Validation Report

Report for:
D. J. Malpani

Validation of CDM project for
Grid Connected Wind Power Project by M/s. D. J. Malpani in Rajasthan

LRQA Reference	:	CDM-MUM-0061727 Version 03.1
Date	:	10 February 2012
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Contents

1 Executive Summary

Lloyd's Register Quality Assurance Limited has been contracted by D. J. Malpani, the project participant (PP), to undertake validation of the proposed project activity "Grid Connected Wind Power Project by M/s. D. J. Malpani in Rajasthan". The validation has been performed through a process of document review based on the project design document, Version 01 dated 15/04/2011 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 activity involves the installation of five 1.5MW capacity Wind Turbine Generators (WTGs) in the Jaisalmer district of Rajasthan. The purpose of the project activity is to generate electricity by utilising the renewable wind potential available in the region, so there will be no GHG emissions. The project activity shall achieve GHG emission reductions by supplying the net electricity generated to the Northern, Eastern, Western, and North-Eastern (NEWNE) grid which is predominantly dependent on fossil fuel based power plants.

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 5 CARs & 1 CL. The PP has taken actions and submitted to LRQA the revised project design document and supporting evidence. The validation team is of the opinion that the proposed project activity as described in the project design document Version 02.3 dated 09/02/2012 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. D. J. Malpani in Rajasthan" to the CDM Executive Board as a CDM project activity.

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Abbreviations

AVVNL	Ajmer Vidyut Vitran Nigam Limited
BE	Baseline emissions
CARs	Corrective action requests
CDM	Clean development mechanism
CDM-EB	Executive board of clean development mechanism
CDM M&P	Modalities and procedures for a clean development mechanism
CDM SSC PDD	Clean development mechanism Small-Scale Project design document
CDM VVM	CDM Validation and Verification Manual
CERs	Certified emission reductions
CM EF	Combined Margin Emission Factor
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
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
MW / MWh	Mega watt / Mega watt hour
NEWNE	Northern, Eastern, Western, and North-Eastern grid
ODA	Official development Assistance
O&M	Operation & Maintenance
PDD	Project design document
PE	Project emissions
PLF	Plant Load Factor
PO	Purchase Order
PP	Project participant
PPA	Power Purchase Agreement
RBI	Reserve Bank of India
RERC	Rajasthan Electricity Regulatory Commission
SSC M&P	Simplified Modalities and Procedures for Small-Scale CDM project activities
tCO_2e	Tonnes of carbon dioxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change
WTG	Wind Turbine Generator

2 Introduction

The project participant (PP) represented by D. J. Malpani 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. D. J. Malpani in Rajasthan". This report summarises the findings of the validation process that has been conducted on the basis of validation requirements of the CDM.

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

Imran Ustad	LRQA Ltd. India	Team Leader CDM Lead Validator Sector Expert
B. Rampradap	LRQA Ltd. India	Team Member CDM Validator Sector Expert
Prabodha C Acharya	LRQA Ltd. India	Technical reviewer 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 for Operational Entities version 3.0 (EB 62, Annex 1). 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.

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

The project activity implemented by D. J. Malpani involves the installation of the wind power project of total capacity 7.5MW which includes five 1.5MW capacity WTGs. The project activity intends to generate electricity from wind which results in the reduction of GHG emission as the net electricity generated by the project is supplied to the fossil fuel dominated NEWNE grid.

The net electricity supplied from the project activity will displace equivalent electricity from the NEWNE grid which is primarily fossil fuel based and hence will result in reduced greenhouse gas emissions. The validation team confirms that the Wind Turbine Generators (WTGs) of Suzlon of capacity 1.5MW are based on proven technology used elsewhere in the host country for electricity generation using wind energy. The annual electricity generation by the project is estimated at 14,374MWh and the annual emission reduction has been estimated as 13,636 tCO_2e.

The project activity is categorised in the sectoral scope 1 – Energy industries (renewable/non-renewable sources). The output capacity of the proposed project activity is 7.5MW and it meets the criteria of Type I of the small scale CDM project activities (SSC).

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 dated 15/04/2011 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 02.3 dated 09/02/2012 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
12 July 2011	Project Site / Substation Jaisalmer, Rajasthan	Technology supplier Local stakeholders Project Participant	• Project Idea – Selection of technology & Selection of site • Project boundary issues/discussions • Performance of WTGs – Power generation, grid availability, PLF, Machine availability, losses • Physical identification of WTG based on unique identification number • Procedures for monitoring & reporting, QA/QC systems, training programme • Data collection, monitoring and recording of Central Monitoring station • Discussion about the WTG controller and the data apportioning procedure • Electricity metering provision, Calibration schedule of meters • Institutional arrangement of data collection and archiving • Record keeping – daily production report, operation log • Provisions for internal audits • Emergency preparedness • Projects contribution to sustainable development • Legal requirements/ Other Statutory requirements • Discussion on sublease of land • Discussion on environmental impact assessment of the project • Discussion on local stakeholder consultation process • Invitation letters issued to local villagers • Representation by stakeholders in stakeholders' consultation meeting • Minutes of meeting –	Imran Ustad

Date	Location/ Address	Party Interviewed	Subjects Covered	Team Members on Site
			Comments, action taken • Employment of local skilled and unskilled people • Project contribution to sustainable development • 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 the National Clean Development Mechanism Authority (NCDMA) established in the Ministry of Environment and Forests (MoEF), Government of India. A letter from approval from the host country dated 20/09/2011, reference number 4/16/2011-CCC has been received. The LoA received from the host country has been provided in the Appendix B. This letter of approval confirms the contribution of the project activity "Grid Connected Wind Power Project by M/s. D. J. Malpani in Rajasthan" 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

D. J. Malpani is private entity having its registered office in India.

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

Participation in the project activity of the PP has been authorized, as confirmed in the LoA issued by the DNA of the Party concerned. The team confirmed that no entities other than the authorized entity are indicated as project participant 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 applicable to the validation – for small scale CDM project.

A valid form of the CDM-PDD is used that is the current form 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

The project activity involves installation of wind power generation of total capacity of 7.5 MW consisting of five WTGs (5 x 1.5 MW) connected to the NEWNE grid system in the host country, India, to displace the predominantly fossil fuel based power generation and thereby reducing the GHG emissions.

The details on the location of the project activity WTGs were confirmed as Sangana and Chord Villages in Fatehgarh taluka, and Asayach village in Jaisalmer taluka of Jaisalmer District, Rajasthan, India as given in the section A.4.1.4 of the PDD. The geographic coordinates of the project activity are as below:

Sr. No.	WTG location no.	Village	Taluka	District	Latitude	Longitude
1	AK-278	Sangana	Fatehgarh	Jaisalmer	26°47'48.7" N	71°08'12.6" E
2	AK-283	Asayach	Jaisalmer	Jaisalmer	26°48'54.9" N	71°07'04.6" E
3	AK-262	Chord	Fatehgarh	Jaisalmer	26°45'32.0" N	71°09'49.3" E
4	AK-321	Chord	Fatehgarh	Jaisalmer	26°47'36.7" N	71°10'15.8" E
5	AK-331	Asayach	Jaisalmer	Jaisalmer	26°49'45.3" N	71°07'59.6" E

The WTGs are supplied by Suzlon Energy Limited (hereafter called Suzlon) and are connected to the NEWNE grid system of India. Net electricity generated will displace the grid electricity which is predominantly fossil fuel based, thereby reducing the GHG emissions.

During the process of validation, LRQA confirmed the capacity, unique identification of the project activity, estimated power generation, arrangement for evacuation of electricity generated, technical specifications, date of commissioning, arrangements for

O&M and necessary clearances for setting the project activity. The list of documents reviewed during the course of the validation is presented under Appendix B.

The technical details with respect of the WTG provided in the PDD were confirmed with technical brochures from Suzlon. In confirming the details, the parameters with respect of the rotor diameter, rotor speed, nominal power, hub height and the expected annual generation were given special emphasis. The model S-82 of Suzlon has been listed by 'Centre for Wind Energy Technology', Govt. of India[1] confirming availability of type certificate.

The expected net PLF from the project activity is 21.88% as presented by the supplier in the offer document. Further to this, PP also conducted a third party assessment[2] for determining PLF in accordance with the Para 3 (b), Annex 11 of the report of 48th meeting of the CDM EB "Guidelines for the reporting and validation of plant load factors" (Version 01). The third party firm estimated a net PLF of 23.04%. The PP has chosen a lower PLF (21.88%) in the estimation of baseline emissions so that there is no over estimation of ex-ante emission reduction estimate, whereas, a higher PLF (23.04%) has been chosen for demonstration of additionality. LRQA deems this logic as appropriate and conservative. The Plant Load Factor (PLF) was also compared with similar projects operating in the region and found to be within the acceptable range.

The description of the project activity has been confirmed through the site survey, interview and review of documents. The technical specifications of the project provided in the PDD were confirmed during the site survey and also from the technical specifications provided by the WTG supplier. The PP had also presented approvals for the installation of WTG, commissioning certificates, purchase orders and power purchase agreements (PPAs) (Refer Appendix B of the validation report).

The accuracy and completeness of the project description was validated by document review including offer letter from the technology supplier, purchase orders, tariff order, commissioning certificates, PPAs, interview, and field survey.

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

The project generates electricity from the renewable energy sources and thus displaces electricity from the NEWNE grid system. The project involves installation of five WTGs, each with an individual capacity of 1.50 MW aggregating to 7.5 MW which is less than 15MW. The validation team confirmed the total capacity of the project through the investment decision, necessary approvals, supply agreements and Power Purchase Agreements (PPA). From the interview of the PP, the validation team has confirmed that the PP does not intend to increase the generation capacity of this project through the entire crediting period of the project.

Thus, 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

[1] http://www.cwet.tn.nic.in/html/information_ml.html

[2] PP contracted third party engineering firm Madhav Consultants for conducting PLF assessment

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 "Grid connected renewable electricity generation" Version 16. AMS-I.D is valid from 11 Jun 2010 to 16 Jun 2011 and requests for registration applying AMS-I.D version 16 can be submitted until 17 Feb 2012 23:59:59 GMT[3].

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 of the commissioning certificate, PPAs, interview and field survey. This information was substantiated via cross-check with the CO_2 baseline database Version 6.0 which is the latest version available at the time of submission of the PDD for validation. 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 of whether any discrepancy was identified, and the processes taken, e.g. issued CAR or requested clarification of, revision to or deviation from the approved methodology for approval by the CDM-EB before completion of the validation, 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 "Grid connected renewable electricity generation" Version 16. 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 participant 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;

[3] https://cdm.unfccc.int/methodologies/DB/RSCTZ8SKT4F7N1CFDXCSA7BDQ7FU1X

- 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 project emissions, leakage, baseline emissions and emission reductions comply with the requirements of the approved methodology AMS-I.D "Grid connected renewable electricity generation" Version 16. 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 participant are listed in the PDD, including their references and sources;
- All documentation used by project participant 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 simplified modalities and procedures for small-scale CDM project activities, a simplified baseline and monitoring methodology listed in Appendix B may be used for a small-scale CDM project activity if project participant are able to demonstrate to a designated operational entity that the project activity would otherwise not be implemented due to the existence of one or more barrier(s) listed in Attachment A of Appendix. B as follows:

- Investment barrier
- Technological barrier
- Barrier due to prevailing practice
- Other barriers

The PP has presented the financial unattractiveness of the project activity through investment barrier for which the PP has applied the benchmark analysis. Since the baseline for the project activity is electricity supplied by the grid which is outside the direct control of the project developer, the choice of benchmark approach for demonstration of additionality is relevant.

The steps taken to assess the investment analysis are described in the Validation protocol in Appendix F.

Prior consideration of CDM

The start date for the project activity is 03/01/2011, the earliest date on which the purchase orders for the WTGs were placed by D. J. Malpani and thereby the PP has committed to expenditures related to implementation of the project. LRQA has validated the start date in accordance with Glossary of CDM terms version 05, through the review of purchase orders for WTG, commissioning certificates and power purchase agreements.

