Findings

This document has been produced by the LRQA Validation Team after the completion of the desk review and the site visit.
It outlines the validated situation in relation to a number of criteria, including those defined in the Validation and Verification Manual (VVM) produced by the CDM Executive Board.
The questions within this document must be completed in full and in your own words. The purpose of this protocol is to record LRQA's opinion and LRQA's findings.
If LRQA has identified issues requiring corrective action or clarification, a reference is made in the 'Conclusion' column, and details **are stated in the section marked 'Findings'.**

	Validated situation	Conclusion
SECTION 1. Approval		
Host Country Approval		
1. Has the Host country DNA provided a written approval?	Yes ☒ No ☐ NA☐ [6]	✓
2. Confirm that the letter has been issued by the Party's DNA and is valid for the proposed CDM project activity under validation	Yes ☒ No ☐ NA☐ LoA was issued on 20/09/2011 by the Ministry of Environment and Forests, Government of India, Government of India, which is the Designated National Authority (DNA) of the host country Party as per http://cdm.unfccc.int/DNA/index.html. The LoA is issued for the proposed project activity.	✓

[6] For each section and question where a YES/NO/NA answer is required, explain your choice.

	Validated situation	Conclusion
3. Mention the means of validation employed to assess the authenticity of the Letter of Approval. Indicate the source of the LoA (for example, PP or directly from the DNA)	The LoA was made available by the PP. Comparison with other approved projects by the DNA was also conducted to check the authenticity of the letter (included project ref 5380 and 5344).	✓
4. Does the written Letter of Approval confirm the following: (a) The Party is a Party to the Kyoto Protocol (including ratification)? (b) Participation is voluntary? (c) The proposed CDM project activity contributes to the sustainable development of the country? (d) It refers to the precise proposed CDM project activity title in the PDD being submitted for registration?	Yes ☒ No ☐ NA☐ The LoA confirms: (a) The host country Party ratified the Kyoto Protocol in August 2002. (b) The participation is voluntary. (c) The proposed project activity will assist the host country in achieving sustainable development. (d) The LoA indicates the precise title of the proposed project activity as indicated in the PDD.	✓
5. Is the letter of approval unconditional with respect of (a) to (d) above?	Yes ☒ No ☐ NA☐ The LoA does not add a specific condition to the points stated therein.	✓
6. Does the LoA from the host party acknowledge the bundle activity (if applicable)?	Yes ☐ No ☐ NA☒	-
Annex I Party Approval		
7. Has the Annex I country DNA provided a written approval?	Yes ☐ No ☐ NA☒	-
8. Confirm that the letter has been issued by the Party's DNA and is valid for the proposed CDM project activity under validation.	Yes ☐ No ☐ NA☒	
9. Mention the means of validation employed to assess the authenticity of the Letter of Approval. Indicate the source of the LoA (for example, PP or directly from the DNA).	N/A	-

	Validated situation	Conclusion
10. Does the written Letter of Approval confirm the following: (a) The Party is a Party to the Kyoto Protocol (including ratification)? (b) Participation is voluntary? (c) It refers to the precise proposed CDM project activity title in the PDD being submitted for registration?	Yes ☐ No ☐ NA☒	-
11. Is the letter of approval unconditional with respect of (a) to (c) above?	Yes ☐ No ☐ NA☒	-
Host Country and Annex I Party Approval		
12. Do any of the Letters of Approval contain additional specification of the project activity? Like: - PDD Version number? - Validation report version number? Make sure that the request for registration is made on the basis of the documents specified in any of the letters.	The LoA does not refer to a specific version number of the PDD or validation report.	✓

		Validated situation		Conclusion
SECTION 2. Participation				
1	Confirm that the PPs are listed in a tabular form in section A.3 of PDD and that this information is consistent with the contact details provided in Annex 1 of the PDD and with the contact details in the MoC.	Host Party PP name in PDD/ A.3	Giriraj Enterprises	✓
		Host Party PP name in PDD/ Annex 1	Giriraj Enterprises	
		Host Party PP name in MoC	Giriraj Enterprises	
		Annex 1 Party PP name in PDD/ A.3	N/A	
		Annex 1 Party PP name in PDD/ Annex 1	N/A	
		Annex 1 Party PP name in MoC	N/A	
2	Confirm that each of the PPs has been approved by at least one Party involved.	Yes ☒ No ☐ NA☐ The project activity is currently developed as a unilateral project. Annex 1 participant is not specified at this stage.		✓
3	Confirm that no entities other than those approved as PPs are included in section A.3 of PDD.	Yes ☒ No ☐ NA☐ Giriraj Enterprises is only PP as indicated in the PDD.		✓
4	Ensure that the approval of participation has been issued from the relevant DNA. If in doubt verify this with the corresponding DNA.	The approval by the host country DNA has been issued by the correct organization. Validation team had also confirmed the LoA from the similar cases.		✓

	Validated situation	Conclusion
5 Has the MoC been completed as per the latest "Procedures for MoC between the project participants and the Executive Board"? - No modifications to the template/form should be made and each document should be clearly dated - Title of the project and names of project participants and focal points should be fully consistent with those indicated in all other project documentation - Focal point scopes should be clearly and correctly indicated - Contact details and specimen signatures of focal point entities including those of project participants in Annex 1 should be correctly entered. Only one telephone, fax, email contact should be entered per authorized signatory. In cases where additional contact details are included, only the first indicated information will be taken into account and only the official business address of the proposed entity should be provided on the F-CDM-MOC form. - The Statement of Agreement in Section 3 should be signed by one authorized signatory for each project participant; signatures made available in Section 3 should correspond to those indicated in the related Annex 1 document; focal point entities who are not designated as project participants should not sign Section 3.	Yes ☒ No ☐ NA☐ MoC is consistent with the PDD. The PP, Giriraj Enterprises, consistent between PDD and the MoC. In addition, the information in accordance with the MoC form F-CDM-MOC and the requirements of the procedures.	✓

	Validated Situation	Conclusion
SECTION 3. Project design document		
1. Is the project activity Small Scale or Normal Scale?	Normal Scale ☐ Small Scale ☒ Bundled Small Scale ☐ (cross as appropriate)	✓
2. Has the PDD used the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM Website? Check outputs from the completeness check.	Yes ☒ No ☐ CDM-SSC-PDD template Version 03 and Guidelines for Completing CDM-SSC-PDD version 05, which are the current versions available in UNFCCC CDM website, are used.	✓

	Validated situation	Conclusion
SECTION 4. Project description		
1. Describe the process undertaken to validate that the description of the proposed CDM project activity as contained in the PDD sufficiently covers all relevant elements, is accurate and that it provides the reader with a clear understanding of the nature of the proposed CDM project activity.	The project activity is installation of 15MW new grid connected wind power plant in Madhya Pradesh state in India. The electricity generated by the project activity will be supplied to the NEWNE grid system. The electrical energy produced by the project activity will be measured using electronic tri-vector bi-directional electricity meters. The description of the project activity was validated based on review of the PDD and supporting documents, physical site visit and field interviews that included the overall design document, technical specification, estimation of electricity generation by the technology supplier, and the PPA. CAR-01 was raised as PDD does not clearly explain how the proposed project activity reduces emissions. For resolution refer findings section below.	CAR-01 (Closed)

<table>
<tr><th></th><th colspan="2">Validated situation</th><th>Conclusion</th></tr>
<tr><td>2. Confirm that the exact project location is provided in the PDD with Geographical coordinates and check the accuracy of them.
Please include here the Geographical coordinates:</td><td colspan="2">The project activity is located in Barada Barkheda village in Barod taluka in Shajapur District in Madhya Pradesh state in India. The geo-coordinates of all the 10 wind turbines are as follows:
<table><tr><th>Sr. No.</th><th>Location Nos.</th><th>Latitude</th><th>Longitude</th></tr><tr><td>1.</td><td>M-12</td><td>N 23° 51' 55.2"</td><td>E 76° 03' 47.5"</td></tr><tr><td>2.</td><td>M-34</td><td>N 23° 51' 05.2"</td><td>E 76° 03' 39.7"</td></tr><tr><td>3.</td><td>M-35</td><td>N 23° 50' 53.8"</td><td>E 76° 03' 42.0"</td></tr><tr><td>4.</td><td>M-36</td><td>N 23° 50' 45.1"</td><td>E 76° 03' 54.6"</td></tr><tr><td>5.</td><td>M-45</td><td>N 23° 50' 25.2"</td><td>E 76° 04' 09.6"</td></tr><tr><td>6.</td><td>M-55</td><td>N 23° 48' 39.7"</td><td>E 76° 05' 11.9"</td></tr><tr><td>7.</td><td>M-90</td><td>N 23° 50' 05.0"</td><td>E 76° 05' 26.5"</td></tr><tr><td>8.</td><td>M-91</td><td>N 23° 49' 56.9"</td><td>E 76° 05' 33.9"</td></tr><tr><td>9.</td><td>M-92</td><td>N 23° 49' 44.7"</td><td>E 76° 05' 38.5"</td></tr><tr><td>10.</td><td>M-93</td><td>N 23° 49' 34.6"</td><td>E 76° 05' 25.5"</td></tr></table>
CL-05 was raised as unique coordinates were not correctly presented. For resolution refer findings section below.</td><td>CL-05 (Closed)</td></tr>
<tr><td>3. Confirm that the physical site inspection reflects the description in the PDD of the proposed CDM project activity.</td><td colspan="2">The validation team conducted a physical site visit and confirmed consistency of the described project activity in the PDD and the actual implementation. The project activity was under commissioning as of the time of the site visit.

The project activity was planned in phases, first phase of 5 wind turbines of capacity 1.5MW each were commissioned by 31/03/2011 (actual dates are 28-30-31/03/2011), second phase of 5 wind turbines of capacity 1.5MW each were commissioned by 19/06/2011 (Actual dates 07-19/06/2011).</td><td>✓</td></tr>
<tr><td>4. If the team did not undertake a physical site inspection, describe the justification as approved by the CDM Quality Manager. (VVM 01.2: 60-61)

Describe briefly the physical site inspection: Travel details and installations, facilities and buildings visited.</td><td colspan="2">The site visit of the project was conducted on 29/09/2011.

The validation team visited the site of 8 wind turbines, Central monitoring station of the equipment supplier, connected substation and local villages.</td><td>✓</td></tr>
<tr><td>5. If the proposed CDM project activity involves the</td><td>Pre-project</td><td>Project activity</td><td>✓</td></tr>
</table>

		Validated situation		Conclusion
	alteration of an existing installation or process, ensure that the project description clearly states the differences resulting from the project activity compared to the pre-project situation.	N/A The project is a Greenfield activity.	N/A The project is a Greenfield activity.	
6.	Potential public funding for the project from Parties in Annex I shall not be a diversion of official development assistance (ODA).	Validation team confirmed from the review of information submitted that the project does not involve diversion of ODA.		✓
7.	If the project activity is a small scale one, confirm that it is not a debundled component of a large scale project, in line with appendix C of the simplified M&P for SSC CDM project activities and the Guidelines for assessment of de-bundling for SSC project activities.	Validation team confirmed from the field survey and field interview that PP is not having any small scale wind power project within 1 km of the project boundary.		✓

	Validated situation	Conclusion
SECTION 5. Baseline and monitoring methodology		
1. Has the baseline and monitoring methodologies selected by the project participants been previously approved by the CDM Executive Board, i.e. does it appear on the methodologies page of the UNFCCC website?	Yes ☒ No ☐ NA☐ Grid connected renewable electricity generation, AMS.I.D, Version 17 is applied. The methodology refers to Tool to calculate the emission factor for an electricity system, Version 02.2.1. CAR-06 was raised as earlier (not applicable) version of the guidelines was used in the PDD. For resolution please refer to findings section below.	CAR-06 (Closed)
2. If the project activity is a Small Scale one; does it qualify within the threshold of the three possible types of small scale projects? Confirm information provided in the PDD.	The project activity is to renewable energy project, therefore, qualifies as Type I activity. Further, total capacity of the project is 15MW, within the small scale limits of Type I activity. Validation team confirms the project capacity from the review of purchase orders, commissioning certificate, and field survey. Validation team also confirms from the interview of the PP that capacity expansion of the project activity is not envisaged. CAR-02 was raised as PDD does not clearly describe and justify the project type and category. For resolution please refer to findings section below.	CAR-02 (Closed)

	Validated situation	Conclusion
3. If the project activity is a Small Scale one; which approved small scale methodology does the project apply? Confirm that the SSC meth is applied in conjunction with the general guidelines to SSC CDM methodologies.	The project activity applies AMS.I.D, Version 17. Validation team further confirms that methodology has been applied in conjunction with general guidelines to SSC methodologies, Version 17. Following conditions were reviewed by the team: 1. The project is a 15MW renewable energy project and its expansion was not envisaged. Validation team confirmed from the review of purchase orders, commissioning certificate, interview of the PP and field survey. 2. The project is not a debundled component of a large-scale project activity in accordance with Guidelines on assessment of de-bundling for SSC project activities. Validation team confirmed from field survey and interview. 3. The electricity supplied to the grid directly affects the emission reduction, therefore, measured at least hourly. Measurement equipments were calibrated in accordance with national standards. Measurement records are archived electronically.	✓
4. Determine whether the methodology selected is applicable to the project activity including that the used version is valid. Describe steps taken to assess the relevant information contained in the PDD in the table below.	The summary has been provided below.	✓

No.	Applicability conditions in the AMS.I.D Version 17	Information in the PDD	Steps taken to assess PDD information	Conclusion
1	This category comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass that supply electricity to a national or a regional grid. Project activities that displace electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit shall apply AMS I.F.	The project activity comprises wind (renewable) energy generation units that supply electricity to NEWNE Grid of India.	Validation team confirmed that the project activity is a wind power project supplying electricity to NEWNE grid from the review of purchase orders, power purchase agreements, commissioning certificate, and field survey.	✓

	This methodology is applicable to project activities that (a) install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).	The project activity is a Greenfield plant (option a).	Validation team confirmed that the project activity is a new wind power plant from the review of purchase orders, power purchase agreement, commissioning certificate and field survey.	✓
2	Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology: • The project activity is implemented in an existing reservoir with no change in the volume of reservoir; • The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/m^2; The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m^2.	As it is wind power project activity, the criteria is not applicable.	Validation team confirmed that the project is a wind power project from the review of purchase orders, power purchase agreements, commissioning certificate and field survey.	✓
3	In the case of biomass power plants, no other biomass types than renewable biomass are to be used in the project plant.	As it is wind power project activity, the criteria is not applicable.	Validation team confirmed that the project is a wind power project from the review of purchase orders, power purchase agreements, commissioning certificate and field survey.	✓
4	If the new unit has both renewable and non-renewable components (e.g., a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall	Project activity has only renewable component (wind), the capacity being 15 MW which does not exceed the eligibility limit for a small-scale CDM project activity.	Validation team confirmed from the review of purchase orders, power purchase agreements, commissioning certificate and field survey that the project activity does not involve non-renewable component.	✓

	not exceed the limit of 15 MW.			
5	Combined heat and power (co-generation) systems are not eligible under this category.	As it is wind power project activity, the criteria is not applicable.	Validation team confirmed from the review of purchase orders, commissioning certificate, and field survey that the project is not a combined hear and power system.	✓
6	In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.	Not applicable, as it is a Greenfield project activity.	Validation team confirmed from the review of purchase orders, commissioning certificate, power purchase agreement and field survey that the capacity of the project activity is 15MW.	✓
7	In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement unit shall not exceed the limit of 15 MW.	Not applicable, as it is a Greenfield project activity.	Validation team confirmed from the review of purchase orders, commissioning certificates and field survey that the project activity does not involve any retrofit or replacement.	✓

	Validated situation	**Conclusion**
5. Confirm that any specific guidance provided by the CDM Executive Board in respect to an approved methodology has been correctly applied.	Not applicable	-
6. If a determination regarding the applicability of the selected methodology to the proposed CDM project activity cannot be made, request clarification of the methodology in line with the guidance provided by the CDM Executive Board. Describe the clarification request and response.	Not applicable	-

	Validated situation	Conclusion
7. If the Validation Team determines that the proposed CDM project activity does not comply with the applicability conditions of the methodology, the Team may proceed by means of requesting revision to or deviation from the methodology in line with the guidance provided by the CDM Executive Board. Describe the request for revision or deviation and approval by the CDM Executive Board.	Not applicable	-
8. If there are any GHG emissions occurring within the proposed CDM project activity boundary, which are not addressed by the applied methodology and which are expected to contribute more than 1% of the overall expected average annual emissions reductions as a result of the implementation of the project but a determination is made that the approved methodology(ies) is/are applicable to the project activity, provide here information about them in relation to the applicability criteria and justify the determination.	Not applicable	-

	Validated situation	Conclusion
SECTION 5a. Project boundary		
1. Does the project boundary include physical, geographical site of the industrial facility, processes or equipment that are affected by the project activity?	Yes ☒ No ☐ NA☐ The project boundary comprises of the project power plant, and all power plants connected physically to the electricity system.	✓

	Validated situation	Conclusion
2. Confirm that all sources and GHGs required by the methodology have been included within the project boundary. Describe here if any emission source that will be affected by the project activity and is not addressed by the approved methodology, has been identified. In such case request clarification of, revision to or deviation from the methodology in accordance with EB guidance. Use the table below for this purpose:	All sources and GHGs as required by the methodology have been included. Refer table below. During the site visit confirmed that the project activity converts the kinetic energy from the wind to electrical energy. The energy generated by the project will be supplied to the grid, therefore, affects only the power plants connected to the grid. Therefore, no emission source that will be affected by the project activity and is not addressed by the approved methodology has been identified.	✓

Gases and Sources Included In The Project Boundary						
	Source	**Gas**	**Inc./Exc. Pdd**	**Justification PDD**	**Steps Taken To Assess PDD Justification**	**Conclusion**
BASELINE	CO_2 emission from electricity generation in fossil fuel fired power plants that is displaced due to the project activity	CO_2	Included	Main emission source	As CO2 is the main emission source, hence inclusion of this gas in project boundary is appropriate.	✓
		CH_4	Excluded	Minor emission source	CH_4 emissions would be minor in nature. Hence it is appropriate to exclude this gas.	✓
		N_2O	Excluded	Minor emission source	N_2O emissions would be minor in nature. Hence it is appropriate to exclude this gas.	✓

	Validated situation	Conclusion
SECTION 5b. Baseline identification		

	Validated situation	Conclusion
1. Determine whether the PDD provides a verifiable description of the identified baseline scenario, including 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.	The project activity involves installation of new grid-connected wind power plant. Validation team confirmed that the project is a new power plant from the review of purchase orders, commissioning certificate and field survey. Hence, in accordance with the applied methodology, i.e. AMS.I.D, Version 17, the baseline scenario is electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid.	✓
2. Confirm that any procedure contained in the methodology to identify the most reasonable baseline scenario, has been correctly applied.	Yes ☒ No ☐ NA☐	✓
3. Check each step in the procedure described in the PDD to identify the baseline scenario against the requirements of the methodology. (Note that if the methodology requires use of tools, i.e. such as the tool for the demonstration and assessment of additionality and the combined tool to identify the baseline scenario and demonstrate additionality, the guidance in the methodology shall supersede it in the tool.)	The applied methodology AMS.I.D, Version 17 prescribes the baseline. Therefore, no further analysis was done in accordance with VVM.	✓
4. Based on financial expertise and local and sectoral knowledge, determine whether all scenarios that are considered by the project participants and are supplementary to those required by the methodology, are reasonable in the context of the proposed CDM project activity and that no reasonable alternative scenario has been excluded. Use the table below for this purpose:	The baseline scenario has been prescribed by the applied methodology AMS.I.D, Version 17. Therefore, no further analysis was done.	✓

5. Determine whether the baseline scenario identified is reasonable by validating the assumptions, calculations and rationales used, as described in the PDD. It shall be ensured that documents and sources referred to in the PDD are correctly quoted and interpreted. Cross check the information provided in the PDD with other verifiable and credible sources, such as local expert opinion. The table above may be used for this purpose.	The PDD describes the project activity as installation of new grid-connected renewable power plant. Validation team confirmed that the project is a new power plant from the review of purchase orders, commissioning certificates and field survey. The baseline scenario has been prescribed by the applied methodology AMS.I.D, Version 17 for new grid-connected renewable power plant. Therefore, no further analysis was done.	✓
6. Is the identified baseline scenario in line with regulatory or legal requirements and does it take into account relevant national and/or sectoral policies?	The identified baseline scenario is in line with the regulatory / legal requirements.	✓
7. Is this identification supported by official and/or verifiable documents (for example, studies, web pages, certificates, etc)?	The baseline as continued operation of grid connected power plants can be confirmed from the review of CO_2 baseline database for Indian Power sector, Version 05.	✓

	Validated situation	**Conclusion**
SECTION 5c. Algorithms and/or formulae used to determine emission reductions		
1. Compare the equations and parameters in the PDD to those in the selected approved methodology and determine if they have been correctly applied to calculate project emissions, baseline emissions, leakage, and emission reductions. Confirm that adequate justification has been provided for selection between different options.	The project activity is a Greenfield wind power plant. The baseline emission is determined by net electricity supplied from the project plant to the grid and the combined margin CO2 emission factor of the connected grid system. The project emissions and leakage emissions are considered nil in accordance with the applied methodology, AMS.I.D, Version 17. The PDD has correctly applied the calculations from those in the methodology. Adequate justification has been provided when choosing different options. Applied methodology/Tool | PDD	CL-03 (Closed)

	Validated situation		Conclusion
	Baseline emissions: 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. $BE_y = EG_{BL,y} * EF_{CO_2,grid,y}$ Where: BE_y Baseline Emissions in year *y* (t $CO_{2)}$ $EG_{BL,y}$ Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year *y* (MWh) $EF_{CO2,grid,y}$ CO_2 emission factor of the grid in year *y* (t CO_2/MWh) 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"; OR (b) The weighted average emissions (in	Baseline emissions: Since the project activity is a new grid-connected power plant, the above stated baseline is applicable for the project. Further, as per paragraph 11, '*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.*' $BE_y = EG_{BL,y} \times EF_{CO2,grid,y}$[7] Where: BE_y = Baseline emissions in year y; (t CO_2) $EG_{BL,y}$ = Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year *y* (MWh) $EF_{CO2,grid,y}$ = CO_2 Emission Factor of the grid in year y; (t CO_2 / MWh) As per paragraph 12 of AMS- I.D. (Version-16, EB- 54), '*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*	

	Validated situation		Conclusion
	t CO_2/MWh) of the current generation mix. The data of the year in which project generation occurs must be used.	*to calculate the Emission Factor for an electricity system'.* *OR* *b) The weighted average emissions (in t CO_2/MWh) of the current generation mix. The data of the year in which project generation occurs must be used.* *Calculations must be based on data from an official source (where available) and made publicly available.*	
	Combined margin calculations in accordance with the stepwise approach of "Tool to calculate the Emission Factor for an electricity system"	The emission factor has been calculated using option '*a*' above i.e. *combined margin*. The emission factor has been estimated using option (a) above by using the following steps of "*Tool to calculate the emission factor for an electricity system*" (Version- 02.2.1, EB- 63, Annex- 19) (Version- 02.2.1, EB- 63, Annex- 19):	
	Step 1: Identify the relevant electricity systems For determining the electricity emission factors, identify the relevant project electricity system	***Step 1: Identify the relevant electricity systems*** Central Electricity Authority, Ministry of Power, Government of India (Host Country) has given the delineations of the project electricity system and the connected electricity system in India. As per CEA, the Indian power system is divided into two	

	Validated situation	Conclusion

regional grids, viz. NEWNE Grid & Southern Grid. Each grid covers several states as given in the following table. As the project activity is located in the State of Madhya Pradesh, NEWNE Grid is the relevant electricity system.