The project activity started after 2 August 2008. The PP has informed the Host Party designated national authority (DNA) and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status. Such notification was made to UNFCCC secretariat and to NCDMA on 10/02/2011, which are within six months of the project activity start date. Through the process of validation, LRQA confirms that the proposed project activity complies with the requirement of the Guidelines on the demonstration and assessment of prior consideration of the CDM Version 04.

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

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 PP has 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.

For details about the validation of the parameters used in the financial calculations, 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 “Grid connected renewable electricity generation” Version 16.

LRQA confirms that the Monitoring Plan described in the PDD complies with the requirements in the Monitoring Methodology and that the PP 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 PP invited Local Stakeholders to comment on the proposed project activity on the 24/03/2011 prior to the publication of the PDD on the UNFCCC website. The local stakeholder consultation meeting was held in Jaisalmer, Rajasthan and the following persons and entities attended the stakeholders meeting.

1.	Nitin P Jadhav	D. J. Malpani
2.	Mohammed Aabid	Deputy General Manager - CRM, Suzlon Energy Limited
3.	Kishan Lal	Suzlon Energy Limited
4.	Gaurav Jain	Suzlon Energy Limited
5.	Himanshu Kulkarni	Suzlon Energy Limited
6.	Satyajit Thakur	MITCON Consultancy and Engineering Services Ltd
7.	Babu Ram	Local villager
8.	Jitender Singh	Local villager
9.	Shera Singh	Local villager
10.	Girdhar Singh	Local villager
11.	Ishaq Khan	Local villager
12.	Mohan Ram	Local villager
13.	Madan Lal	Local villager

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 as per the host country regulations, the project activity does not require Environmental Impact Assessment (EIA) to be conducted.

For details about the document review and determination of whether the PP 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 dated 15/04/2011 was modified and several changes occurred due to the result of validation process. The PDD version 02.3 dated 09/02/2012 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. PLF considered for financial analysis and emission reduction estimate changed for being conservative. Refer CAR 03.
2. Change in the project IRR as a result of change in the PLF considered for financials based on the offer document (23.04%) Refer CAR 03.
3. Change in the ex-ante emission reduction estimate as a result of
    - change in PLF considered for emission reduction estimation based on the

third party PLF report (21.88%) and

- Change in grid emission factor from 0.9580 tCO_{2e}/MWh (PDD version 1) to 0.9487 tCO_{2e}/MWh (PDD version 2.3). Refer CAR 03.

4. Changes in the monitoring plan wherein the details on the apportioning mechanism adopted by the state utility to calculate the net electricity supplied by the project activity has been included. Refer CAR 04.
5. Contact details (telephone and fax numbers) of the PP has been revised in PDD version 2.3.

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 29 April 2011 to 28 May 2011 as per https://cdm.unfccc.int/Projects/Validation/DB/K1BQ5S70C0YB4GS4DSTY1J7UCFHER9/view.html

Two comments were received during this period. 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. D. J. Malpani in Rajasthan" 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 involves the installation of five 1.5MW capacity Wind Turbine Generators (WTGs) in the Jaisalmer district of Rajasthan. The purpose of the project activity is to generate electricity by utilising the renewable wind potential available in the region, so there will be no GHG emissions. The project activity shall achieve GHG emission reductions by supplying the net electricity generated to the NEWNE grid which is predominantly dependent on fossil fuel based power plants.

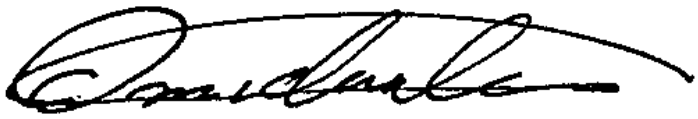
The project activity is categorized in the sectoral scope I – Energy Industries (renewable /non-renewable sources). The installed capacity of the proposed project is 7.5MW and it meets the criteria of Type I of the small scale CDM project activities (SSC). The estimated GHG emission reduction from the project activity is 13,636 tCO_2e per annum during the first renewable crediting period of 7 years.

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 baseline and monitoring 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 5 CARs and 1 CL. The PP has taken action on the raised issues and submitted to LRQA the revised PDD 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 13,636 tCO_2e and contribute to the sustainable development of the host country. Therefore LRQA requests the registration of "Grid Connected Wind Power Project by M/s. D. J. Malpani in Rajasthan" to the CDM Executive Board as a CDM project activity.

Decision Maker



Michiaki Chiba

Climate Change Manager – Asia & Pacific

7 Appendices

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

Letter of Approval from the Ministry of Environment and Forests (MoEF), Government of India (Host Country DNA) No:4/16/2011-CCC dated 20/09/2011.

7.2 Appendix B: List of documents reviewed

Category A documents (documents prepared by the PP)

1. Project Design Document Version 01 dated 15/04/2011, Version 02 dated 14/10/2011, Version 02.1 dated 16/12/2011, Version 02.2 dated 29/12/2011 and Version 02.3 dated 09/02/2012
2. Emission Reduction calculation spreadsheet Version 01 dated 15/04/2011, Version 02 dated 14/10/2011, Version 02.1 dated 16/12/2011 and Version 02.2 dated 09/02/2012
3. Investment analysis spreadsheet Version 01 dated 15/04/2011, Version 02 dated 14/10/2011, Version 02.1 dated 16/12/2011 and Version 02.2 dated 29/12/2011
4. Offer letter from Suzlon Energy Ltd for supply of 5 nos of S82 WTGs dated 27/12/2010
5. Offer letter from Suzlon towers and structures limited for supply of 5 nos of tubular towers for S82 WTGs dated 27/12/2010
6. Offer letter from Suzlon Infrastructures Services Ltd. for supply of 5 nos. of transformer for S82 WTGs dated 27/12/2010
7. Offer letter from Suzlon Infrastructures Services Ltd. for civil works dated 27/12/2010
8. Offer letter from Suzlon Infrastructures Services Ltd. for electrical works dated 27/12/2010
9. Offer letter from Suzlon Infrastructures Services Ltd. for erection, installation and commissioning of WTGs dated 27/12/2010
10. Offer letter from Suzlon Gujarat Wind Park Ltd. for arranging land for 3 nos. of WTGs dated 27/12/2010
11. Offer letter from Suzlon Infrastructure Finance Ltd. for arranging land for 1 no. of WTG dated 27/12/2010
12. Offer letter from Sarjan Realities Ltd. for arranging land for 1 no. of WTG dated 27/12/2010
13. Offer letter from Suzlon Power Infrastructure Limited for arranging power evacuation facilities for 5 nos of WTGs
14. Offer letter from Suzlon Infrastructure Limited for providing O&M services for 5 nos of WTGs dated 27/12/2010
15. Purchase order issued by M/s D.J.Malpani for 5 nos of WTGs dated 03/01/2011
16. Purchase order for 5 Nos of tubular tower components dated 03/01/2011

17. Purchase order for 5 Nos of transformer components dated 03/01/2011
18. Work order for civil works for 5 nos of WTG dated 03/01/2011
19. Work order for electrical works for 5 nos of WTG dated 03/01/2011
20. Work order for erection, installation and commissioning of 5 nos of WTGs dated 03/01/2011
21. Work order for arranging land for 3 nos of WTGs dated 03/01/2011
22. Work order for arranging land for 1 no of WTG dated 03/01/2011
23. Work order for arranging land for 1 no of WTG dated 03/01/2011
24. Work order for arranging power evacuation infrastructure for 5 nos of WTG dated 03/01/2011
25. Commissioning certificates for WTGs with location no. AK-278, AK-262 and AK-321 dated 15/04/2011
26. Commissioning certificates for WTGs with location no. AK-283 and AK-331 dated 15/04/2011
27. Email communication from PP to UNFCCC and NCDMA on CDM consideration dated 17/02/2011
28. Email acknowledgement from NCDMA to PP on CDM consideration dated 22/02/2011
29. Sample JMR for Akal Substation for months March 2011 and April 2011
30. Sample electricity break-up statements for project WTGs for the months March 2011 and April 2011
31. Sample invoices raised by PP for the months March 2011 and April 2011
32. Letter of invitations for local stakeholder consultation meeting
33. Minutes of meeting for local stakeholder meeting conducted on 24/03/2011
34. Attendance sheet for local stakeholder meeting conducted on 24/03/2011
35. Public notice on local stakeholder meeting dated 12/03/2011
36. Partnership deed for M/s D J Malpani dated 21/12/1998
37. Technical specifications for Suzlon S82 WTG provided by Suzlon Energy Limited
38. Power Purchase Agreement between D J Malpani, Suzlon Infrastructure Services Limited and Jodhpur Vidyut Vitran Nigam Limited dated 04/03/2011
39. Amended Purchase Order dated 08/03/2011 relating to O&M charges
40. Extract of minutes of partners meeting dated 31/12/2010
41. Contract agreement between M/s D J Malpani and MITCON Consultancy & Engineering Services Ltd. for CDM advisory services dated 24/01/2011
42. Contract agreement between M/s D. J. Malpani and Madhav Consultants for determination of PLF for the project activity dated 28/12/2010
43. Transfer/sub-lease documents from Rajasthan Renewable Energy Corporation Limited dated 26/04/2011

Category B documents (other documents referenced)

1. AMS I-D Grid connected renewable electricity generation, Version 16.
2. "Tool to calculate the emission factor for an electricity system" Version 02
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 6.0 CO_2 baseline database for Indian power sector.
6. http://cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm
7. Clean Development Mechanism Small Scale Project design document form (CDM-SSC – PDD)
8. 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
9. Guidelines on the Assessment of Investment Analysis version 05 (Annex 5 to the report of 62nd meeting of the CDM-EB)
10. Guidelines on the Demonstration and Assessment of prior consideration of the CDM (Version 04)
11. Guideline for the reporting and validation of plant load factors (Version 01)
12. Clean Development Mechanism Validation and Verification Manual version 1.2 (Annex 01, EB 55)
13. Eligibility Criteria for Host Country Approval, National CDM Authority, Ministry of Environment & Forests
14. Notification by Ministry of Environment & Forests dated 01/12/2009
15. Tariff order for Rajasthan dated:, 29/09/2006, 16/07/2009, 31/03/2010 and 06/08/2010
16. Notification by Ministry of Environment & Forests dated 01/12/2009
17. Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006

7.1 Appendix C: List of persons interviewed

D. J. Malpani (Project Participant)

Mr. Prafulla Khinvasara	Head – Wind Power Projects

Suzlon Energy Limited (Technology Supplier)

Mr. Mohammed Aabid	Deputy General Manager – CRM, SEL
Mr. Chetan Mehra	Deputy Manager, SEL
Mr. Kaushik Patel	Manager – Marketing, SEL

Suzlon Infrastructure Services Limited (O&M Contractor)

Mr. Manoj Kumar Verma	Manager (O&M)
Mr. Shiv Prakash Singh	Senior Engineer (O&M)
Mr. Bihari Ram	Assistant Manager (O&M)

Mr. Parixit Choudhary	Shift Engineer
Mr. Nitin R Salunkhe	Site Incharge

Local villagers

Mr. Babu Singh	Contractor, Sangana village
Mr. Prem Singh	Security person, Mokla village
Mr. Mukesh	Peon, Chord village
Mr. Mayur Bharda	Wireman, Asayach village
Mr. Gopal Singh	Office boy, Sanu village

MITCON Consultancy & Engineering Services Ltd.

Mr. Kishor Deshmukh	Chief Consultant
Mr. Chandraprakash Singh	Assistant Vice President Finance (Energy and Carbon services)
Mr. Vinay Tripathi	Principal Consultant – Finance

7.2 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 29 April 2011 to 28 May 2011 as per https://cdm.unfccc.int/Projects/Validation/DB/K1BQ5S70C0YB4GS4DSTY1J7UCFHER9/view.html.

Two comments were received during the period and the comments were made publicly available.

Comments received have been taken into consideration as follows:

GSC COMMENT No. 1	RESPONSE FROM PP	CONCLUSION FROM VALIDATION TEAM
It is evident from the PDD that the values are consistent and it is definitely forged and cooked up values to show a non CDM project as a CDM project. What is this? DoE to check the Detailed Project Report and Feasibility Report which is submitted to the other agencies and Banks by Project owner and ensure that the values match with the DPR/FR submitted to DoE also. After careful study of PDD it is found that DPR/FR is in different versions made and submitted with different purposes to different agencies which is totally unacceptable, illegal and unethical. PP/Consultant may show some undertaking letter from bank manager to DoE	The comment is not relevant as project doses not involve any DPR/FR etc neither the project is availing any loan from any bank.	The PP has not prepared any Feasibility Report or a Detailed Project Report. The input values were based on the quotations being made available by the technology supplier at the time of investment decision making. The project does not involve any debt funding as well and is funded by 100% equity. This was confirmed based on interviews with the PP. This comment is not relevant in the project context. The validations of input values have been detailed in the section 6 I of

GSC COMMENT No. 1	RESPONSE FROM PP	CONCLUSION FROM VALIDATION TEAM
stating that both DPR's are same. These kinds of letters should not be accepted and entertained by DoE. While collecting the DPR/FR from banks and other agencies, all DPR/FR pages should be counter signed by Banks and other agencies so that the real DPR/FR given to other parties by the PP/Consultant is same as the one submitted to DOE. In this particular project there is clear cut evidence that DPR/FR values are changed/ fabricated mischievously and intentionally. This must be probed fully. DOE must take a written undertaking from the PP/Consultant about the list of parties to whom this DPR/FR is submitted and for what purposes. Then DOE should cross check with all the parties and confirm that the same DPR/FR is submitted to all the parties correctly without any changes. DOE must not accept any reports and undertakings from PP/Consultant. DOE must make independent evaluation and use totally different parties without informing the PP or Consultant to cross check the facts. DOE to write to the party who prepared the DPR/FR which is submitted to the banks and other agencies and the same is verified against the one submitted to the DOE by PP/Consultant. This project is a fabricated and fake CDM project and must be rejected by the DOE right away. DOE should not support this kind of projects otherwise CDM EB should suspend this DOE for at least one year.		validation protocol.
Submitted by: zhong zhou li		

GSC COMMENT No. 2	RESPONSE FROM PP	CONCLUSION FROM VALIDATION TEAM
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.	The purpose of the project and how the proposed project activity reduces greenhouse gas emissions are already mentioned in the	This was already briefed in the relevant section of the PDD and has been validated. Please refer section 4 of the validation

GSC COMMENT No. 2	RESPONSE FROM PP	CONCLUSION FROM VALIDATION TEAM
	PDD under section A.2.	protocol.
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	Details on environmentally safe and sound technology is already available under A.4.2. Further, the PDD is updated regarding technology transfer under section A.4.2.	This is briefed in the relevant section of the PDD Version 2.3 and validated. Please refer section 4 of the validation protocol.
3) Non- debundling nature of the project activity is not adequately justified as per EB54 Annex 13 (Debundling tool). Refer A.4.5.	PP has justified the de bundling as per the "*Guidelines on Assessment of Debundling for SSC Project Activities*" (Version- 03, EB- 54, Annex- 13). PP has further updated section A.4.5 of the revised PDD. Please refer footnote 5.	This is briefed in the section A.4.5 of the PDD Version 2.3. Site visit and interviews with the PP confirmed that there is no CDM registered project of the same category & technology of the project activity within 1km of the project boundary. PP has implemented two projects registered as CDM projects (ref no. 1778 and 3742), however they are not in the state of Rajasthan. The project activity satisfies the criteria of Appendix C of the simplified M & P for SSC-CDM project activities
4) Please check the project boundary of the project activity is not based on the guidance of the applicable project category.	The project boundary is inline with paragraph 9 of the chosen project category AMS- I.D. (Version- 16, EB- 54). The project boundary diagram is now updated as per site situation. Please refer figure 02.	This is briefed in the relevant section of the PDD Version 2.3. The project boundary is in accordance with the AMS- I.D and has been validated. Please refer section 5a of the validation protocol.
5) Why has option A (Combined margin) been chosen for calculating emission factor is not justified. Refer B.6	The justification on the choice of combine margin is now detailed under section B.6 of the revised PDD.	This is briefed in the relevant section of the PDD Version 2.3. The calculation of emission factor is in accordance with the "Tool to calculate the emission factor for an electricity system". Please refer section 5c of the validation protocol.
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	The PP has selected post tax Project IRR as a suitable financial indicator for a comparison with the selected benchmark; the	This is briefed in section B.5 of the PDD Version 2.3. PP has chosen lending rate as the benchmark which is

GSC COMMENT No. 2	RESPONSE FROM PP	CONCLUSION FROM VALIDATION TEAM
PDD.	necessary discussion is available in section B.5 of the PDD under subsection Apply Benchmark Analysis, sub-step 2b.	suitable for comparison with project IRR. This is as per the guidance 12 of "Guidelines on the Assessment of Investment Analysis". Please refer section 6c of the validation protocol.
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.	Calculation of emission factor has considered grid connected power plants. Please refer the PDD.	This is briefed in the relevant section of the PDD Version 2.3. The calculation of emission factor is done for the connected grid system (NEWNE grid) in accordance with the "Tool to calculate the emission factor for an electricity system". Please refer section 5c of the validation protocol.
8) Basis of choosing PLR as benchmark is not adequately demonstrated in the PDD	As per para 12 of the Version- 05, EB- 62, Annex-5, BPLR is a suitable benchmark for Project IRR, accordingly PP selected BPLR as benchmark of the project. Detail explanation is already given in section B.5 of the PDD under subsection Apply Benchmark Analysis, sub-step 2b.	This is briefed in section B.5 of the PDD Version 2.3. PP has chosen lending rate as the benchmark which is suitable for comparison with project IRR. This is as per the guidance 12 of "Guidelines on the Assessment of Investment Analysis" Please refer section 6c of the validation protocol.
9) All the issues of investment analysis guidelines are not discussed in the PDD. Refer B.5.	PDD is modified as per CAR and CL's raised by DOE. Now all the issues are included.	This is briefed in section B.5 of the PDD Version 2.3. Validation team had raised CL01 in this context. The revised PDD mentions the input values used for conducting financial analysis. Validation teams cross check the input values considered and confirmed its appropriateness. Please refer section 6c of the validation protocol.
10) Justification of parameters including O&M, insurance, loan, derating, escalation, and tariff are not demonstrated with justification. Refer B.5.	Basis and values of all the financial input parameters like O&M, insurance, loan, derating, escalation, and tariff are mentioned in section B.5 of PDD under	This is briefed in section B.5 of the PDD Version 2.3. Validation team had raised CL01 in this context. The revised PDD mentions the

GSC COMMENT No. 2	RESPONSE FROM PP	CONCLUSION FROM VALIDATION TEAM
	subsection *"calculation and comparison of financial indicators"*.	input values used for conducting financial analysis. Validation team cross check the input values considered and confirmed its appropriateness. Please refer section 6c of the validation protocol.
11) Please provide a proof for proposed debt to equity taken at the investment decision. Refer B.5	Comment is not applicable as the project is 100% equity.	The project is funded solely by equity and does not involve any debt. This was confirmed by interview with the PP and reviewing the project funding. Please refer section 6c of the validation protocol.
12) Proof for PLF is not justified.	The PLF is considered from the 3rd party PLF report by M/s Madhav Consultant, which is inline with EB 52, Annex 11. Please refer foot note 18 in the revised PDD.	Validation team had raised CAR02 in this context. A third party engineering report was submitted by the PP which is in accordance with the "Guidelines for the reporting and validation of plant load factors", version 01. The PLF estimated by the third party is 23.04%, while the PLF estimate provided by the technology supplier at the time of investment decision making was 21.88%. PP has chosen to consider the higher PLF (23.04%) for evaluating financial analysis while the lower PLF (21.88%) is considered for estimating ex-ante emission reductions. This is deemed conservative and reasonable. Please refer section 4 of the validation protocol.
13) Date of offer is not provided	PP has received quotation from WTG supplier Suzlon Energy Limited on 27 December 2010. Offer letter is submitted herewith.	Validation team confirmed that the Supplier offer document 5 WTGs (S82 type) from Suzlon were available on 27/12/2010.
14) Project cost is not as per state norms. Refer B.5.	As per offer provided WTG Supplier, the project cost is Rs. 442.03 even the Cost as per PO raised by PP is also 442.03 Million. Project cost	PP had referred the Supplier offer document from Suzlon dated 27/12/2010 mentioned a total project cost of INR

GSC COMMENT No. 2	RESPONSE FROM PP	CONCLUSION FROM VALIDATION TEAM
	of a project is a subject matter between supplier and PP, accordingly PP considered the cost as per Offer letter for investment analysis, which is as per para 6 of the EB 62, annex 5.	442.03 million. Individual Purchase Orders (PO) dated 03/01/2011 placed by PP to Suzlon for supply of WTG & other components, civil & electrical works, erection & commissioning and for acquiring the land. The purchase orders placed by PP indicated a total project cost of INR 437.5 Million. The difference has been covered in the sensitivity analysis. Considering the actual project cost of INR 437.5 Million as per the PO, the project IRR is still below the benchmark for the project. In addition to the cross verification from above mentioned documents, the validation team has conducted a comparative study by considering the per MW cost of the similar registered CDM wind power projects located in the state of Rajasthan [UNFCCC Ref No: 4709, 3946, 4679 & 4433][4]. Based on the results of the comparative study LRQA confirms that the per MW cost of INR 58.93 million of the project is reasonable. Please refer section 6c of the validation protocol. Thus, validation team confirms that the total project cost considered by the PP is reasonable and appropriate. Please refer section 6c of the validation

[4] Project ref no: 4709 the cost per MW of the project is INR 57.5 million

Project ref no: 3946 the cost per MW of the project is INR 59.98 million

Project ref no: 4679 the cost per MW of the project is INR 59.13 million

Project ref no: 4433 the cost per MW of the project is INR 63.49 million

GSC COMMENT No. 2	RESPONSE FROM PP	CONCLUSION FROM VALIDATION TEAM
		protocol.
15) O&M charges and its escalation is not as per norms	O & M charges and its escalation are considered as per offer letter, which is as per paragraph 6 of guidance. Even the state policy has considered a escalation of 5% for tariff determination.	PP had referred the Supplier offer document from Suzlon dated 27/12/2010 mentioned an annual O&M cost of INR 1.7 million per WTG. Further it mentioned a 5% annual escalation from 2nd year. The validation team confirmed the purchase order dated 03/01/2011 for erection, installation and commissioning confirmed the actual O&M cost as INR 1.7 million with 5% annual escalation from 2nd year. Please refer section 6c of the validation protocol.
16) IT rate assumed is not as per standard practice.	IT rate is taken as per host country tax rates. DOE can verify the same. Supportive documents are submitted herewith.	LRQA confirmed the host country taxation laws applicable during the investment decision and confirmed that the tax rate is calculated as base rate of 30% with 2% surcharge and 1% cess. The PP had applied the corporate tax rate applicable for partnership firm appropriately. Please refer section 6c of the validation protocol.
17) The application of MAT which is based on tax holiday while calculating WACC is not appropriate.	PP has not calculated WACC.	PP has not used WACC as benchmark. This comment is not relevant.
18) The PP has not explained and justified the key assumptions and rationale.	The PDD is now updated with all assumptions & rationales. Please refer revised PDD.	This is briefed in section B.5 of the PDD Version 2.3. Validation team had raised CL01 in this context. The revised PDD mentions the input values used for conducting financial analysis. Validation team cross check the input values considered and confirmed its

GSC COMMENT No. 2	RESPONSE FROM PP	CONCLUSION FROM VALIDATION TEAM
		appropriateness. Please refer section 6c of the validation protocol.
19) The PP and consultant has not Illustrate in a transparent manner all data used to determine the baseline emissions.	Please refer PDD section B.4 & B.6.1, where details on the baseline emissions is already detailed.	This is briefed in the relevant section of the PDD Version 2.3. The calculation of emission factor is done for the connected grid system (NEWNE grid) in accordance with the "Tool to calculate the emission factor for an electricity system". Please refer section 5c of the validation protocol.
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.	Please refer PDD section B.5, where details on project additionality as per Attachment A to Appendix B is already mentioned.	This is briefed in section B.5 of the PDD Version 2.3. PP has chosen investment analysis option as per the attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities. Please refer section 6c of the validation protocol.
21) National policies and circumstances relevant to the baseline of the proposed project activity are not being summarized clarify.	Please refer PDD section B.5, where details on National policies and circumstances relevant to the baseline of the proposed project activity are already mentioned.	Section B.5 of the revised PDD mentions the national policies and circumstances relevant to the project activity that has been validated. Please refer section 6c of the validation protocol.
22) Explain and justify all relevant methodological choices for the proposed project activity	Please refer PDD section B.6.1, where details on methodological choices for the proposed project activity are mentioned.	This is briefed in the relevant section of the PDD Version 2.3. The calculation of emission factor is done for the connected grid system (NEWNE grid) in accordance with the "Tool to calculate the emission factor for an electricity system". The methodological choices applied in the project activity are mentioned under section B.6.1 of revised PDD. Please refer section 5c of the validation protocol.