Geographical Scope of Electricity Grid System:

NEWNE Grid				Southern Grid
Northern	Eastern	Western	North-Eastern	
Delhi	Jharkhand	Gujarat	Arunachal Pradesh	Andhra Pradesh
Haryana	Orissa	Daman & Diu	Assam	Karnataka
Himachal Pradesh	West Bengal	Dadra & Nagar Haveli	Manipur	Kerala
Jammu & Kashmir	Sikkim	***Madhya Pradesh***	Meghalaya	Tamil Nadu
Punjab	Anda man-Nicobar	Maharashtra	Mizoram	Pondicherry

	Validated situation		Conclusion

Rajasthan	-	Goa	Nagaland	Lakshadweep	
Uttar Pradesh	-	-	Tripura	-	

Step 2: Choose whether to include off-grid power plants in the project electricity system (optional);

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

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

Step 2: Choose whether to include off-grid power plants in the project electricity system (optional)

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

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

The PP has chosen "*Option I: Only grid power plants are included in the calculation"* as the grid system in India is stable enough and off-grid generation is not significant.

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

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

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

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

	Validated situation		Conclusion
	of the following methods: (a) Simple OM, or (b) Simple adjusted OM, or (c) Dispatch data analysis OM, or (d) Average OM.	(a) Simple OM, or (b) Simple adjusted OM, or (c) Dispatch data analysis OM, or (d) Average OM. Out of the above options, the simple OM method (option a) is used in India. The Dispatch data analysis OM is not used as off-grid generation is not significant in India as per step 2 above. Other methods cannot be applied in India due to lack of necessary data. As per "*Tool to calculate the emission factor for an electricity system" (Version- 02.2.1, EB- 63, Annex- 19)*, the simple OM method (option a) can only be used if low-cost/must-run resources constitute less than 50% of total grid generation in: 1) average of the five most recent years, or 2) based on long-term averages for hydroelectricity production. As per option (1), in India most recent five years data is available with CEA. As per CEA data, the low-cost/must-run resources constitute 17.76% which is less than 50% of total grid generation. **2005-06** 17.95% **2006-07** 18.46% **2007-08** 19.04% **2008-09** 17.41%	

	Validated situation		Conclusion

2009-10	15.94%
Average	17.76%

For the simple OM, the emissions factor is calculated using the *ex ante* option. As per this option, the emission factor has been determined once at the validation stage, thus no monitoring and recalculation of the emission factor during the crediting period is required.

As the project is a grid connected power plant, 3-year generation-weighted average, based on the most recent data available at the time of submission of the CDM-PDD to the DOE for validation has been used.

CEA has considered the CDM registered projects in the calculation of the operating margin (OM).

Step 4: Calculate the operating margin emission factor according to the selected method

The simple OM emission factor is calculated as the generation-weighted average CO2 emissions per unit net electricity generation (tCO_2/MWh) of all generating power plants serving the system, not including low-cost/must-run power plants/units.

The simple OM may be calculated by one of the following two options:

Step 4: Calculate the operating margin emission factor according to the selected method

The calculation for simple OM has been described as:

$$EF_{grid,OMsimple,y} = \frac{\sum_i (FC_{i,y} \times NCV_{i,y} \times EF_{CO2,i,y})}{EG_y}$$

	Validated situation		Conclusion
	Where: $EF_{grid,OMsimple,y}$ = Simple operating margin CO_2 emission factor in year *y* (tCO_2/MWh) $FC_{i,y}$ = Amount of fossil fuel type *i* consumed in the project electricity system in year *y* (mass or volume unit) $NCV_{i,y}$ = Net calorific value (energy content) of fossil fuel type *i* in year *y* (GJ/mass or volume unit) $EF_{CO2,i,y}$ = CO_2 emission factor of fossil fuel type *i* in year *y* (tCO_2/GJ) EG_y = Net electricity generated and delivered to the grid by all power sources serving the system, not including low-cost/must-run power plants/units, in year *y* (MWh) i = All fossil fuel types combusted in power sources in the project electricity system in year *y* y = The relevant year as per the data vintage chosen in Step 3	*Option A: Based on the net electricity generation and a CO2 emission factor of each power unit; or* *Option B: Based on the total net electricity generation of all power plants serving the system and the fuel types and total fuel consumption of the project electricity system.* *Option B can only be used if:* *(a) The necessary data for Option A is not available; and* *(b) Only nuclear and renewable power generation are considered as low-cost/must-run power sources and the quantity of electricity supplied to the grid by these sources is known; and* *(c) Off-grid power plants are not included in the calculation (i.e., if Option I has been chosen in Step 2).* The simple OM is calculated as per Option B below. *Option B: Calculation based on total fuel consumption and electricity generation of the system* Under this option, the simple OM emission factor is calculated based on the net electricity supplied to the grid by all power	

	Validated situation		Conclusion
		plants serving the system, not including low-cost/must-run power plants/units, and based on the fuel type(s) and total fuel consumption of the project electricity system, as follows: $EF_{grid,OMsimple,y} = \frac{\sum_i (FC_{i,y} \times NCV_{i,y} \times EF_{CO2,i,y})}{EG_y}$ Where: $EF_{grid,OMsimple,y}$ = Simple operating margin CO_2 emission factor in year *y* (tCO_2/MWh) $FC_{i,y}$ = Amount of fossil fuel type *i* consumed in the project electricity system in year *y* (mass or volume unit) $NCV_{i,y}$ = Net calorific value (energy content) of fossil fuel type *i* in year *y* (GJ/mass or volume unit) $EF_{CO2,i,y}$ = CO_2 emission factor of fossil fuel type *i* in year *y* (tCO_2/GJ) EG_y = Net electricity generated and delivered to the grid by all power sources serving the system, not including low-cost/must-run power plants/units, in year *y* (MWh) i = All fossil fuel types combusted in power sources in the project electricity system in year *y* y = The relevant year as per the data vintage chosen in Step 3	

	Validated situation		Conclusion
		For this approach (simple OM) to calculate the operating margin, the subscript *m* refers to the power plants/units delivering electricity to the grid, not including low-cost/must-run power plants/units, and including electricity imports to the grid. Electricity imports should be treated as one power plant *m*. OM values have been referred from CEA Database which has referred the "*Tool to calculate the emission factor for an electricity system"*. The value of operating margin emission factor is 0.9941 tCO_2/MWh. OM calculation has been done *ex-ante* and hence OM value will remain fixed and need not be monitored during the crediting period.	
	Step 5: Calculate the build margin (BM) emission factor As per the "*Tool to calculate the emission factor for an electricity system" (Version-02.2.1, EB- 63, Annex- 19)*, project participant can choose between one of the following two options: ***Option 1:*** *For the first crediting period, calculate the build margin emission factor ex ante based on the most recent information available on units already built*	***Step 5: Calculate the build margin (BM) emission factor*** As per the "*Tool to calculate the emission factor for an electricity system" (Version-02.2.1, EB- 63, Annex- 19)*, project participant can choose between one of the following two options: ***Option 1:*** *For the first crediting period, calculate the build margin emission factor ex ante based on the most recent information available on units already built for sample group m at the time of CDM-PDD submission to the DOE for validation.*	

	Validated situation		Conclusion
	for sample group m at the time of CDM-PDD submission to the DOE for validation. For the second crediting period, the build margin emission factor should be updated based on the most recent information available on units already built at the time of submission of the request for renewal of the crediting period to the DOE. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used. This option does not require monitoring the emission factor during the crediting period. ***Option 2:*** *For the first crediting period, the build margin emission factor shall be updated annually, ex post, including those units built up to the year of registration of the project activity or, if information up to the year of registration is not yet available, including those units built up to the latest year for which information is available. For the second crediting period, the build margin emissions factor shall be calculated ex ante, as described in Option 1 above. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used.* Further, following calculations relevant to the project activity are: As per the "*Tool to calculate the emission factor for an electricity system" (Version-02.2.1, EB- 63, Annex- 19)*, the build margin emissions factor is the generation-weighted average emission factor (tCO_2/MWh) of all power units m during the most recent year y	*For the second crediting period, the build margin emission factor should be updated based on the most recent information available on units already built at the time of submission of the request for renewal of the crediting period to the DOE. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used. This option does not require monitoring the emission factor during the crediting period.* ***Option 2:*** *For the first crediting period, the build margin emission factor shall be updated annually, ex post, including those units built up to the year of registration of the project activity or, if information up to the year of registration is not yet available, including those units built up to the latest year for which information is available. For the second crediting period, the build margin emissions factor shall be calculated ex ante, as described in Option 1 above. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used.* The PP has opted for Option 1. Capacity additions from retrofits of power plants are not included in the calculation of the build margin emission factor. The sample group of power units *m* used to calculate the build margin is determined as per below procedure:	

	Validated situation		Conclusion
	for which electricity generation data is available, calculated as follows: $EF_{grid,BM,y} = \frac{\sum_m EG_{m,y} \times EF_{EL,m,y}}{\sum_m EG_{m,y}}$ Where, $EF_{grid,BM,y}$ = Build margin CO_2 emission factor in year *y* (tCO_2/MWh) $EG_{m,y}$ = Net quantity of electricity generated and delivered to the grid by power unit *m* in year *y* (MWh) $EF_{EL,m,y}$ = CO_2 emission factor of power unit *m* in year *y* (tCO_2/MWh) m = Power units included in the build margin y = Most recent historical year for which electricity generation data is available	• Identify set of five power units that have been built most recently excluding CDM registered power units; or • Identify set of power units that comprise 20% of the system generation excluding CDM registered projects and that have been built most recently. • Project participant should use the set of power units that comprises the larger annual generation. • If set do not comprises any power unit older than 10 years, then use this set for build margin calculation • If set comprises any power unit older than 10 years, then replace this power unit/s with power unit registered as CDM till set comprises 20% generation & then use this set for build margin calculation • In case the set do not comprise 20% generation then include power units older than 10 years unit the set comprises 20% generation. Use the resulting set for build margin calculation As per CEA, 20% net generation (GWh) & Net Generation in Build Margin (GWh) for NEWNE Grid are as follows: ***20% of Net Generation (GWh)***	