GSC COMMENT No. 2	RESPONSE FROM PP	CONCLUSION FROM VALIDATION TEAM
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.	Comment is not specific & relevant. Moreover, PDD under section B.6.2 only mentions data/parameters which are not monitored.	Comment is unclear. However, the revised PDD contains the data which is fixed ex-ante in section B.6.2 and the data which shall be monitored under section B.7.1. The validation team has confirmed the conservativeness of the data which is fixed ex-ante throughout the first crediting period. Please refer section 5c of the validation protocol.
24) CER revenue assumed is not consistently applied	Comment is not relevant. PDD has not considered IRR with CDM.	Guidelines do not require PP to submit financials taking into account CER revenue. Furthermore, the IRR for the project activity does not cross the benchmark and hence is additional. In case the project is registered, the CER benefits will improve the IRR. Please refer section 6c of the validation protocol.
25) Project cost is not as per norms, DOE has to check and clarify.	Project cost is based on the offer/quotation from the WTG supplier, which was available at the time of the decision making. It can be crossed checked with the PO.	PP had referred the Supplier offer document from Suzlon dated 27/12/2010 mentioned a total project cost of INR 442.03 million. Individual Purchase Orders (PO) dated 03/01/2011 placed by PP to Suzlon for supply of WTG & other components, civil & electrical works, erection & commissioning and for acquiring the land. The purchase orders placed by PP indicated a total project cost of INR 437.5 Million. The difference has been covered in the sensitivity analysis. Considering the actual project of INR 437.5 Million as per the PO, the project IRR is still below the benchmark for the project.

GSC COMMENT No. 2	RESPONSE FROM PP	CONCLUSION FROM VALIDATION TEAM
		In addition to the cross verification from above mentioned documents, the validation team has conducted a comparative study by considering the per MW cost of the similar registered CDM wind power projects located in the state of Rajasthan [UNFCCC Ref No: 4709, 3946, 4679 & 4433][5]. Based on the results of the comparative study LRQA confirms that the per MW cost of INR 58.93 million of the project is reasonable. Thus, validation team confirms that the total project cost considered by the PP is reasonable and appropriate. Please refer section 6c of the validation protocol.
26) The project cost of the project should be based on offer and not on purchase order or tariff order.	Project cost is based on the offer/quotation from the WTG supplier, which was available at the time of the decision making, which is inline with CDM guidance on additionality.	PP had referred the Supplier offer document from Suzlon dated 27/12/2010 mentioned a total project cost of INR 442.03 million. Please refer section 6c of the validation protocol.
27) O&M charges considered are on higher side. Pls. clarify.	O&M charges are based on offer. The offer documents are submitted to the DoE. It can be crossed checked with the submitted PO.	PP had referred the Supplier offer document from Suzlon dated 27/12/2010 mentioned an annual O&M cost of INR 1.7 million per WTG. Further it mentioned a 5% annual escalation from 2nd year. Furthermore, validation team confirmed the purchase order dated 03/01/2011 for erection, installation and

[5] Project ref no: 4709 the cost per MW of the project is INR 57.5 million

Project ref no: 3946 the cost per MW of the project is INR 59.98 million

Project ref no: 4679 the cost per MW of the project is INR 59.13 million

Project ref no: 4433 the cost per MW of the project is INR 63.49 million

GSC COMMENT No. 2	RESPONSE FROM PP	CONCLUSION FROM VALIDATION TEAM
		commissioning confirmed the actual O&M cost as INR 1.7 million with 5% annual escalation from 2nd year. Please refer section 6c of the validation protocol.
28) Benchmark calculation is not as per WACC tool (EB53 Annex 8)	Comment is not specific & relevant. WACC is not used to calculate benchmark.	PP has not used WACC as benchmark. Please refer section 6c of the validation protocol. This comment is not relevant.
29) Whether pre-tax or post tax IRR is selected is not demonstrated in the PDD.	PP has calculated post tax Project IRR. PDD is modified accordingly.	This is briefed in section B.5 of the PDD version 2.3. PP has chosen post tax project IRR which is suitable for comparison against the chosen benchmark (lending rate). This is as per the guidance 12 of "Guidelines on the Assessment of Investment Analysis" Please refer section 6c of the validation protocol.
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.	PP has selected Project IRR as a financial indicator for the project and as per para 12 of guidelines on the assessment of investment analysis, PLR is a suitable benchmark for Project IRR. Hence PP has not calculated benchmark as per WACC.	This is briefed in section B.5 of the PDD version 2.3. PP has chosen lending rate as the benchmark which is suitable for comparison with project IRR. This is as per the guidance 12 of "Guidelines on the Assessment of Investment Analysis" Please refer section 6c of the validation protocol.
31) Prior consideration of CDM which is important for the determination of additionality is not documented in the section B.5 of the PDD.	Information on prior CDM consideration is now included in the revised PDD. Please refer section B.5.	This is briefed in section B.5 of the PDD version 2.3. The start date of the project activity is 03/01/2011. In accordance with the "Guidelines on the demonstration and assessment of prior consideration of the CDM" PP had informed the Host Party DNA and the UNFCCC secretariat on 10/02/2011, on their intention to seek CDM status. Please refer section 6a of the validation

GSC COMMENT No. 2	RESPONSE FROM PP	CONCLUSION FROM VALIDATION TEAM
		protocol.
32) Date of PPA is not mentioned in the prior consideration of CDM	The prior CDM consideration is based on the project start date (date of WTG PO with Suzlon). Please refer section B.5 for information on prior CDM.	The project activity is categorised as new project activity as the project start date is after 02/08/2008. PP has intimate the Host Party DNA and UNFCCC secretariat on 10/02/2011, on their intention to seek CDM status. Please refer section 6a of the validation protocol.
33) The selection of simple OM based on low cost/must run resources is not adequately justified. Refer B.6.1	As per "*Tool to calculate the emission factor for an electricity system" (Version-02, EB- 50, Annex- 14)*, 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. PP has opted option 1. Accordingly, in India as per available data (most recent five years) with CEA, the low-cost/must-run resources constitute less than 50% of total grid generation. Thus simple OM can be used. Please refer step 3, section B.6.1.	PP has selected simple OM method since the low-cost/must-run resources constitute less than 50% of total grid generation on average of the five most recent years, i.e from 2005-06 to 2009-10. This is detailed under section 5c of the validation protocol.
34) PP has not provided for each parameter the chosen value or, where relevant, the qualitative information.	The comment is not specific. Moreover, the information on parameters is already given under section B.5.	The comment is not clear. The input values for investment analysis has been provided in section B.5 of revised PDD and has been validated. Please refer section 6a of the validation protocol.
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	The comment is not specific. Moreover, the information is already given under section B.6.2.	Comment is unclear. However, the revised PDD contains the data which is fixed ex-ante in section B.6.2 and the data which

GSC COMMENT No. 2	RESPONSE FROM PP	CONCLUSION FROM VALIDATION TEAM
information.		shall be monitored under section B.7.1. The validation team has confirmed the conservativeness of the data which is fixed ex-ante throughout the first crediting period. Please refer section 5c of the validation protocol.
36) Explain and justify the choice for the source of data.	The comment is not specific & relevant. Moreover, the information is already given under section B.6.2.	The revised PDD contains the data which is fixed ex-ante in section B.6.2. The CEA database version 6 has been referred for determining the grid emission factor. The validation team has confirmed the conservativeness of the data which is fixed ex-ante throughout the first crediting period. Please refer section 5c of the validation protocol.
37) Ex-ante option of calculating OM is not adequately demonstrated. Step 3 of Refer B.6.1	Information on ex ante OM is already given under, step 3, section B.6.1 of the PDD.	This is briefed in the relevant section of the PDD version 2.3. The calculation of emission factor is done for the connected grid system (NEWNE grid) in accordance with the "Tool to calculate the emission factor for an electricity system". The methodological choices applied in the project activity are mentioned under section B.6.1 of revised PDD. Please refer section 5c of the validation protocol.
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	Please refer revised PDD under section B.6.1, step 3.	This is briefed in the relevant section of the PDD version 2.3. The calculation of emission factor is done for the connected grid system (NEWNE grid) in accordance with the "Tool to calculate the emission factor for an electricity system". The

GSC COMMENT No. 2	RESPONSE FROM PP	CONCLUSION FROM VALIDATION TEAM
		methodological choices applied in the project activity are mentioned under section B.6.1 of revised PDD. Please refer section 5c of the validation protocol.
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	The calculation of OM by CEA has used been done using option B out of two options. Same has been refereed by PP considering grid tool. Please refer step 4, section B.6.1 of PDD.	This is briefed in the relevant section of the PDD version 2.3. The calculation of emission factor is done for the connected grid system (NEWNE grid) in accordance with the "Tool to calculate the emission factor for an electricity system". The methodological choices applied in the project activity are mentioned under section B.6.1 of revised PDD. Please refer section 5c of the validation protocol.
40) The argument that CEA data for build margin is calculated as per Emission factor tool is not documented. B.6.1	The comment is not relevant. PDD has already mentioned this. Please refer below sentence in the PDD (step 6, section B.6.1): OM values have been referred from CEA Database which has referred the "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, EB-50, Annex- 14).*	This is briefed in the relevant section of the PDD version 2.3. The calculation of emission factor is done for the connected grid system (NEWNE grid) in accordance with the "Tool to calculate the emission factor for an electricity system". The methodological choices applied in the project activity are mentioned under section B.6.1 of revised PDD. Please refer section 5c of the validation protocol.
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.	Spreadsheets are not uploaded during web hosting. Baseline Emission work book is submitted to the DoE for validation.	Emission reduction spreadsheet is being provided along with the PDD. Validation team has validated and cross checked the emission reduction calculation. Please refer section 5c of the validation protocol.

GSC COMMENT No. 2	RESPONSE FROM PP	CONCLUSION FROM VALIDATION TEAM
42) The justification of negligible project emissions for wind project is not as per AMS. I. D ver 16.0 EB 54).	The project emissions are already calculated as per AMS ID (Version: 16, EB: 54).	AMS I.D version 16 does not require calculation of project emissions for wind projects. Please refer section 5c of the validation protocol.
43) The emission factor value (Southern grid) for calculating baseline emission is wrong. Refer B.6.3	The comment is not relevant. NEWNE Grid is applicable project grid & not the Southern Grid.	As the project activity is connected to the NEWNE grid system, the emission factor is calculated for NEWNE system. Please refer section 5c of the validation protocol.
44) Net electricity should be continuously monitored, hourly measured and at least monthly recorded. Refer B.7.1	Monitoring is inline with methodology para 22 of AMS ID (Version: 16, EB: 54). Please refer PDD section B.7.2	Net electricity supplied to the grid is continuously monitored/measured and recorded at least monthly. Validation team confirmed the monitoring plan in accordance with the applied methodology AMS-I.D. Please refer section 7 of the validation protocol.
45) Metering regulations as per CEA norms is not adequately followed in monitoring plan. Refer B.7.2.	Metering regulations in PDD are inline with CEA norms which are in congruence with State norms. Please refer section B.7.1 & B.7.2 of the PDD.	The metering and monitoring plan as described in the PDD is as per the applicable host country regulations, follows the PPA and provisions of the utility company which is a public sector organisation. Please refer section 7 of the validation protocol.
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.	The parameters available during validation viz OM, BM & CM are calculated & refereed from CEA database.	Requirements of “General Guidelines to SSC CDM methodologies” have been followed for monitoring plan. The proposed monitoring plan was confirmed to be following the applied methodology and complying with the applicable host country regulations. Please refer section 7 of the validation protocol.
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.	Please refer section B.7.1 & B.7.2 of the PDD.	Sections B.7 of the PDD provides the details description of the monitoring plan. Please refer section 7 of the validation protocol.