	Validated situation		Conclusion

2005-06	87,575
2006-07	93,072
2007-08	99,224
2008-09	102,139
2009-10	108,983

Net Generation in Build Margin (GWh)

2005-06	87,764
2006-07	93,524
2007-08	100,707
2008-09	102,589
2009-10	109,064

The value of BM has been referred from CEA CO_2 Baseline Database (Version- 6.0, Date- March 2011) which has been calculated by "*Tool to calculate the emission factor for an electricity system" (Version- 02.2.1, EB- 63, Annex- 19).*

As per the "*Tool to calculate the emission factor for an electricity system" (Version- 02.2.1, EB- 63, Annex- 19)*, the build margin emissions factor is the generation-weighted average emission factor (tCO_2/MWh) of all power units m during the most recent year y for which electricity generation data is available, calculated as follows:

$$EF_{grid, BM,y} = \sum EG_{m, y} \times EF_{EL ,m ,y}$$

	Validated situation		Conclusion
		$\frac{\sum EG_{m,y}}{m}$ Where, $EF_{grid,BM,y}$ = Build margin CO_2 emission factor in year *y* (tCO_2/MWh) $EG_{m,y}$ = Net quantity of electricity generated and delivered to the grid by power unit *m* in year *y* (MWh) $EF_{EL,m,y}$ = CO_2 emission factor of power unit *m* in year *y* (tCO_2/MWh) m = Power units included in the build margin y = Most recent historical year for which electricity generation data is available The value of the BM has been calculated by CEA as 0.8123 tCO_2/MWh. BM calculations has been done *ex-ante* and hence BM value will remain fixed and need not be monitored during the crediting period. ***Step 6: Calculate the combined margin (CM) emission factor*** The calculation of the combined margin (CM) emission factor ($EF_{grid,CM,y}$) is based on one of the following methods: (a) Weighted average CM; or (b) Simplified CM.	
	Step 6: Calculate the combined margin (CM) emissions factor The calculation of the combined margin (CM) emission factor ($EF_{grid,CM,y}$) is based on one of the following methods: (a) Weighted average CM; or		

	Validated situation		Conclusion
	(b) Simplified CM. ***(a) Weighted average CM*** The combined margin emissions factor is calculated as follows: $EF_{grid,CM,y} = EF_{grid,OM,y} \times W_{OM} + EF_{grid,BM,y} \times W_{BM}$ Where $EF_{grid,OM,y}$ = Operating Margin CO_2 Emission Factor (tCO_2/MWh) $EF_{grid,BM,y}$ = Build Margin CO_2 Emission Factor (tCO_2/MWh) W_{OM} = Weighting of operating margin emission factor (%) W_{BM} = Weighting of build margin emission factor (%) The following default values should be used for W_{OM} and W_{BM}: • Wind and solar power generation project activities: W_{OM} = 0.75 and W_{BM} = 0.25 (owing to their intermittent and non-dispatchable nature) for the first crediting period and for subsequent crediting periods; • All other projects: W_{OM} = 0.5 and	The weighted average CM method (option A) should be used as the preferred option. The simplified CM method (option b) can only be used if: • The project activity is located in a Least Developed Country (LDC) or in a country with less than 10 registered CDM projects at the starting date of validation; and • The data requirements for the application of step 5 above cannot be met. ***(a) Weighted average CM*** The combined margin emissions factor is calculated as follows: $EF_{grid,CM,y} = EF_{grid,OM,y} \times W_{OM} + EF_{grid,BM,y} \times W_{BM}$ Where $EF_{grid,OM,y}$ = Operating Margin CO_2 Emission Factor (tCO_2/MWh) $EF_{grid,BM,y}$ = Build Margin CO_2 Emission Factor (tCO_2/MWh) W_{OM} = Weighting of operating margin emission factor (%) W_{BM} = Weighting of build margin emission factor (%)	

	Validated situation		Conclusion
	W_{BM} = 0.5 for the first crediting period , and W_{OM} = 0.25 and W_{BM} = 0.75 for the second and third crediting period,6 unless otherwise specified in the approved methodology which refers to this tool. Alternative weights can be proposed, as long as $W_{OM} + W_{BM} = 1$, for consideration by the Executive Board, taking into account the guidance as described below. The values for $W_{OM} + W_{BM}$ applied by project participants should be fixed for a crediting period and may be revised at the renewal of the crediting period. Simplified combined margin has not been used by the PP.	The following default values should be used for W_{OM} and W_{BM}: • Wind and solar power generation project activities: W_{OM} = 0.75 and W_{BM} = 0.25 (owing to their intermittent and non-dispatchable nature) for the first crediting period and for subsequent crediting periods; • All other projects: W_{OM} = 0.5 and W_{BM} = 0.5 for the first crediting period , and W_{OM} = 0.25 and W_{BM} = 0.75 for the second and third crediting period,6 unless otherwise specified in the approved methodology which refers to this tool. Alternative weights can be proposed, as long as $W_{OM} + W_{BM} = 1$, for consideration by the Executive Board, taking into account the guidance as described below. The values for $W_{OM} + W_{BM}$ applied by project participants should be fixed for a crediting period and may be revised at the renewal of the crediting period. The PP has opted for weighted average CM. Thus, the combined margin emissions factor is calculated as follows: $\mathbf{EF_{grid,CM,y} = EF_{grid,OM,y} \times W_{OM} + EF}$	

	Validated situation		Conclusion
		$EF_{grid, BM,y} \times W_{BM}$ Where $EF_{grid,OM,y}$ = Operating Margin CO_2 Emission Factor (tCO_2/MWh) $EF_{grid, BM,y}$ = Build Margin CO_2 Emission Factor (tCO_2/MWh) W_{OM} = Weighting of operating margin emission factor (%) W_{BM} = Weighting of build margin emission factor (%) Thus, the grid emission factor for NEWNE Grid is calculated *ex ante* as below: $EF_{grid,CM,y}$ = $0.75 \times EF_{grid,OM,y} + 0.25 \times EF_{grid, BM,y}$ = $0.75 \times 0.9941 + 0.25 \times 0.8123$ = 0.9486 tCO_2/MWh	
	Project emissions For most renewable energy project activities, $PE_y = 0$. However, for the following categories of project activities, project emissions have to be considered following the procedure described in the most recent version of ACM0002.[8]	Project emissions: As per paragraph 20 of approved methodology AMS- I.D. (Version- 17, EB-61), *For most renewable energy project activities, $PE_y = 0$. However, for the following categories of project activities, project emissions have to be considered following the procedure described in the most recent version of ACM0002.*	

<table>
<tr><th></th><th colspan="2">Validated situation</th><th>Conclusion</th></tr>
<tr><td></td><td>

<table>
<tr><td>

- Emissions related to the operation of geothermal power plants (e.g. non-condensable gases, electricity/fossil fuel consumption);
- Emissions from water reservoirs of hydro power plants.

</td><td>

- *Emissions related to the operation of geothermal power plants (e.g. non-condensable gases, electricity/fossil fuel consumption)*
- *Emissions from water reservoirs of hydro power plants*

As the project activity is a wind power generation, the project emissions are considered zero.

</td></tr>
<tr><td>Leakage emissions:

If the energy generating equipment is transferred from another activity, leakage is to be considered.</td><td>Leakage emissions:
As per paragraph 22 of the approved methodology AMS- I.D. (Version- 17, EB-61), *If the energy generating equipment is transferred from another activity, leakage is to be considered*. The leakage emissions may be considered as zero tCO_2 as no such equipment shall be transferred from another project activity.</td></tr>
</table>

CL-03 was raised as parameters were inconsistently mentioned in the PDD. For resolution please refer to findings section below.

</td><td></td></tr>
<tr><td>2. Verify the justification given in the PDD for the choice of data and parameters used in the equations to determine estimated emission reductions.

If data and parameters will not be monitored throughout the crediting period and will remain fixed, assess that all data sources and assumptions are appropriate and calculations are correct, applicable to the proposed CDM</td><td colspan="2">

Data/Parameter title: $EF_{CO2,grid,y}$	Comments
Title in line with methodology?	Yes
Fixed throughout the crediting period?	Yes
Data unit correctly expressed?	Yes
Appropriate description of parameter?	Yes
Source clearly referenced?	Yes
Value provided is considered reasonable?	Yes
Has this value been verified?	Yes, from the CO_2 baseline database for Indian Power

</td><td>✓</td></tr>
</table>

	Validated situation		Conclusion
project activity and will result in a conservative estimate of the emission reductions. If data and parameters will be monitored on implementation and hence become available only after validation of the project activity, confirm that the estimates provided in the PDD for these data and parameters are reasonable. List all data and parameters provided in the PDD in the tables in next column.		sector, version 06	
	Choice of data correctly justified?	Yes	
	Measurement method correctly described?	N.A.	
	Data/Parameter title: $EF_{grid, OM, y}$	Comments	
	Title in line with methodology?	Yes	
	Fixed throughout the crediting period?	Yes	
	Data unit correctly expressed?	Yes	
	Appropriate description of parameter?	Yes	
	Source clearly referenced?	Yes	
	Value provided is considered reasonable?	Yes	
	Has this value been verified?	Yes, from the CO_2 baseline database for Indian Power sector, version 06	
	Choice of data correctly justified?	Yes	
	Measurement method correctly described?	N.A.	
	Data/Parameter title: $EF_{grid, BM, y}$	Comments	
	Title in line with methodology?	Yes	
	Fixed throughout the crediting period?	Yes	
	Data unit correctly expressed?	Yes	
	Appropriate description of parameter?	Yes	
	Source clearly referenced?	Yes	
	Value provided is considered reasonable?	Yes	
	Has this value been verified?	Yes, from the CO_2 baseline database for Indian Power sector, version 06	
	Choice of data correctly justified?	Yes	
	Measurement method correctly described?	N.A.	
	Data/Parameter title: $EG_{BL,y}$	Comments	
	Title in line with methodology?	Yes	
	Fixed throughout the crediting period?	No, determined ex-post	
	Data unit correctly expressed?	Yes	
	Appropriate description of parameter?	Yes	

	Validated situation	Conclusion
	Source clearly referenced? — Yes Value provided is considered reasonable? — Yes Has this value been verified? — Yes Choice of data correctly justified? — N.A. Measurement method correctly described? — Yes	
3. Confirm that all assumptions and data used by PPs are listed in the PDD including their references and sources, and that the documentation used as the basis for these assumptions and source of data is correctly quoted and interpreted in the PDD.	The PP has correctly sourced the grid emission factor data from the CO2 baseline database for Indian power sector, Version 06. Validation team confirms that all assumptions and data used by the PP is listed in the PDD including their references and sources, and that the documentation used as the basis of these assumptions and sources of data is correctly quoted and interpreted in the PDD. CAR-04 was raised as 3-year generation weighted average operating margin emission factor has not been correctly calculated. For resolution please refer to findings section below.	CAR-04 (Closed)
4. Confirm that all estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.	The baseline emissions can be replicated using the data and parameter and could be confirmed from the emission reduction spreadsheet submitted by the PP.	✓