GSC COMMENT No. 2	RESPONSE FROM PP	CONCLUSION FROM VALIDATION TEAM
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.).	Please refer B.7.1 of the PDD.	Sections B.7 of the PDD provides the details description of the monitoring plan. Please refer section 7 of the validation protocol.
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.	Please refer B.7.1 of the PDD.	Sections B.7 of the PDD provides the details description of the monitoring plan in accordance with the applied methodology. Please refer section 7 of the validation protocol.
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?	Please refer B.7.1 & B.7.2 of the PDD.	Sections B.7 of the PDD provides the details description of the monitoring plan in accordance with the applied methodology. The meters shall be calibrated once in three years.
51) Please provide a detailed description of the monitoring plan. Describe the operational and management structure that the project operator will implement in order to monitor emission reductions.	For monitoring plan please refer B.7.2 of the PDD. The operation & management structure is now included in the revised PDD under section B.7.2.	Sections B.7 of the PDD provides the details description of the monitoring plan in accordance with the applied methodology. The O&M structure for monitoring is provided under section B.7.2. Please refer section 7 of the validation protocol.
52) Clearly indicate the responsibilities for and institutional arrangements for data collection and archiving.	The PP is responsible for data collection & archiving. Please refer B.7.2 of the revised PDD.	Sections B.7 of the PDD provides the details description of the monitoring plan in accordance with the applied methodology. The section B.7.1, B.7.2 provides the responsibilities and arrangements for data collection and archiving. Please refer section 7 of the validation protocol.
53) The monitoring plan should reflect good monitoring practice appropriate to the type of project activity. Provide any relevant	PP is exercising good monitoring practise in line with the State monitoring code/ PPA in congruence	Sections B.7 of the PDD provides the details description of the monitoring plan in

GSC COMMENT No. 2	RESPONSE FROM PP	CONCLUSION FROM VALIDATION TEAM
further background information.	with CEA guidelines. DoE has also confirmed the same during validation visit. Monitoring details are given under PDD section B.7.1 & B.7.2.	accordance with the applied methodology. Please refer section 7 of the validation protocol.
54) Please describe the process by which comments by local stakeholders have been invited and compiled. An invitation for comments by local stakeholders shall be made in an open and transparent manner, in a way that facilities comments to be received from local stakeholders and allows for a reasonable time for comments to be submitted.	Local stake holder meeting was conducted by PP/Suzlon at Suzlon's Regional office at Jaisalmer (Rajasthan) on 24/03/2011 at 11.30 a.m. The stake holders gave their comments during the meeting. Comments are complied & documented during this meeting. The stake holder meeting documents are submitted to the DoE. The stake holders were invited by Public Notice on 12/03/2011 (well before the meeting) along with personal invitation letter. The details can be refereed from section E.1 of the PDD.	Section E of the revised PDD provides details on the local stakeholder consultation in accordance with the guidelines for completing SSC-CDM-PDD. Please refer section 8 of the validation protocol.
Submitted by: lawrance		

7.5 Appendix E: Certificate of Appointment

Validation of "Grid Connected Wind Power Project by M/s. D. J. Malpani in Rajasthan "

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**
Imran Ustad	Team Leader, Sector Expert
B Rampradap	Team Member, Sector Expert
Prabodha C Acharya	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

	Validated situation	Conclusion
SECTION 1. Approval		
Host Country Approval		
1. Has the Host country DNA provided a written approval?	Yes ☒ No ☐ NA☐ [6] CAR01 was raised to confirm the availability of LoA. PP has submitted the LoA dated 20/09/2011, hence the CAR01 was closed.	OK ~~CAR01 (Closed)~~
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☐ The LoA dated 20/09/2011 with reference 4/16/2011-CCC is issued by the Ministry of Environment & Forests, Government of India, which is the designated national authority (DNA) of the host country as per http://cdm.unfccc.int/DNA/index.html?click=dna_forum. The LoA is issued and valid for the proposed project activity.	OK
3. Mention the means of validation employed to assess the authenticity of the Letter of Approval. Indicate the source of the LoA (e.g. PP or directly from the DNA)	The LoA was made available by the PP. The LoA was also compared with those of other approval cases issued by the DNA. The team confirmed the authenticity of the letter issued.	OK

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

	Validated situation	Conclusion
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 has ratified the Kyoto Protocol in August 2002. (b) The participation is voluntary. (c) The project contributes to sustainable development in the Host Country. (d) The LoA indicates the precise title of the proposed project activity as indicated in the PDD.	OK
5. Is the letter of approval unconditional with respect of (a) to (d) above	Yes ☒ No ☐ NA☐	OK
6. Does the LoA from the host party acknowledge the bundle activity (if applicable)	Yes ☐ No ☐ NA☒	NA
Annex I Party Approval		
7. Has the Annex I country DNA provided a written approval?	Yes ☐ No ☐ NA☒	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☒	NA
9. Mention the means of validation employed to assess the authenticity of the Letter of Approval Indicate the source of the LoA (e.g. PP or directly from the DNA)	NA	NA

	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☒		NA
11. Is the letter of approval unconditional with respect of (a) to (c) above	Yes ☐ No ☐ NA☒		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 any specific version number of the PDD or validation report.		OK
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	D. J. Malpani	OK
	Host Party PP name in PDD/ Annex 1	D. J. Malpani	
	Host Party PP name in MoC	D. J. Malpani	
	Annex 1 Party PP name in PDD/ A.3	NA	
	Annex 1 Party PP name in PDD/ Annex 1	NA	
	Annex 1 Party PP name in MoC	NA	

		Validated situation	Conclusion
2	Confirm that each of the PP has been approved by at least one Party involved	Yes ☒ No ☐ NA☐ The project activity is currently developed as a unilateral project. Annex I participant is not specified at this stage.	OK
3	Confirm that no entities other than those approved as PP is included in section A.3 of PDD.	Yes ☒ No ☐ NA☐ D. J. Malpani is the only PP as indicated in the PDD	OK
4	Ensure that the approval of participation has been issued from the relevant DNA and if in doubt verify this with the corresponding DNA.	The letter of approval (LoA) dated 20/09/2011 has been issued by host country DNA. The Designated National Authority (DNA) is the National Clean Development Mechanism Authority (NCDMA) established in the Ministry of Environment and Forests (MoEF), Government of India.	OK

	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, e-mail 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 dated 16/12/2011 was submitted by the PP. • D. J. Malpani is the sole focal point and the information is filled in in accordance with the MoC form F-CDM-MOC and the requirements of the procedures. • No modifications were made to the template and date is clearly specified • Title of project and names of project participant and focal point is consistent with other project documents shared/submitted by PP • The information is filled in accordance with the MoC form F-CDM-MOC and the requirements of the procedures.	OK

	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)	OK
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 ☐ Guideline for completing the simplified project design document (CDM-SSC-PDD) Version 05 (EB34, Annex 9 and template of CDM-SSC-PDD Version 03 (EB28, Annex 34), which are the current versions available in UNFCCC website are used.	OK

	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 involves installation of wind power generation of total capacity of 7.5 MW consisting of five WTGs (5 x 1.5 MW) connected to the NEWNE grid system in the host country, India, to displace the predominantly fossil fuel based power generation and thereby reducing the GHG emissions. The WTGs are supplied by Suzlon Energy Limited (hereafter called Suzlon) will be connected to the NEWNE grid system of India. Net electricity generated will displace the grid electricity which is predominantly fossil fuel based, thereby reducing the GHG emissions. During the process of validation, LRQA confirmed the capacity, unique identification of the project activity, estimated power generation, arrangement for evacuation of electricity generated, technical specifications, date of commissioning, arrangements for O&M and necessary clearances for setting the project activity. The list of documents reviewed during the course of the validation is presented under Appendix B. The technical details with respect of the WTG provided in the PDD were confirmed with technical brochures from Suzlon. In confirming the details, the parameters with respect of the rotor diameter, rotor speed, nominal power, hub height and the expected annual generation were given special emphasis. The model S-82 of Suzlon has been listed by 'Centre for Wind Energy Technology', Govt. of India[7] confirming availability of type certificate. The expected net PLF from the project activity is 21.88% as presented by the	OK ~~CAR02 (Closed)~~

[7] http://www.cwet.tn.nic.in/html/information_ml.html

	Validated situation	Conclusion
	supplier in the offer document. Further to this, PP also conducted a third party assessment[8] for determining PLF in accordance with the Para 3 (b), Annex 11 of the report of 48th meeting of the CDM EB "Guidelines for the reporting and validation of plant load factors" (Version 01). The third party firm estimated a net PLF of 23.04%. The PP has chosen a lower PLF (21.88%) in the estimation of baseline emissions so that there is no over estimation of ex-ante emission reduction estimate, whereas, a higher PLF (23.04%) has been chosen for demonstration of additionality. LRQA deems this logic as appropriate and conservative. The Plant Load Factor (PLF) was also compared with similar projects operating in the region and found to be within the acceptable range. PP had not provided evidence for PLF, hence CAR 02 was raised. A third party engineering report was submitted by the PP which is in accordance with the "Guidelines for the reporting and validation of plant load factors", version 01. The PLF estimated by the third party is 23.04%, while the PLF estimate provided by the technology supplier at the time of investment decision making was 21.88%. PP has chosen to consider the higher PLF (23.04%) for evaluating financial analysis while the lower PLF (21.88%) is considered for estimating emission reductions. This is deemed conservative and hence the finding was closed. 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 technical specification from suppliers, offer documents from technology suppliers and purchase orders issued by PP.	

[8] PP contracted third party engineering firm Madhav Consultants for conducting PLF assessment

<table>
<tr><th></th><th>Validated situation</th><th>Conclusion</th></tr>
<tr><td>2. Confirm that the physical site inspection reflects the description in the PDD of the proposed CDM project activity.</td><td>The validation team conducted site visit and confirmed consistency of the described project activity in the PDD and the actual implementation. It could be confirmed that the project activity was commissioned and under operation during the time of the site visit. The WTGs are being provided by Suzlon Energy Ltd.

The details on the location of the project activity WTGs were confirmed as Sangana and Chord Villages in Fatehgarh taluka, and Asayach village in Jaisalmer taluka of Jaisalmer District, Rajasthan, India as given in the section A.4.1.4 of the PDD. The geographic coordinates of the project activity as stated under section A.4.1.4 were confirmed by the validation team.

<table>
<tr><th>Sr. No.</th><th>WTG location no.</th><th>Latitude</th><th>Longitude</th><th>Date of commissioning</th></tr>
<tr><td>1</td><td>AK-278</td><td>N 26°47’48.7”</td><td>E 71°08’12.6”</td><td>30/03/2011</td></tr>
<tr><td>2</td><td>AK-283</td><td>N 26°48’54.9”</td><td>E 71°07’04.6”</td><td>21/03/2011</td></tr>
<tr><td>3</td><td>AK-262</td><td>N 26°45’32.0”</td><td>E 71°09’49.3”</td><td>30/03/2011</td></tr>
<tr><td>4</td><td>AK-321</td><td>N 26°47’36.7”</td><td>E 71°10’15.8”</td><td>30/03/2011</td></tr>
<tr><td>5</td><td>AK-331</td><td>N 26°49’45.3”</td><td>E 71°07’59.6”</td><td>21/03/2011</td></tr>
</table>

The validation team confirmed the appropriateness of the project description in the PDD by reviewing project documentation and conducting the site assessment.</td><td>OK</td></tr>
<tr><td>3. 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>NA</td><td>-</td></tr>
</table>

	Validated situation		Conclusion
4. If the proposed CDM project activity involves the 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.	Pre-project	Project activity	-
	NA The project activity is a Greenfield project	NA	
5. Potential public funding for the project from Parties in Annex I shall not be a diversion of official development assistance (ODA).	The project activity is funded solely by equity and there is no financing from debt or any public funding. The details of project funding were also discussed during the site visit and it was confirmed through the interviews conducted with the senior management that the project was funded through equity only and did not involve any diversion of ODA.		OK
6. If the project activity is a small scale one, confirm that it is not a debundled component of a large scale project, in accordance 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.	Site visit and interviews with the PP confirmed that there is no CDM registered project of the same category & technology of the project activity within 1Km of the project boundary[9]. The project activity satisfies the criteria of Appendix C of the simplified M & P for SSC-CDM project activities; hence the team confirmed that the project activity is not a debundled component.		OK

[9] PP has two projects having reference no. 1778 and 3742. However, project with ref no. 1778 is located in the state of Maharashtra, while the project with ref no. 3742 is located in states of Karnataka and Gujarat.

	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☐ Approved methodology AMS-I.D "Grid connected renewable electricity generation" Version 16. AMS-I.D is valid from 11 Jun 2010 to 16 Jun 2011 and requests for registration applying AMS-I.D version 16 can be submitted until 17 Feb 2012 23:59:59 GMT. The methodology refers to the following methodological tools: • Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion, Version 2 EB 41 • Tool to calculate the emission factor for an electricity system, Version 2.2.1 EB 63 Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion is not applied as the project activity does not involve fossil fuel combustion.	OK
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 generates electricity from the renewable energy sources and thus displaces electricity from the NEWNE grid system. The project involves installation of five WTGs, each with an individual capacity of 1.50 MW aggregating to 7.5 MW which is less than 15MW. The validation team confirmed the total capacity of the project through the investment decision, necessary approvals, supply agreements and Power Purchase Agreements (PPA). From the interview of the PP, the validation team has confirmed that the PP does not intend to increase the generation capacity of this project through the entire crediting period of the project. Thus, 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.	OK

	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.	Approved methodology AMS-I.D "Grid connected renewable electricity generation" Version 16 has been applied to the proposed project activity which is appropriate for the project type. The team also confirmed that the SSC Meth is applied in conjunction with the General guidelines to SSC CDM methodologies Version 17, EB61 Annex 21 for the proposed project activity.	OK
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 team confirmed that the methodology selected is applicable and the Version used for the proposed project activity is valid. Steps taken to assess the applicability of the methodology is detailed below:	OK

No.	Applicability conditions in the AMS.I.D Version 16	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.	The project involves the installation of new wind power plant/unit. LRQA has confirmed this through the site visit, review of purchase order placed by the project participant to the technology provider and commissioning reports of the WTGs.	OK
2	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).	The project activity involves installation of new power plant at the site (Greenfield project). LRQA has confirmed this through the site visit, review of purchase order placed by the project participant to the technology provider.	OK
3	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;	As it is wind power project activity, the criteria is not applicable.	The project activity is not a hydro power project.	OK

	• 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/m2; • 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/m2.			
4	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.	The project activity is not a biomass power project.	OK
5	If the new unit has both renewable and non-renewable components (e.g., a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel5, the capacity of the entire unit shall not exceed the limit of 15 MW.	Project activity has only renewable component (wind), the capacity being 7.5 MW which does not exceed the eligibility limit for a small-scale CDM project activity.	The project involves the installation of new wind power plant/unit. LRQA has confirmed this through the site visit, review of purchase order placed by the project participant to the technology provider and commissioning reports of the WTGs.	OK
6	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.	The project activity does not involve a co-generation system.	OK
7	In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.	Not applicable, as it is a Greenfield project activity.	The project activity involves installation of new power plant at the site (Greenfield project). LRQA has confirmed this through the site visit, review of purchase order placed by the project participant to the technology provider.	OK
8	In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement unit shall not exceed the limit of 15 MW.	Not applicable, as it is a Greenfield project activity.	The project activity involves installation of new power plant at the site (Greenfield project). LRQA has confirmed this through the site visit, review of purchase order placed by the project participant to the technology provider.	OK
Applicability condition of "Tool to calculate the emission factor for an electricity system"				
The geographic and system boundaries for the relevant electricity grid can be clearly identified and information on the characteristics of the grid is available.	**Applicable** The geographic and system boundaries of the project connected electricity grid (the NEWNE Grid of India) can be clearly identified. Official		Central Electricity Authority, Ministry of Power, Government of India (Host Country) has given the delineations of the project electricity system and the	OK

	information on the characteristics of the grid is also available. Details are provided in the PDD Section B.6.1.	connected electricity system in India that meet the requirements of the Tool.	
Applicability condition of "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion"			
This tool applies to calculate the project and/or leakage CO_2 emissions from the combustion of fossil fuels. It can be used in cases where CO_2 emissions from fossil fuel combustion are calculated based on the quantity of fuel combusted and its properties.	**Not applicable** The proposed project activity will import electricity from the NEWNE grid for its auxiliary consumption, whenever necessary. It will not use any fossil fuels at the project plant.	The project activity was confirmed not planning to involve fossil fuel combustion by reviewing the project documentation and on site visit.	OK

	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.	The approved methodology specifies clear criteria to check the applicability conditions and each condition were checked as detailed above.	OK
6. If a determination regarding the applicability of the selected methodology to the proposed CDM project activity can not be made, request clarification of the methodology in accordance with the guidance provided by the CDM Executive Board Describe the clarification request and response.	NA	-
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 accordance with the guidance provided by the CDM Executive Board. Describe the request for revision or deviation and approval by the CDM Executive Board.	NA	-

	Validated situation	Conclusion
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.	The validation of the project activity did not reveal any other greenhouse gas emissions occurring within the proposed project activity boundary as a result of the implementation of the proposed CDM project activity which is expected to contribute more than 1% of the overall expected average annual emission reduction, which are not addressed by AMS-I.D Version 16. This is in accordance with paragraph 77 of CDM VVM (Version 01.2)	OK

	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☐	OK
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 required by the methodology have been included within the project boundary.	OK

	Validated situation	Conclusion
SECTION 5b. Baseline identification		
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 PDD provides the description of identified baseline scenario which would have been undertaken in absence of the proposed project activity and inline with the applied methodology requirements.	OK
2. Confirm that any procedure contained in the methodology to identify the most reasonable baseline scenario, has been correctly applied.	Yes ☒ No ☐ NA☐ According to AMS-I.D Version 16, the baseline for the project activity is the kWh of electricity produced by the renewable generating unit. The baseline scenario is the electricity delivered to the grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources. Since this baseline scenario is prescribed by the approved methodology, this is acceptable in accordance with the requirements of clause 105 of CDM VVM version 01.2.	OK
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.)	As confirmed above.	OK

	Validated situation	Conclusion
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:	Since this baseline scenario is prescribed by the approved methodology, this is acceptable in accordance with the requirements of clause 105 of CDM VVM version 01.2.	OK

Alternative Scenario Ref.	Description in the PDD	Cross-checked with	Validation Opinion
NA			NA
NA			NA

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 baseline scenario is in accordance with the paragraph 10 of AMS-I.D version 16. Since this baseline scenario is prescribed by the approved methodology, this is acceptable in accordance with the requirements of clause 105 of CDM VVM version 01.2.	OK
6. Is the identified baseline scenario in line with regulatory or legal requirements and takes into account relevant national and/or sectoral policies?	The identified baseline scenario is in line with the regulatory / legal requirements as prescribed by the applied methodology.	OK

7. Is this identification supported by official and/or verifiable documents (e.g. studies, web pages, certificates, etc?	As the baseline scenario is as per the applied methodology this is not applicable.	NA

	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.	**Emission reductions** As provided in the methodology, emission reduction is calculated from the equation: $ER_y = BE_y - PE_y - LE_y$ BE_y: Baseline emissions in the year y (tCO_2e/y) PE_y: Project emissions in the year y (tCO_2e/y) LE_y: Leakage emissions in the year y (tCO_2e/y) ER_y: Emission Reductions in the year y (tCO_2e/y **Project emissions (PE_y)** As per the applicable methodology, the project emissions are applicable only for geothermal power plants or hydro power plant hence, the PP has not considered the project emissions and is considered zero, $PE_y = 0$. **Leakage (LE_y)** The methodology requires leakage consideration if the energy generating equipment is transferred from another activity. The project activity involves new wind power generation equipment, which was confirmed based on the document review of the purchase orders between the PP and the WTG supplier. The same was also confirmed from the commissioning certificates. Hence, $LE_y = 0$ As no project emission (PE_y) or leakage (LE_y) is considered for the project activity, the estimated baseline emission (BE_y) becomes the emission reduction (ER_y), i.e; $PE_y = 0$ $LE_y = 0$ Thus, $ER_y = BE_y$ **Baseline emissions** According to the methodology AMS.I.D Version 16, for new grid connected renewable power plant, the baseline emissions are the product of electricity	OK ~~CAR 03 (Closed)~~

	Validated situation	Conclusion
	produced by renewable energy generating unit multiplied by the emission factor of the grid. $BE_y = EG_{BL,y} \times EF_{CO2,grid,y}$ $EG_{BL,y}$ = Quantity of net electricity supplied to the grid by the project activity in year y (MWh). $EF_{CO2,grid,y}$ = CO_2 emission factor of the NEWNE grid in year y (tCO_2/MWh) = Combined margin CO_2 emission factor in year y (tCO_2/MWh). <u>Calculation of the emission factor</u> The baseline emission factor is calculated as a Combined Margin (CM) consisting of Operating Margin (OM) and Build Margin (BM) factors based on data from an official source publicly available. The CM emission factor (EF) for the displaced electricity was calculated based on the 'Tool to calculate the emission factor for an electricity system' Version 02.2.1 (hereinafter referred to as "the tool"), in accordance with the applied methodology. This is the currently active version of the tool available in EB 63. The PP uses the EF for the grid electricity as calculated in CO_2 Baseline Database for the Indian Power Sector published by the Central Electricity Authority (CEA), Ministry of Power, Government of India. The CEA publishes on an annual basis the General Review and the Performance Review of Thermal Power Stations which is used by the majority of CDM project promoters. The database for baseline estimation issued by the CEA has been developed consistently with the availability of data in India. The database is an official publication of the Government of India for the purpose of CDM baselines. The CEA Database Version 6.0 has been applied as it was current at the time of submission of the CDM-SSC PDD for validation. The step wise estimation of CM EF is provided as below: **Step 1** of the *tool* requires identification of the relevant electric power system. In line with the requirements specified in the tool, the PP has selected the regional grid based on the spatial extent of the power plants that are physically connected through transmission and distribution lines to the project activity. The Indian electricity system is divided into two grids, the Integrated Northern, Eastern, Western, and North-Eastern regional grids (NEWNE) and the Southern Grid. Each grid covers several states. Since the project activity is located in the Western region, the selection of the	

	Validated situation	Conclusion
	NEWNE Grid for the purpose of estimation of baseline emission factor is considered appropriate. Therefore, the validation team confirmed the applicability of Step 1 of the *tool*. **Step 2** of the *tool* gives the PP an option to include off-grid power plants in the project electricity system. The PP has chosen only grid power plants for analysis. **Step 3** of the *tool* requires selection of a method for estimation of operating margin. Of the four methods provided in the *tool* for calculating the operating margin ($EF_{grid,OM,y}$), the PP has selected simple OM method since the low-cost/must-run resources constitute less than 50% of total grid generation on average of the five most recent years, i.e from 2005-06 to 2009-10. Year | Low-cost/must-run resources of net generation 2005-06 | 17.95% 2006-07 | 18.46% 2007-08 | 19.04% 2008-09 | 17.41% 2009-10 | 15.94% Low operating cost/must run resources include hydro and nuclear. The tool provides two options – (i) ex-ante option and (ii) ex-post option in calculating the simple OM. The PP has chosen the ex-ante option for determining the OM. This choice of ex-ante option which is based on a 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, was found acceptable in view of the availability of the requisite data vintages. **Step 4** of the *tool* requires the calculation of the operating margin emission factor according to the Simple OM method chosen as per Step 3 above. In validating Step 3, LRQA confirmed the calculations with respect to the OM emission factor for the last three years for the NEWNE Grid and arrived at the following summary:	