	Validated situation	Conclusion
SECTION 6. Additionality of a project activity		
1. Does the PDD clearly describe how the proposed CDM project activity is additional?	Yes ☒ No ☐	✓
2. List the documents and tools provided by the CDM Executive Board used to demonstrate the additionality	Following documents were referred to determine additionality: Information on additionality based on Attachment A to appendix B, Version 08 (EB63 Annex 24) Non-binding best practice examples to demonstrate additionality for SSC project activities(EB 35, Annex 34) Guidelines on the assessment of investment analysis, Version 05 Guidelines on the demonstration and assessment of prior consideration of the CDM, Version 04	✓

	Validated situation	Conclusion
SECTION 6a. Prior consideration of the clean development mechanism		
1. Does the PDD clearly indicate the start date of the project activity in format: dd/mm/yyyy and it is in line with the Glossary of CDM Terms?	Yes ☒ No ☐ PDD clearly states the start date as 03/01/2011. Validation team confirmed the start date from the review of following documents: Purchase orders Power Purchase agreements Commissioning certificates Loan sanction letter	✓

	Validated situation	Conclusion
If the PDD was published for Global Stakeholder Consultation process after the start date, check that the CDM benefits were considered necessary in the decision to undertake the project activity as a CDM project, following the below queries.		
2. For a project activity with a start date on or after the 02 August 2008, confirm that the PPs have informed the host party DNA and the UNFCCC secretariat in writing of their intention to seek CDM Status. If such a notification has not been provided by the PPs within six months of the project activity start date, determine that the CDM was not seriously considered in the decision to implement the project activity.	The PP has intimated UNFCCC on 10/02/2011. Validation team confirmed the notification from the list of notifications at UNFCCC website. Validation team also confirmed the project description and location details from the F-CDM-Prior Consideration form submitted by the PP.	✓

	Validated situation	Conclusion
3. For a project activity with a start date before 02 August 2008, check the following requirements through document reviews to assess the PPs prior consideration of the CDM: (a) Evidence that must indicate that awareness of the CDM before the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project. (b) Reliable evidence from project participants that must indicate that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation. The time gap between the documented evidence of prior CDM consideration and continuing and real actions shall be within the period required by the Guidance on prior consideration of the CDM If evidence to support the serious prior consideration of the CDM as indicated above that is authentic is not available, determine that the CDM was not considered in the decision to implement the project activity.	N.A.	-

	Validated situation	Conclusion
SECTION 6b. Identification of alternatives		
1. Does the PDD identify credible alternatives to the project activity, to determine the most realistic baseline scenario? Assess this list of alternatives and ensure that: (a) The list of alternatives includes as one of the options that the project activity is undertaken without being registered as a proposed CDM project activity. (b) The list contains all plausible alternatives considered to be viable means of supplying the outputs or services that are to be supplied by the proposed CDM project activity. (c) The alternatives comply with all applicable and enforced legislation.	LIST OF ALTERNATIVES No | Description in the PDD | Describe why it is credible and complete | | | | | | The baseline determined by the applied methodology is no investment in the project activity and electricity sourced from grid connected power plants.	-

	Validated situation	Conclusion
SECTION 6c. Investment analysis		

	Validated situation	Conclusion
1. Verify the accuracy of financial calculations carried out for the investment analysis: (a) Conduct a thorough assessment of all parameters and assumptions used in calculating the relevant financial indicator, and determine the accuracy and suitability of these parameters. (b) Cross-check the parameters against third-party or publicly available sources, such as invoices or price indices. (c) Review feasibility reports, public announcements and annual financial reports related to the proposed CDM project activity and the project participants.	The Summary of assessment of parameters/input values used for calculation of project IRR. Summary of Cross-check with the project documentation is provided below. Further, these parameters were also compared with similar registered CDM projects. CAR-03 was raised as all input values used in the investment analysis were not presented in the PDD. For resolution please refer to findings section below. CL-01 was raised on the appropriateness of input values used in investment analysis. For resolution please refer to findings section below.	CAR-03 (Closed) CL-01 (Closed)
2. Assess the correctness of computations carried out and documented by the project participants	Validation team confirms that the computation of project IRR has been correctly done.	✓

<table>
<tr><th></th><th>Validated situation</th><th>Conclusion</th></tr>
<tr><td>3. Assess the sensitivity analysis by the project participants to determine under what conditions variations in the result would occur, and the likelihood of these conditions.</td><td>The PP has presented the sensitivity analysis of the following parameters. Validation team's assessment of sensitivity analysis is as below.

<table>
<tr><th>Variation</th><th>-10%</th><th>10%</th><th>Cross over point</th></tr>
<tr><td>Electricity Generation</td><td>6.78%</td><td>10.47%</td><td>26.4%</td></tr>
<tr><td>Project Cost</td><td>10.19%</td><td>7.34%</td><td>-25.45%</td></tr>
<tr><td>O & M Cost</td><td>9.08%</td><td>8.18%</td><td>-124%</td></tr>
<tr><td>Tariff</td><td>6.78%</td><td>10.47%</td><td>26.43%</td></tr>
</table>

Electricity generation: Validation team confirms that the electricity generation figures were considered from the review of loan application and PLF study report prepared by the third party engineering company. Further MPERC tariff order for May 2010 states PLF to be about 20% (Section 8.3 of MPERC tariff order of May 2010). However, the project IRR does not cross the benchmark even after considering the PLF mentioned by the MPERC. Therefore, increase of PLF more than 26.4% is highly unlikely. There is no other project at Mahuriya wind site therefore, it will be inappropriate to compare the PLF of projects at other wind sites where PLF may be significantly different Validation team also confirms from its sectoral expertise that the PLF considered by the PP is suitable to the project activity.

Project cost: Validation team confirms from the review of firm purchase orders that actual investment in the project has already been done. The firm cost of the project is 887.45 Million INR.

O&M cost: Validation team confirms the O&M cost by comparison with similar projects; and local and sectoral expertise of the validation team. Further, the project IRR does not cross the benchmark even after considering no O&M cost.

Tariff rate: Validation team confirms from the review of power purchase agreement that tariff rate has been fixed at INR 4.35/kWh, same as considered during investment decision. Therefore, increase in tariff rate is highly unlikely.</td><td>✓</td></tr>
</table>

Use the table below to list all the inputs to the investment analysis and to describe how each parameter has been validated:

Parameter/input	Symbol/Unit	Value	Source	Means of validation	Conclusion
Project capacity	MW	15	Proposal dated: 27/12/2010	Validation team confirmed the project capacity from the review of purchase orders, commissioning certificate, power purchase agreements, loan application and sanction letter.	✓
Total project cost	Million INR	887.45	Proposal dated: 27/12/2010	Validation team confirmed the reasonableness of the project cost from the review of purchase orders, loan application and sanction letter; comparison with similar projects; and sectoral expertise.	✓
Plant load factor	%	21.12%	Proposal dated: 27/12/2010	Validation team confirmed the Plant load factor from the review of Proposal submitted by Suzlon dated: 27/12/2010. Validation team also reviewed the Madhya Pradesh Electricity Regulatory Commission (MPERC) tariff order of May 2010 which presents the PLF of 20% in Madhya Pradesh. Validation team also reviewed the PLF from the review of technical evaluation report prepared by Madhav Consultants dated: 31/12/2010 which mentions annual generation of 2.735 Millions kWh/WTG or 21.12% PLF. Madhav consultant is a third party engineering company and the PLF report is in accordance with the paragraph 3(b) of "Guidelines for the reporting and validation of plant load factors" (Version 01) Validation team also reviewed the bank loan application to Bank of Baroda dated: 11/01/2011, submitted for loan funding also presents PLF of 21.12% which is in accordance with the paragraph 3(a) of "Guidelines for the reporting and validation of plant load factors" (Version 01)	✓
Machine unavailability	%	5	Proposal dated: 27/12/2010	Validation team confirmed the Machine unavailability loss from proposal submitted by Suzlon dated: 27/12/2010 which presents it as 5%	✓

				Validation team confirmed from the review of the technical evaluation report prepared by Madhav Consultants dated: 31/12/2010 which presents it as 5%. Validation team confirmed from the review of bank loan application to Bank of Baroda dated: 11/01/2011, submitted for loan funding which presents it as 5%. Validation team confirmed the reasonableness of the machine unavailability from the sectoral expertise of the validation team.	
Transmission loss	%	3	Proposal dated: 27/12/2010	Validation team confirmed the transmission loss from proposal submitted by Suzlon dated: 27/12/2010 which presents it as 3%. Validation team confirmed from the review of the technical evaluation report prepared by Madhav Consultants dated: 31/12/2010 which presents it as 3%. Validation team confirmed from the review of bank loan application to Bank of Baroda dated: 11/01/2011, submitted for loan funding which presents it as 3%. Validation team confirmed the reasonableness of the transmission loss from the sectoral expertise of the validation team.	✓
Net annual electricity supplied by the project	Million kWh/annum	25.529	Proposal dated: 27/12/2010	Validation team confirmed the net electricity supplied by the project from the review of Proposal submitted by Suzlon dated: 27/12/2010. Validation team also reviewed the net electricity supplied by the project from the review of technical evaluation report prepared by Madhav Consultants dated: 31/12/2010 which mentions annual generation of 2.5529 Millions kWh/WTG or 20.82% PLF. Madhav consultant is a third party engineering company and the PLF report is in accordance with the paragraph 3(b) of "Guidelines for the reporting and validation of plant load factors" (Version 01).	✓