	Validated situation	Conclusion

Year	Absolute emissions (including imports) (tCO_2)	Net generation (including imports) (GWh)	Specific emissions (tCO_2/MWh)
2007-08	410,084,551	410,124	0.99990
2008-09	430,502,442	427,700	1.00655
2009-10	453,067,520	463,384	0.97774

EF_{gridOM}= (410,084,551 + 430,502,442 + 453,067,520)/ (410,124 + 427,700 + 463,384) x1000

= 0.9942 tCO_2/MWh

Step 5 of the *tool* requires calculation of the build margin emission factor.
The CEA database provides a BM value for the NEWNE grid as 0.8123. As part of validation of Step 5 of the tool, LRQA confirmed the BM for the year 2009-10 as per the following summary:

Year	Absolute emissions (tCO_2)	Net Generation (GWh)	Specific emissions (tCO_2/MWh) BM
2009-10	88,593,337	109,063.91	0.8123

	Validated situation	Conclusion
	Step 6 of the *tool* requires calculation of the combined margin emission factor as per the following equation: $EF_{CO2,grid,y} = EF_{grid,OM,y} \times w_{OM} + EF_{grid,BM,y} \times w_{BM}$ According to the guidance on selecting alternative weights in the tool, the default weights applicable for wind projects are w_{OM} = 0.75 and w_{BM} = 0.25 for the first and subsequent crediting period have been applied. The baseline grid emission factor has been calculated as; $EF_{CO2,grid,y}$ = 0.9487 tCO_2e/MWh The baseline emissions thus can be estimated as: $BE_y = EG_{BL,y} \times EF_{CO2,grid,y}$ = 14,374 MWh x 0. 9487 tCO_2e/MWh = 13,636 tCO_2e Annual average baseline emission is estimated to be 13,636 tCO_2e. Ex-ante electricity generation has been evaluated based on 'Guidelines for the reporting and validation of plant load factors' Version 01, Annex 11, CDM EB report of its 48th meeting. **Emission reductions** The annual emission reductions from the project activity can be estimated as the difference between the baseline emissions and the project emissions as follows: $ER_y = BE_y - PE_y - LE_y$ ER_y = 13,636-0-0 = 13,636 tCO_2e The average annual emission reduction is 13,636 tCO_2e over 7 years renewable crediting period.	

<table>
<tr><th></th><th>Validated situation</th><th>Conclusion</th></tr>
<tr><td></td><td>PP had not provided the grid emission factor calculation sheet. Also the emission reduction estimate presented in the PDD was not consistent with that in the financial sheet. Hence CAR 03 was raised.

PP provided the revised PDD and emission reduction sheet. The grid emission factor was calculated in accordance with the “Tool to calculate the emission factor for an electricity system” version 02.2.1.

PP had access to the proposal submitted by the technology supplier which indicated an estimated PLF of 21.88%. Later, PP also conducted a third party engineering study to estimate the PLF at the specific project site. The third party PLF study report estimated a PLF of 23.04%. For conservativeness, PP considered the higher PLF (23.04%) for evaluating financial analysis while the lower PLF (21.88%) is considered for estimating emission reductions. This is deemed conservative and hence the finding was closed.</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 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.</td><td>
<table>
<tr><th>Data/Parameter title:</th><th>$EF_{CO2,grid,y}$</th></tr>
<tr><td>Title in line with methodology?</td><td>Yes</td></tr>
<tr><td>Fixed throughout the crediting period?</td><td>Yes</td></tr>
<tr><td>Data unit correctly expressed?</td><td>Yes
tCO_2/MWh</td></tr>
<tr><td>Appropriate description of parameter?</td><td>Yes
Combined Margin Emission Factor of the NEWNE Grid</td></tr>
<tr><td>Source clearly referenced?</td><td>Yes
CEA CO2 Baseline Database (Version- 6.0)</td></tr>
<tr><td>Value provided is considered reasonable?</td><td>Yes
0.9487</td></tr>
<tr><td>Has this value been verified?</td><td>Yes</td></tr>
<tr><td>Choice of data correctly justified?</td><td>Yes
Fixed ex-ante</td></tr>
<tr><td>Measurement method correctly described?</td><td>NA</td></tr>
</table>
</td><td>OK</td></tr>
</table>

	Validated situation	Conclusion

Data/Parameter title:	$EF_{grid,OM,y}$
Title in line with methodology?	Yes
Fixed throughout the crediting period?	Yes
Data unit correctly expressed?	Yes tCO_2/MWh
Appropriate description of parameter?	Yes Operating Margin Emission Factor of the NEWNE Grid
Source clearly referenced?	Yes CEA CO2 Baseline Database (Version- 6.0)
Value provided is considered reasonable?	Yes 0.9942
Has this value been verified?	Yes
Choice of data correctly justified?	Yes Fixed ex-ante
Measurement method correctly described?	NA

Data/Parameter title:	$EF_{grid,BM,y}$
Title in line with methodology?	Yes
Fixed throughout the crediting period?	Yes
Data unit correctly expressed?	Yes tCO_2/MWh
Appropriate description of parameter?	Yes Build Margin Emission Factor of the NEWNE Grid
Source clearly referenced?	Yes CEA CO2 Baseline Database (Version- 6.0)
Value provided is considered reasonable?	Yes 0.8123
Has this value been verified?	Yes
Choice of data correctly justified?	Yes

	Validated situation		Conclusion
		Fixed ex-ante	
	Measurement method correctly described?	NA	

Data/Parameter title:	$EG_{BL,y}$
Title in line with methodology?	Yes
Fixed throughout the crediting period?	No. Shall be monitored ex-post
Data unit correctly expressed?	Yes MWh/year
Appropriate description of parameter?	Yes Quantity of net electricity supplied to the grid in year y
Source clearly referenced?	Yes Monthly Break up of net export units report
Value provided is considered reasonable?	Yes 14,374
Has this value been verified?	Yes – based on the third party PLF assessment report However, this parameter shall be monitored. Refer section 7 of the validation protocol
Choice of data correctly justified?	Yes Monitored ex-post
Measurement method correctly described?	Yes Refer section 7 of the validation protocol

	Validated situation	Conclusion
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.	All assumptions and data used by PP have been listed in the PDD including their references and sources. The grid emission factor is calculated based on the CO_2 Baseline Database for the Indian Power Sector published by the Central Electricity Authority (CEA), Ministry of Power, Government of India (http://cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm)	OK
4. Confirm that all estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.	Validation team confirms that the estimate of baseline emissions can be replicated using the data and parameter values provided in the PDD.	OK

	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 ☐	OK
2. List the documents and tools provided by the CDM Executive Board used to demonstrate the additionality	Attachment A of Appendix B of the Simplified modalities and procedures for small-scale CDM project activities, Version 08, EB 63 Annex 24	OK

	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 accordance to the Glossary of CDM Terms?	Yes ☒ No ☐ The start date for the project activity is 03/01/2011, the earliest date on which the Purchase orders for the WTGs were placed by D. J. Malpani and thereby the PP has committed to expenditures related to implementation of the project. LRQA has validated the start date in accordance with Glossary of CDM terms version 05, through the review of purchase orders for WTG, commissioning certificates, and power purchase agreements.	OK
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.		

	Validated situation	Conclusion
2. For a project activity with a start date on or after the 2nd 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	As the start date was after 02/08/2008, in accordance with the "Guidelines on the demonstration and assessment of prior consideration of the CDM" the PP had informed the Host Party DNA and the UNFCCC secretariat on 10/02/2011, on their intention to seek CDM status. The validation team has reviewed the copy of the prior consideration form that has been sent to the UNFCCC, subsequent confirmation message from host country DNA dated 22/02/2011 and from list of notifications received by the UNFCCC from the UNFCCC website. The validation team had confirmed the name of the project activity in the list of notifications received by the UNFCCC available from the UNFCCC website. Thus, LRQA confirms that the CDM was seriously considered in the decision to implement the project.	OK
3. For a project activity with a start date before the 2nd 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 prior to 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.	Not applicable	NA

<table>
<tr><th></th><th>Validated situation</th><th>Conclusion</th></tr>
<tr><td colspan="3">SECTION 6b. Identification of alternatives</td></tr>
<tr><td>1. Does the PDD identify credible alternatives to the project activity, in order 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.</td><td>
<table>
<tr><td colspan="3">LIST OF ALTERNATIVES</td></tr>
<tr><td>No</td><td>Description in the PDD</td><td>Describe why it is credible and complete</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
</table>

Not applicable.
The project is categorised as small scale project activity and applies Attachment A of Appendix B of the Simplified modalities and procedures for small-scale CDM project activities, Version 08, EB 63 Annex 24 for demonstrating additionality.

This is acceptable since the project activity is a small-scale project activity.

The PP has demonstrated the financial unattractiveness of the project activity through investment barrier by applying the benchmark analysis. Since the baseline for the project activity is electricity supplied by the grid which is outside the direct control of the project developer, the choice of benchmark approach for demonstration of additionality is relevant.
</td><td>OK</td></tr>
</table>

	Validated situation	Conclusion
SECTION 6c. Investment analysis		
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;	PP has demonstrated additionality by applying the investment barrier in accordance with the Attachment A of Appendix B. As per the simplified modalities and procedures for small-scale CDM project activities, a simplified baseline and monitoring methodology listed in Appendix B may be used for a small-scale CDM project activity if project participants are able to demonstrate to a designated operational entity that the project activity would otherwise not be implemented due to the existence of one or more barrier(s) listed in Attachment A of Appendix. B. These barriers are: • Investment barrier • Technological barrier • Barrier due to prevailing practice • Other barriers The PP has chosen investment barrier to prove the additionality of the proposed project activity. A thorough assessment of all parameters and assumptions used in the financial analysis was conducted by the validation team. The parameters were cross-checked with relevant sources. The details on the validation of input parameters and assumptions are presented in the below table. It was noted that investment decision was taken on 31/12/2010 as recorded in the company's Board minutes. It was further confirmed from the interview of the PP that the Suzlon's offer document dated 27/12/2010, inputs from available in RERC Order were presented to the Board. The actual investment in the project was taken from Purchase orders placed to the technology suppliers Suzlon on 03/01/2011. Due to very small time gap in proposal and real action for the project activity, the validation team is of the opinion that input values would not materially change. Few issues relating to the investment analysis were raised as part of CL 01. PP provided revised PDD / financial calculation sheet in response to CL 01. Refer Findings log in the validation report for details.	OK ~~CL 01~~ ~~(Closed)~~

	Validated situation	Conclusion
2. Assess the correctness of computations carried out and documented by the project participants	The validation team has assessed the correctness of the computations that were carried out by the PP. IRR was computed for a period of 20 years, which reflects the period of expected operation of the underlying project activity (technical lifetime) and hence was found to be appropriate. LRQA confirms that the salvage value (fair value of any project activity assets at the end of the assessment period) is added back as cash inflows in accordance with guidance 4 of 'Guidelines on the Assessment of Investment Analysis'. Further, LRQA confirms that the tax computation considers benefit under section 80 IA[10] of the Income Tax Act under which such projects are entitled for tax holiday for 10 consecutive years out of the first 15 years. In accordance with guidance 5 of 'Guidelines on the assessment of investment analysis', LRQA confirms that the depreciation and interest payment, have been added back to net profits for the purpose of calculating the IRR. PP had presented the unprotected spreadsheet versions of all investment analysis, having readable formulas. LRQA could confirm that the investment analysis is presented in a transparent manner, to the extent that the reader can reproduce the results. It was confirmed by the validation team from the available evidence and relevant accounting practices that in the estimation of the post tax Project IRR, the PP had applied the accepted local accounting and taxation principles. Also, LRQA confirms that all the input values considered for the investment analysis were applicable at the time of investment decision taken by the project participant and it is in compliance with the guidance 6 of the Guidelines on the assessment of the investment analysis Version 5. Also, the assessment of input parameters has been confirmed in accordance to paragraph 110 & 111 of VVM Version 1.2	OK

[10] Section 80 IA – Reduction in respect of profits and gains from industrial undertaking or enterprises engaged in infrastructure development etc. under which a deduction of an amount equal to 100% of the profit and gain derived from such business is allowed for any ten consecutive years out of fifteen years beginning from the year in which the undertaking or enterprise generates power or commences transmission or distribution of power.