				Validation team also reviewed the bank loan application to Bank of Baroda dated: 11/01/2011, submitted for loan funding also presents net annual electricity supplied by the project of 25.529Million kWh which is in accordance with the paragraph 3(a) of "Guidelines for the reporting and validation of plant load factors" (Version 01).	
Tariff rate	INR/kWh	4.35	Tariff order of May 2010	Validation team confirmed the tariff rate from the firm power purchase agreement dated: 23/07/2011.	✓
Total O&M cost	INR Million	18.75	Proposal dated: 27/12/2010	Validation team confirmed the reasonableness of the O&M cost from comparison with similar projects and sectoral expertise.	✓
Escalation in O&M cost	%	5	Proposal dated: 27/12/2010	Validation team confirmed the reasonableness of the annual escalation O&M cost from comparison with similar projects and sectoral expertise.	✓
Free O&M	Year	1	Proposal dated: 27/12/2010	Validation team confirmed the reasonableness of the free O&M cost from proposal.	✓
Administrative cost	INR Million	1	Investment decision making	Validation team confirmed from the internal note prepared by the PP. PP had clarified that administrative costs involves cost of person employed for monitoring, travel cost and other miscellaneous costs. Suitability of administrative cost is confirmed from the local expertise of the team. Validation team confirmed the suitability of administrative cost from the review of loan application submitted to Bank of Baroda dated: 11/01/2011 for loan financing.	✓
Escalation in administrative cost	%	5	Investment decision making	Validation team confirmed from the internal note prepared by the PP. Validation team confirmed the suitability of inflation rate from the review of average (Geometric mean) annual end of period inflation rate from Indian Monetary fund (IMF) World Economic Outlook (WEO) database for September 2011[$] which is about 6.645%. Suitability of escalation in administrative cost is confirmed from the local expertise of the team Validation team also confirmed the suitability of escalation in administrative cost from the review of loan	✓

				application submitted to Bank of Baroda dated: 11/01/2011 for loan financing.	
Insurance	%	0.15	Tariff Advisory Committee note dated: 31/01/2002	Validation team confirmed the reasonableness of the insurance cost from the review of tariff advisory committee note for Insurance Information Bureau. Validation team also confirms the suitability of insurance cost from local expertise.	✓
Interest rate	%	10.50	Previous loan sanction letter from Bank of Baroda dated: 21/08/2010[£]	The PP has considered interest rate from previous sanctioned loan for a wind project to this project activity. In this loan sanctioned letter special concession of 2.50% from the commercial lending rate (or BPLR) was offered to the PP as its special customer. Validation team confirmed the reasonableness of the interest rate from the review of loan sanction letter and host country expertise.	✓
Loan processing fee	%	0.5	Previous loan sanction letter from Bank of Baroda dated: 21/08/2010[£]	Validation team confirmed the reasonableness of the loan processing fee from the review of loan sanction letter and host country expertise.	✓
Debt:equity ratio	Ratio	75:25	Investment decision	Validation team confirmed the reasonableness of the debt-equity ratio from the review of loan application, loan sanction and host country expertise.	✓
Moratorium	Months	6	Investment decision	Validation team confirmed the reasonableness of the moratorium from the review of loan application, loan sanction and host country expertise.	✓
Loan repayment period (after ending of moratorium period)	Months	72	Investment decision	Validation team confirmed the reasonableness of the loan repayment period from the review of loan application, loan sanction and host country expertise.	✓
Depreciation	%	80	Section 32 of Income tax act	Validation team confirmed the depreciation rate from the local regulations Section 32 of Income tax act.	✓
Income tax rate	%	30.90	Section 143 of Income tax act	Validation team confirmed the taxation rate from the local regulations. Section 143 of Income tax act	✓

[$] Follow the link http://www.imf.org/external/pubs/ft/weo/2011/02/weodata/index.aspx, select WEO data by countries, select developing Asia, select only India and proceed further, in monetary section select inflation, end of period consumer prices of Index and go to report. The inflation value is presented in percentages.

£ Previous loan sanction letter was also for a wind power project by the same PP.

	Validated situation	Conclusion
4. Confirm the suitability of any benchmark applied in the investment analysis: (a). Determine whether the type of benchmark applied is suitable for the type of financial indicator presented. (b). Ensure that any risk premiums applied in determining the benchmark reflect the risks associated with the project type or activity. (c). Determine whether it is reasonable to assume that no investment would be made at a rate of return lower than the benchmark by, for example, assessing previous investment decisions by the project participants involved and determining whether the same benchmark has been applied or if there are verifiable circumstances that have led to a change in the benchmark.	As per the 'Guidelines on the assessment of investment analysis' Version 05, in the cases of projects which could be developed by an entity other than the project participant the benchmark should be based on publicly available data sources which can be clearly validated by the DOE. Such data sources may include local lending and borrowing rates, equity indices, or benchmarks determined by relevant national authorities. PP has considered prime lending rate as a benchmark for the project IRR in accordance with the Para 12 of 'Guidelines on the assessment of investment analysis' Version 05, which states, "Local commercial lending rates or weighted average costs of capital (WACC) are appropriate benchmarks for a project IRR." The value has been sourced from Bank of Baroda, which is a nationalised bank in India. Loan sanction letter from Bank of Baroda dated: 21/08/2010 mentions applicable rate as 13.00% 5% spread over base rate of 8.00%. PP has considered the benchmark prime lending rate (BPLR) of Bank of Baroda applicable at the time of investment decision making. Validation team confirmed the BPLR mentioned by Bank of Baroda as 13.25% from letter from Bank dated 31/12/2010. Further to this, validation team also confirmed the BPLR of Bank of Baroda from publicly available information [1]. Bank of Baroda clarified in its letter dated: 04/07/2012 that interest rate offered to any customer or general commercial lending rate was 13.00% at the time of sanction of previous loan on 21/08/2010. Further, it was confirmed from the website that commercial lending rate was again revised to 13.25% on 13/12/2010 before the investment decision. Therefore, commercial lending rate of 13.25% was appropriate as a benchmark. Further to this, validation team also confirmed the BPLR published by other banks based on publicly available information. The BPLR ranged from 13.25% to 16.75% [1]. Thus the benchmark lending rate of 13.25% (minimum rate) as selected by the PP is considered reasonable and acceptable.	CL-02 (Closed) CL-05 (Closed)

<table>
<tr><th></th><th>Validated situation</th><th>Conclusion</th></tr>
<tr><td></td><td>
Post tax project IRR has been compared with commercial lending rate at the time of investment decision. Though pre-tax project IRR would have been appropriate to compare with commercial lending rate. However, pre-tax project IRR was 7.64% whereas post-tax project IRR was 8.64% as pre-tax project IRR would not be able to account the benefit of income tax savings from other businesses due to higher depreciation rate for taxation enjoyed by wind power projects. Therefore, comparison of post-tax project IRR with commercial lending rate has been considered conservative and thus appropriate.

CL-02 was raised as post-tax project IRR was compared with commercial lending rate, benchmark for pre-tax project cashflows. For resolution please refer to findings section below.

CL-05 was raised on suitability of the benchmark. For resolution please refer to findings section below.
[1] Prime lending rate of different banks at the time of investment decision
<table>
<tr><th>Sr. No.</th><th>Banks</th><th>BPLR</th><th>Reference</th></tr>
<tr><td>1.</td><td>Bank of Baroda</td><td>13.25%</td><td>http://www.moneycontrol.com/stocks/stock_market/corp_notices.php?autono=391989</td></tr>
<tr><td>2.</td><td>Bank of Maharashtra</td><td>13.25%</td><td>http://www.ndtv.com/article/cities/bank-of-maharashtra-hikes-interest-rates-72976</td></tr>
<tr><td>3.</td><td>Union Bank of India</td><td>13.25%</td><td>http://post.jagran.com/union-bank-raises-bplr-by-050-to1325-1292668098</td></tr>
<tr><td>4.</td><td>HDFC Bank</td><td>16.75%</td><td>http://articles.economictimes.indiatimes.com/2010-09-06/news/27604261_1_bplr-deposit-rates-benchmark-prime-lending-rate</td></tr>
<tr><td>5.</td><td>IDBI Bank</td><td>13.50%</td><td>http://www.moneycontrol.com/news/advertising/idbi-bank-revises-interest-rates-hikes-bplr-_496516.html</td></tr>
<tr><td>6.</td><td>Dena Bank</td><td>13.75%</td><td>http://articles.economictimes.indiatimes.com/2010-12-13/news/27598669_1_base-rate-respective-maturities-rates-on-term-deposits</td></tr>
</table>
</td><td></td></tr>
</table>

	Validated situation	Conclusion
	Minimum | **13.25%**	
(d). In case the project participants rely on values from a Feasibility Study Report (FSR) approved by any national authority, the team is required to ensure that: (a) The FSR has been the basis of the decision to proceed with the investment in the project, i.e. that the period of time between the finalization of the FSR and the investment decision is sufficiently short for the DOE to confirm that it is unlikely in the context of the underlying project activity that the input values would have materially changed. (b) The values used in the PDD and associated annexes are fully consistent with the FSR and, where inconsistencies occur, the DOE should validate the appropriateness of the values. (c) On the basis of its specific local and sectoral expertise, confirmation is provided, by cross-checking or other appropriate manner, that the input values from the FSR are valid and applicable at the time of the investment decision. Use the table below to cross-check input values and describe here the results of the comparison.	Feasibility Study Report (FSR) approved by any national authority is not available. Input values have been sourced from proposal, tariff order etc. which has been cross verified by the validation team.	-

Comparison to similar registered project in the region:

CDM Ref	Investment cost	Tariff	O&M cost	Capacity	Output	Investment cost per output	Load factor	O&M relative to investment	O&M per output
	Million INR	INR/kWh	Million INR	MW	MWh	Million INR/MW	%	%	INR/kWh
Project	887.45	4.35	18.75	15	25529	59.16	19.43%	2.11%	0.734
4879[#]	315	3.97	6.734	6	12057	52.5	22.94%	2.14%	0.559
3350[#]	755	4.03 – 3.36	10.117	15.2	29959	49.67	22.50%	1.34%	0.338
3996[#]	1320.36	4.03 – 3.36	23.60	22.5	50615	58.68	25.68%	1.79%	0.466
3818[#]	621.48	4.03 – 3.36	11.46	10.2	22115	60.93	24.75%	1.84%	0.518

[#] This project is located in different wind power site, other than Mahuriya wind site.

	Validated situation	Conclusion
SECTION 6d. Barrier analysis		
1. Does the PDD demonstrate that the proposed project activity faces barriers that prevent its implementation and do not prevent at least the implementation of one of the alternatives? Provide here an overall determination of the credibility of the barrier analysis. Use the below table to list each barrier considered in the PDD and to describe how the team undertake their validation.	Not applicable	-

Barriers are issues in project implementation that could prevent a potential investor from pursuing the implementation of the proposed project activity. The identified barriers are only sufficient grounds for demonstration of additionality if they would prevent potential project proponents from carrying out the proposed project activity undertaken without being registered as a CDM project activity.

Type of Barrier	Description in the PDD	Determination			Conclusion
		Barriers are real	Prevent implementation of PA	Do not prevent implementation of BL	

Access to finance					
Risks related barriers					
Technological					
Due to prevailing practice					
Other					
First of its kind					

	Validated situation	Conclusion
SECTION 6e. Common practice analysis		
1. Describe how the geographical scope of the common practice analysis has been validated. Assess whether the geographical scope (for example, the defined region) of the common practice analysis is appropriate for the assessment of common practice related to the project activity's technology or industry type.	Not applicable	-
2. Determine to what extent similar and operational projects (for example, using similar technology or practice), other than CDM project activities, have been undertaken in the defined region.	Not applicable	-
3. If similar and operational projects, other than CDM project activities, are already widely observed and commonly carried out in the defined region, assess whether there are essential distinctions between the proposed CDM project activity and the other similar activities.	Not applicable	-

	Validated situation	Conclusion

SECTION 7. Monitoring plan
1. *Compliance of the monitoring plan with the approved methodology.* Confirm that the MP contains all the necessary parameters and that they are monitored in accordance to the approve Methodology using the following table:

Parameter	Monitoring Meth description	PDD description	Validated situation	Conclusion
$EG_{facility,,y}$	**Description:** Quantity of net electricity supplied to the grid in year y **Unit:** MWh/y **Monitoring/recording frequency:** Continuous monitoring, hourly measurement and at least monthly recording. **Measurement methods and procedures:** Measurements are undertaken using energy meters. Calibration should be undertaken as prescribed in the relevant paragraph of "General Guidelines to SSC CDM Methodologies". If applicable, measurement results shall be cross checked with records for	**Description:** Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y **Data Unit:** MWh/y **Source of data to be used:** Monthly Report on Generation & Compensation Description of measurement methods and procedures to be applied: Metering at site metering point: The electricity generated by the project activity WTGs along with non-project WTGs is metered at feeder-wise site metering point/s. The metering point consists of a	Data unit and description are described correctly. The requirements to the data source, measurement procedures, monitoring frequency, accuracy and QA/QC procedures have also been described correctly and inline with the actual procedures followed. The net electricity supplied to the grid is measured and calculated. As per the monitoring procedures followed, electricity exported and imported from the grid by a group of wind turbines connected through a common feeder line is measured using tri-vector bi-directional electricity meter. Electricity generated by each wind turbine in the feeder line is measured by their respective LCS meter. The electricity exported and imported from the grid by each wind turbine is calculated through apportioning of losses. Net electricity supplied by the wind turbine is calculated by deducting imports from gross exports.	✓

	sold/purchased electricity (e.g. invoices/receipts). The net electricity export/supplied to a grid is the difference between the measured quantities of the grid electricity export and the import. If applicable, cross check net electricity supplied to a grid as gross energy generation in the project activity power plant minus the auxiliary/station electricity consumption, technical losses and electricity import from the grid to the project power plant measured at the grid interface/connection used for billing purposes	main meter, having accuracy of 0.2s. The respective check meter is installed at substation. These check meter is having accuracy class of 0.2s. The main meter at a given site metering point measures parameters like export & import for all the connected WTGs. The export reading for a given metering point for a given billing month is obtained by subtracting initial reading (taken in previous month) from the final reading (taken in billing month). The difference is multiplied by the applicable meter constant. Similar procedure is followed to arrive the import reading. The monitoring & measurement[9] of electricity at project metering point/s is being done on continuous basis; while recording is being done on monthly basis as *Joint Meter Reading* by the representatives of State Utility & PP.		

		Calculation of net electricity export to the grid by project activity WTG/s: The export & import by the project activity WTG/s connected at a given metering point is calculated by apportioning of the electricity at feeder level by the state utility. The apportioning of the electricity is based on the monthly *generation ratio* (ratio of controller reading of project activity WTG/s to the controller reading for all WTGs connected to the applicable metering point) at the given metering point and the electricity reading (export, import etc) recorded by the main meter at the given metering point on monthly basis. It gives monthly values of export & import for project activity WTG/s. The net export for any given month by the project activity WTG/s to the grid is then obtained by subtracting import from export. Thus: Net export for any given month by the project activity WTG/s to the grid = Export kWh – Import kWh		

		The values of the monthly net electricity delivered to the Grid by the project activity WTGs are aggregated annually to get quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year *y i.e.* $EG_{BL,y}$. The value of $EG_{BL,y}$ is converted to MWh before the calculation of emission reductions Metering at substation: The project metering point/s further evacuates the electricity to the substation. The substation provides respective feeder-wise back- up metering (check meters) facility. These check meters are having accuracy class of 0.2s. The monthly JMR is taken by the representative of PP & State Utility. **QA/QC procedures to be applied:** The meters shall be approved, tested & sealed by the State Utility. The meters are in the custody of State Utility. The calibration of the meters will		

		be carried out at least once in a years (as per paragraph 17 (c) of *General Guidelines to SSC CDM methodologies, Version 17*). The monthly electricity exported by the project activity in the JMR report will be cross checked with the monthly invoices of sale. In the absence of the meter calibration— *Guidelines For Assessing Compliance With The Calibration Frequency Requirements* will be applied appropriately to confirm the conservativeness of metering.		
2. *Implementation of the plan.* confirm that the monitoring arrangements described in the monitoring plan are feasible within the project design. Described the steps undertaken to assess this.			The monitoring plan describes the objective, organisational structure, roles and responsibility, the monitoring instruments, data monitoring procedures and the management system. On site review and field interview were conducted and it confirmed that the monitoring is planned in a reasonable manner and considered feasible to be implemented by the PP. CAR-05 was raised as actual monitoring practice as confirmed during site visit was different from that mentioned in the monitoring plan. For resolution please refer to findings section below.	CAR-05 (Closed)

3. *Implementation of the Plan:* confirm that the means of implementation of the MP, including the data management and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by / resulting from the proposed CDM project activity can be reported ex post and verified	The monitoring plan includes the internal quality control and assurance process, data control system and regular calibration of the monitoring instruments as appropriate that will ensure reliable monitoring and reporting of the ERs.	✓

	Validated situation	Conclusion
SECTION 8. Local stakeholder consultation		
1. Determine whether comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity, have been invited.	Validation team confirmed from the review of minutes of meeting and interview of local villagers that relevant stakeholders' were invited for the meeting through public notice dated: 17/01/2011 and personal invitation letters. Validation team confirmed through the interview of the local villagers that they were informed about the meeting and sufficient timeframe was provided. Therefore, the validation team confirmed that the invitation of comments was made in open and transparent manner, in a way that facilitates comments to be received from local stakeholders and allows for a reasonable time for comments to be submitted. Further, from the interview it was also confirmed that the agenda of the meeting includes comments on the proposed project activity.	✓
2. Confirm that the summary of the comments received as provided in the PDD is complete.	The PDD has correctly described the summary of comments. The summary of comments was confirmed from the interview of the local stakeholders interviewed during site visit.	✓
3. Confirm that the project participants have taken due account of any comments received and have described this process in the PDD.	Confirmed from the interview of local stakeholders that no negative comments were received.	✓

	Validated situation	Conclusion
SECTION 9. Environmental Impacts		
1. Is an EIA required by the environmental legislation of the host country? Describe the legislation applicable.	As per the Ministry of Environment & Forest (MoEF), Government of India, Environmental Impact Assessment (EIA) studies of the wind power generation plant is not an essential requirement as it is not covered under the eleven categories[7] as described in EIA Notification of 1994, or the Amended Notification of 2006.	✓
2. Confirm whether the project participants have undertaken an analysis of environmental impacts and, if required by the host Party, an environmental impact assessment.	N.A.	-
3. Confirm that environmental impacts considered significant by the PPs or the Host country are described in the PDD, including mitigation measures.	N.A.	-

[7] Ministry of Environment & Forests, 2006, *S.O.1533(E) Environmental Impact Assessment Notification-2006*, Schedule: List of projects or activities requiring prior environmental clearance, page 10 [online] Available at: <http://envfor.nic.in/legis/eia/so1533.pdf>

Findings[10]

1. Grade / Ref:	CAR 01	2. Date:	12/10/2011	3. Status:	Closed
4. Requirement:		Guidelines for completing CDM-SSC-PDD Version 05			
5. Nature of the Issue Raised:					
Section A.2 of the PDD does not explain how the proposed project activity reduces emissions.					
6. Nature of responses provided by the project participants:					
The PDD is now revised wrt how the proposed project activity reduces emissions. Please refer section A.2 of the revised PDD.					
7. Assessment of such responses:					
In response to the finding, the PP has revised the PDD. The revised PDD correctly presenting the explanation that project activity displaces electricity generated from the fossil fuel based grid connected power plants. Validation team confirmed the description from the review of the applied methodology; CO2 baseline database for Indian Power sector, Version 06; and field survey. Therefore, finding was closed.					
8. References to resulting changes in the PDD or supporting annexes:					
Section A.2					

1. Grade / Ref:	CAR 02	2. Date:	12/10/2011	3. Status:	Closed
4. Requirement:		Guidelines for completing CDM-SSC-PDD Version 05			
5. Nature of the Issue Raised:					
Section B.2 of the PDD does not justify choice of project type and category. Nor it demonstrate that the project activity qualifies as a small-scale project activity and that it will remain under the limits of small-scale project activity types during every year of the crediting period.					

6. Nature of responses provided by the project participants:	
PDD is now revised with respect to choice of project type and category. Further, the PDD now demonstrates that the project activity qualifies as a small-scale project activity and that it will remain under the limits of small-scale project activity types during every year of the crediting period. Please refer section B.2 of the revised PDD.	
7. Assessment of such responses:	
In response to the finding, the PP has revised the PDD. The revised PDD correctly presents the justification on project type and category in accordance with the latest version of General Guidelines of SSC methodologies. Validation team confirmed the justification from the review of purchase orders, commissioning certificates and field survey. Therefore, finding was closed.	
8. References to resulting changes in the PDD or supporting annexes:	
Section B.2	

1. Grade / Ref:	CAR 03	**2. Date:**	12/10/2011	**3. Status:**	Closed
4. Requirement:		Para 94 and 97 of CDM-VVM, Version 01.2			
5. Nature of the Issue Raised:					
Section B.5 of the PDD does not present the input values used in investment analysis.					
6. Nature of responses provided by the project participants:					
The input parameters for investment analysis are now included under section B.5 of the revised PDD.					
7. Assessment of such responses:					
In response to the finding, the PP has revised the PDD. Section B.5 of the PDD correctly presents the input values used in the investment analysis. Validation team confirms the input values from the review of investment analysis spreadsheet and supporting documents. Therefore, finding was closed.					

8. References to resulting changes in the PDD or supporting annexes:
Section B.5

1. Grade / Ref:	CAR 04	**2. Date:**	12/10/2011	**3. Status:**	Closed
4. Requirement:		Para 89 of CDM-VVM, Version 01.2			
5. Nature of the Issue Raised:					
The ex-ante option has been used for calculation of operating margin emission factor. The 3-year generation weighted average operating margin emission factor, ex-ante option, does not include electricity import in calculation of total electricity in the connected grid system, i.e. imports and net generation in OM, as required by the applied tool.					
6. Nature of responses provided by the project participants:					
The revised emission reduction spreadsheet now accounts for electricity imports. The generation weighted average emission factor now includes generation in the OM for NEWNE grid system and electricity imported by the grid and in accordance with *Tool to calculate emission factor for an electricity system*. PDD & Emission Reduction spreadsheet are now revised appropriately.					
7. Assessment of such responses:					
In response to the finding, the PP has revised the emission reduction spreadsheet. The revised emission reduction spreadsheet correctly includes the generation in OM and electricity import to the NEWNE grid for calculation of 3-year generation weighted average operating margin emission factor. Validation team confirms that calculation of emission factor is in accordance with the applied tool. Therefore, finding was closed.					
8. References to resulting changes in the PDD or supporting annexes:					
Section B.6 and emission reduction spreadsheet					

1. Grade / Ref:	CAR 05	**2. Date:**	12/10/2011	**3. Status:**	Closed
4. Requirement:		Guidelines for completing CDM-SSC-PDD, Version 05 and Para 122 of CDM-VVM, Version 01.2			

5. Nature of the Issue Raised:

1. Section B.7.1 does not include a description on the meters used for measurement.
2. PP to clarify how implementation of monitoring plan was feasible:
    a. It was noted that monthly invoice of sale mentions only net electricity exported to grid.
    b. It was noted that electricity exported to the grid and imported from the grid is not directly measured but calculated through apportioning. PP to clarify how actual monitoring is in conformance with the monitoring plan.

6. Nature of responses provided by the project participants:

1. Details of the meters is now updated in monitoring parameter table $EG_{BL,y}$ under section B.7.1 & B.7.2 of the revised PDD.

2. Clarification by PP on how implementation of monitoring plan was feasible:

    a. The monitoring plan is based on export, import & net export by the project activity to the grid. It can be envisaged from *Monthly Report on Generation & Compensation* for PP issued jointly by PP representative & state utility. Monthly invoice only refers to the net export values. These net export values are based on the *Monthly Report on Generation & Compensation & will be used for cross checking purpose during the monitoring.*

    b. PP has now included sample/indicative apportioning procedure of the electricity in the revised PDD under section B.7.2.

7. Assessment of such responses:

In response to the finding the PP has revised the PDD. The revised PDD correctly presents the details of the meter and monitoring plan. Validation team confirms the technical details of the meters from the review of Power Purchase Agreement, and field survey. Validation team also confirms the monitoring plan from the sample reports, invoices and field survey. Therefore, finding was closed.

8. References to resulting changes in the PDD or supporting annexes:

Section B.7

1. Grade / Ref:	CAR 06	**2. Date:**	12/10/2011	**3. Status:**	Closed

4. Requirement:	Guidelines for completing CDM-SSC-PDD, Version 05 and Para 68 of CDM-VVM, Version 01.2

5. Nature of the Issue Raised:

PDD was not referring to the most recent version of the Attachment A to Appendix B, Tool to calculate emission factor for an electricity system, and Guidelines on the assessment of Investment analysis will not be used.

6. Nature of responses provided by the project participants:

The PDD is now revised wrt to following latest version of tools/guidelines:

- *Tool to calculate the emission factor for an electricity system (Version- 02.2.1, EB- 63, Annex- 19)*
- *Attachment A of Appendix B, (Version- 08, EB- 63, Annex- 24)*
- *Guidelines on the Assessment of Investment Analysis (Version- 5, EB- 62, Annex- 5)*

7. Assessment of such responses:

In response to the finding, the PP has revised the PDD. The revised PDD correctly presents the applicable version of the documents and Guidelines. Validation team confirms from the review of the UNFCCC website that the referred versions are applicable. Therefore, finding was closed.

8. References to resulting changes in the PDD or supporting annexes:

Section B.1

1. Grade / Ref:	CL 01	**2. Date:**	12/10/2011	**3. Status:**	Closed
4. Requirement:		Para 108 and 111 (a) of CDM-VVM, Version 01.2			

5. Nature of the Issue Raised:

PP to clarify following on the input parameters:

1. How derating in the wind turbine efficiency is considered appropriate.
2. How service tax component was computed in total project cost.
3. How insurance cost is considered suitable.
4. Why electricity tariff rate is not subjected to sensitivity

6. Nature of responses provided by the project participants:
1. WTG consist of mechanical parts which are dynamic in nature and therefore subject to mechanical wear and tear (mechanical stresses). Because of continual uses of the system for power generation WTG will be under the cycle of wear tear and maintenance. By considering above fatigue cycle of WTG the performance will deteriorate with respect to time. Although it is not mentioned in the policy document but in real terms there will be the deration of WTG. It was also accepted by TERI and they have considered deration of 5% in there calculation. Supporting document of deration is attached for reference. Further registered project reference no. 4541, 2265 and 3813 has used the same reference for deration. 2. Please refer project cost details in "basic sheet" tab in "IRR Sheet" for details of service tax calculation. Service tax is calculated on the basis of offer letter submitted by WTG supplier. 3. As per "Guidelines on the assessment of investment analysis" Version 5, Annex 5, EB 62; PP should consider the values available at the time of decision making, accordingly PP has considered the insurance rate prescribed by Tariff Advisory Committee (TAC) i.e. 0.15% of the project cost. It can be referred at TAC Order (Sheet no. 31 under Risk code 70, Rate code 05 in Link: http://iib.gov.in/IRDA/tac/tariffs/AIFT2001.pdf) which was available at the time of decision making. 4. Sensitivity analysis for electricity tariff rate is provided in "Sensitivity Analysis" table now.
7. Assessment of such responses:
In response to the finding, the PP has clarified that the de-rating in wind turbine efficiency has been applied due to wear and tear in mechanical parts lowering its efficiency. Validation team confirms the justification and derating from its local and sectoral expertise, review of TERI report and loan application letter. The PP has further clarified the insurance cost has been sourced from the Tariff Advisory Committee of Insurance Information Bureau. Validation team confirms the insurance cost from the review of TAC report, loan application letter and local and sectoral expertise of the team. The PP has further revised investment analysis and the PDD to correctly compute the service tax and present the sensitivity over the electricity tariff rate. Validation team confirms the appropriateness of service tax in accordance with the local regulations. Validation team also confirms that service tax and sensitivity over tariff rate has been correctly computed in the investment analysis spreadsheet. Therefore, finding was closed.
8. References to resulting changes in the PDD or supporting annexes:
Section B.5 and investment analysis spreadsheet

1. Grade / Ref:	CL 02	2. Date:	12/10/2011	3. Status:	Closed
4. Requirement:		Para 112 (a) of CDM-VVM, Version 01.2			

5. Nature of the Issue Raised:

PP to clarify how pre-tax benchmark (prime lending rate) is appropriate to compare with post tax project IRR.
The evidence of prime lending rate published by RBI as stated in the PDD has not been presented for validation.

6. Nature of responses provided by the project participants:

As per para 12 of the EB-62, Annex 5, local commercial lending rates are appropriate benchmark for the project IRR, accordingly PP has considered commercial lending rate of the bank as benchmark of the project.

Further, pre-tax IRR of the project comes to 7.62% only. To consider the tax benefit (arises due to Accelerated Depreciation benefit) in IRR calculation, only post tax IRR should be computed (which is 8.62%) so as the post tax IRR is more than the pre tax IRR, PP has compared commercial lending rate, i.e. Benchmark Prime Lending Rate with post tax IRR on conservative side. Hence commercial lending rate is more appropriate to compare post tax project IRR.

PP has considered commercial lending rate of Bank of Baroda (lending bank) applicable at the time of decision making. Reserve Bank of India was wrongly mentioned in the PDD. Suitable section of PDD is modified now.

7. Assessment of such responses:

In response to the finding the PP had clarified that pre-tax project IRR does not account income tax savings from other business of the PP due to higher depreciation rate enjoyed by the wind power projects. PP has further revised the investment analysis spreadsheet to also present the pre-tax project IRR. Validation team also confirms from its local expertise that wind power projects enjoy higher depreciation rate. Validation team also confirms that pre-tax IRR has been correctly computed and would not be able to account the income tax savings. Therefore, validation team confirms that comparison of commercial lending rate as a benchmark for post-tax project IRR is conservative and appropriate. The PP has also presented the letter from Bank of Baroda on the commercial lending rate which is accurate for commercial lending rates in India. Validation team confirms the appropriateness of commercial lending rate from its local expertise. Therefore, finding was closed.

8. References to resulting changes in the PDD or supporting annexes:

Investment analysis spreadsheet

1. Grade / Ref:	CL 03	**2. Date:**	12/10/2011	**3. Status:**	Closed
4. Requirement:		Paragraph 89 of CDM-VVM, Version 01.2, AMS.I.D, Version 17			
5. Nature of the Issue Raised:					
PP to clarify why parameter $EF_{grid,CO2,y}$ in section B.6.2 refers to another parameter $EF_{grid,CM,y}$. Exact reference of the parameters $EF_{grid,CO2,y}$, $EF_{grid,BM,y}$ and $EF_{grid,OM,y}$ has not been included in section B.6.2 of the PDD.					
6. Nature of responses provided by the project participants:					
PP has calculated the grid emission factor (as per AMS ID denoted as $EF_{CO2,grid,y}$) by combine margin method. So as per '*Tool to calculate the emission factor for an electricity system*' (Version- 02.2.1, EB- 63, Annex- 19) PP has also used grid emission factor notation as $EF_{grid,CM,y}$ in the PDD. Foot note in this regard is now included in the PDD under section B.4 in the formula of $BE_y = EG_{BL,y} \times EF_{CO2,grid,y}$ & section B.6.2 under monitoring parameter table "$EF_{grid,CO2,y}$". Exact references for $EF_{grid,CO2,y}$, $EF_{grid,BM,y}$ and $EF_{grid,OM,y}$ are now included under section B.6.2 of the revised PDD.					
7. Assessment of such responses:					
In response to the finding, the PP has revised the PDD. The revised PDD correctly mentions the notation in accordance with the applied methodology and tool. Validation team confirms that notations in the revised PDD are in accordance with the applied methodology. Validation team also confirms from the review of the PDD that exact references including the years of data etc. has been provided. Therefore, finding was closed.					
8. References to resulting changes in the PDD or supporting annexes:					
Section B.6.2					

1. Grade / Ref:	CL 04	**2. Date:**	18/01/2012	**3. Status:**	Closed
4. Requirement:		Paragraph 58 of CDM-VVM, Version 01.2			
5. Nature of the Issue Raised:					
Unique coordinates of the project activity was not matching with that confirmed during the site visit					

6. Nature of responses provided by the project participants:
PDD has been revised to present the correct unique coordinates of each of the wind turbine.
7. Assessment of such responses:
In response to the finding, the PP has revised the PDD. The revised PDD correctly presents the geo-graphical coordinates. Validation team confirms that the geographical coordinates were inline with that confirmed during the site visit. Therefore, finding was closed.
8. References to resulting changes in the PDD or supporting annexes:
Section A.4.1.4

1. Grade / Ref:	CL 05	**2. Date:**	24/05/2012	**3. Status:**	Closed
4. Requirement:		Paragraph 112 (a) of CDM-VVM, Version 01.2			
5. Nature of the Issue Raised:					
PP to clarify the suitability of commercial lending rate used as benchmark, when lower interest rate was used in investment analysis.					
6. Nature of responses provided by the project participants:					
PP clarified that interest rate used in the investment analysis was based on previous sanctioned loan. This is appropriate for the project activity as loan sanctioned previously was used for the project activity. Loan sanction letter clearly describes the interest rate offered was 10.50%, i.e. 2.5% spread over base rate of 8% and 'applicable interest' rate was 13%, i.e. 5% spread over base rate of 8%. Lower interest rate offered to the PP was a special concession whereas commercial lending rate in India is the prime lending rate. Further, on 13/12/2010, which is after the loan sanction letter dated: 21/08/2010 and prior to the investment decision dated: 01/01/2011, the prime lending rate or the commercial lending rate offered by Bank of Baroda was again revised to 13.25%. Therefore, commercial lending rate of 13.25% was considered as benchmark which was available at the time of investment decision. Also, the Bank of Baroda in its letter dated: 04/07/2012 clarified the applicable interest rate as being offered to any customer or average commercial lending rate.					

7. Assessment of such responses:
Validation team confirmed from the loan sanctioned letter dated: 21/08/2010, clarification letter dated: 04/07/2012 from Bank of Baroda and its host country expertise that the commercial lending rate offered by this bank was the 'applicable interest rate' or prime lending rate and the interest rate offered to the PP was based on special concession. Based on the review of justification provided by the PP, clarification letter submitted by Bank of Baroda dated: 04/07/2012, validation team confirmed the appropriateness of the interest rate used in the investment analysis and commercial lending rate used as benchmark. Therefore, finding was closed.
8. References to resulting changes in the PDD or supporting annexes:
NA