<table>
<tr><th></th><th>Validated situation</th><th>Conclusion</th></tr>
<tr><td></td><td>The project IRR calculated with the input parameters as provided below work out to 8.91% for the project activity without considering the benefits from the CDM revenue which is less than the benchmark of 13.25%.</td><td></td></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>Parameters (i) annual generation, (ii) project cost, (iii) O&M cost and (iv) tariff rate were selected for sensitivity analysis. Validation team confirms the sensitivity analysis as below:

<table>
<tr><th>Parameter</th><th>+10%</th><th>Base IRR</th><th>-10%</th><th>Cross over point</th></tr>
<tr><td>Annual generation</td><td>10.79%</td><td rowspan="4">8.91%</td><td>6.90%</td><td>23.89%</td></tr>
<tr><td>Project cost</td><td>7.48%</td><td>10.59%</td><td>-22.45%</td></tr>
<tr><td>O&M cost</td><td>8.50%</td><td>9.30%</td><td>-123.99%</td></tr>
<tr><td>Tariff rate</td><td>10.79%</td><td>6.90%</td><td>23.89%</td></tr>
</table>

<u>Annual generation / Plant Load Factor</u>:
The IRR does not cross the benchmark if the annual electricity generation / PLF is increased by +10%. The IRR crosses the benchmark with a variation in PLF of by 23.89%. LRQA reviewed the tariff order of the Rajasthan Electricity Regulatory Commission dated 29/09/2006, which was applicable at the time of investment decision, which indicates a PLF of 22% for Jaisalmer site.

In addition, validation team has cross-checked the achieved electricity generation of the similar registered CDM projects (UNFCCC Ref No, 0243, 0267, 0447, 0481 and 1166) located in the Rajasthan and noted that the actual PLF achieved by the projects varies between 16.15% to 17.18%.

Therefore, increase in PLF to 23.89% is highly unlikely.

<u>Project cost</u>
The IRR is within the benchmark of for a reasonable variation of -10% of the project cost as provided in the table above.
As the project activity is operational and the costs have already been incurred by the project participant, LRQA reviewed the purchase orders issued by the PP to confirm the actual project cost. The actual cost for project is INR 437.50 million which is within the sensitivity range considered. The project IRR reaches the benchmark at a variation by -22.45%, which is unlikely</td><td>OK</td></tr>
</table>

	Validated situation	Conclusion
	to happen since the project is already in operation. O&M cost: The IRR does not cross the bench mark even when the the O&M cost is made zero. The PP had already entered into an O&M agreement with the WTG supplier for INR 1.7 million per WTG from second year with annual escalation of 5%. There has not been any decreased in the O&M cost from that considered at the time of investment decision making. A decrease in O&M cost to zero is not feasible considering the high inflation rate in the host country. Since the PP has entered into an O&M agreement with the service provider there is no possibility for further reduction in the O&M cost. Tariff rate: As the RERC order dated 06/08/2010 has fixed the tariff for the period of 20 years there is no possibility of change in tariff. The electricity tariff for the project is fixed at of INR 3.87/kWh as confirmed from the actual power purchase agreement (PPA). Tariff rate in India has been under government control. Though government varies tariff rates in accordance with the market conditions or other incentives as per national priorities, hiking rate by 23.89% after the PPA is signed is very unlikely. LRQA confirmed that the result of the sensitivity analysis consistently supports the conclusion that the project activity is not financially attractive. Based on the validation of the investment analysis that included an assessment of all parameters and assumptions used in calculating the relevant financial indicator, cross-checks against third party or publicly available sources and correctness of computation carried out, the financial returns of the proposed CDM project activity would be insufficient to justify the required investment.	

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
Number of WTGs	NA	5	Offer document from supplier dated 27/12/2010	• Minutes of meeting of the Partners of D. J. Malpani dated 31/12/2010 confirmed PP had decided to install 5 WTGs of 1.5 MW capacity each. • Supplier offer document from Suzlon dated 27/12/2010 confirmed 5 WTGs (S82 type) • Purchase order issued by D.J.Malpani dated 03/01/2011 for 5 WTGs. • Commissioning certificates dated 15/04/2011 confirmed the commissioning dates for 5 WTGs.	OK
Capacity of each WTG	MW	1.5	Offer document from supplier dated 27/12/2010	• Minutes of meeting of the Partners of D. J. Malpani dated 31/12/2010 confirmed PP had decided to install 5 WTGs of 1.5 MW capacity each. • Supplier offer document from Suzlon dated 27/12/2010 confirmed 5 WTGs (S82 type) of 1.5 MW capacities each. • Purchase order issued by D.J.Malpani dated 03/01/2011 for 5 WTGs of 1.5 MW capacity each. • Commissioning certificates dated 15/04/2011 confirmed the commissioning dates for 5 WTGs of 1.5 MW capacity each.	OK
Plant Load Factor	%	23.04	PLF assessment report by third party	The expected net PLF from the project activity is 21.88% as presented by the supplier in the offer document. Further to this, PP also conducted a third party assessment[11] for determining PLF in accordance	OK

[11] PP contracted third party engineering firm Madhav Consultants for conducting PLF assessment

Parameter/input	Symbol/Unit	Value	Source	Means of validation	Conclusion
				with the Para 3 (b), Annex 11 of the report of 48th meeting of the CDM EB "Guidelines for the reporting and validation of plant load factors" (Version 01). The third party firm estimated a net PLF of 23.04%. Therefore the net annual generation from the project activity is calculated to be 15.14 million kWh. Tariff order of the Rajasthan Electricity Regulatory Commission dated 29/09/2006 mentions a PLF of 22% for Jaisalmer site. Further the validation team has cross-checked the achieved electricity generation of the similar registered CDM projects (UNFCCC Ref No, 0243, 0267, 0447, 0481 and 1166) located in the Rajasthan and noted that the actual PLF achieved by the projects varies between 16.15% to 17.18%[12] Thus, the validation team confirms that the Estimated Net electricity generation/ Net PLF considered by the PP is reasonable and conservative.	
Deration of electricity generation in 6th, 10th,	%	1.25	Rajasthan Electricity Regulatory Commission	Derating of 1.25% in PLF[13] in 6th, 10th, 14th and 18th year is sourced from RERC order dated 29/06/2006	OK

[12] Project ref no. 0243 achieved actual PLF of 17.18% over a period of 2 years

Project ref no. 0267 achieved actual PLF of 16.29% over a period of 2 years

Project ref no. 0447 achieved actual PLF of 16.80% over a period of 2 years

Project ref no. 0481 achieved actual PLF of 16.15% over a period of 3 years

Project ref no. 1166 achieved actual PLF of 16.85% over a period of 1 year

[13] PLF is also called as CUF (Capacity Utilization factor)

Parameter/input	Symbol/Unit	Value	Source	Means of validation	Conclusion
14th and 18th year			order September 2006	paragraph 67 which states that deration of 5% during 20 years life of the project (i.e. 1.25% reduction in PLF in 6th, 10th, 14th & 18th year) as reasonable.	
Total project cost	INR Million	442.03	Offer document from supplier dated 27/12/2010	Supplier offer document from Suzlon dated 27/12/2010 mentioned a total project cost of INR 442.03 million. Individual Purchase Orders (PO) dated 03/01/2011 placed by PP to Suzlon for supply of WTG & other components, civil & electrical works, erection & commissioning and for acquiring the land. The purchase orders placed by PP indicated a total project cost of INR 437.5 Million. The difference has been covered in the sensitivity analysis. Considering the actual project of INR 437.5 Million as per the PO, the project IRR is still below the benchmark for the project. In addition to the cross verification from above mentioned documents, the validation team has conducted a comparative study by considering the per MW cost of the similar registered CDM wind power projects located in Jaisalmer and nearby Jodhpur district in the state of Rajasthan [UNFCCC Ref No: 4709, 3946, 4679 & 4433][14]. Based on the results of the comparative study LRQA confirms that the per MW cost of INR 58.93	OK

[14] Project ref no: 4709 the cost per MW of the project is INR 57.5 million

Project ref no: 3946 the cost per MW of the project is INR 59.98 million

Project ref no: 4679 the cost per MW of the project is INR 59.13 million

Project ref no: 4433 the cost per MW of the project is INR 63.49 million

Parameter/input	Symbol/Unit	Value	Source	Means of validation	Conclusion
				million of the project is reasonable. Thus, validation team confirms that the total project cost considered by the PP is reasonable and appropriate.	
Annual Operation and Maintenance (O&M) cost per WTG	INR Million	1.70	Offer document from supplier dated 27/12/2010	Supplier offer document from Suzlon dated 27/12/2010 mentioned an annual O&M cost of INR 1.7 million per WTG. Further it mentioned a 5% annual escalation from 2nd year. Furthermore, validation team confirmed the purchase order dated 03/01/2011 for erection, installation and commissioning confirmed the actual O&M cost as INR 1.7 million with 5% annual escalation from 2nd year.	OK
Escalation in O&M cost from second year onwards	%	5.0	Offer document from supplier dated 27/12/2010	Supplier offer document from Suzlon dated 27/12/2010 mentioned the escalation in O&M cost by 5% from second year onwards. Furthermore, validation team confirmed the purchase order dated 03/01/2011 for erection, installation and commissioning confirmed the actual escalation in O&M cost by 5% from second year onwards.	OK
Applicable service tax on O&M costs, erection, commissioning & power evacuation	%	10.30	Service Tax Rule	The PP has considered the service tax[15] based on the host country regulation, hence the service tax considered for the project is deemed appropriate.	OK
Applicable service tax on civil and electrical works	%	4.12	Service Tax Rule	The service tax rule was confirmed and the service tax rate considered (4.12%) for civil and electrical works is	OK

[15] http://taxguru.in/income-tax/income-tax-rates-proposed-in-direct-tax-codes-for-partnership-firm-llp-foreign-companies-domestic-companies-individual-and-huf.html

Parameter/input	Symbol/Unit	Value	Source	Means of validation	Conclusion
				appropriate.	
Tariff rate	INR/kWh	3.87	Rajasthan Electricity Regulatory Commission Tariff order 06/08/2010	Validation team confirmed the tariff rate from RERC tariff order dated 06/08/2010. Also, the validation team cross checked the Power Purchase Agreement signed between PP and the Jodhpur Vidyut Vitran Nigam Limited dated 04/03/2011 which confirms a tariff rate of INR 3.87/kWh. Tariff rate is dependent on the local government policies; any change to the tariffs is only applicable to projects wherein the PPA has not been entered into. Since, the PPA for this project activity is already in place, any change in the tariffs through the tariff policy will not affect this project activity.	OK
Depreciation rate on plant & machinery	%	4.50	Rajasthan Electricity Regulatory Commission order September 2006	Validation team confirmed the depreciation rate from the RERC order dated September 2006. Furthermore, validation team confirmed that depreciation, being a non-cash item, has been added back to the Profit after Tax for calculating IRR, which is in accordance with guidance 5 of 'Guidelines on the Assessment of Investment Analysis'	OK
Residual value	INR Million	45.93	Rajasthan Electricity Regulatory Commission order September 2006	Validation team cross checked Companies Act 1956[16] which confirms that assets can be depreciated up to 95%, hence residual value is considered as 5%. The value is found to be appropriate. LRQA confirmed the residual value of 5% to be	OK

[16] Sub section 2(b) of section 205 of Companies Act 1956

Parameter/input	Symbol/Unit	Value	Source	Means of validation	Conclusion
				appropriate for wind projects, which is in accordance to guidance 4 of 'Guidelines on the Assessment of Investment Analysis'.	
Equity portion	%	100	Investment decision by PP	Validation team confirmed the project activity has been funded solely by equity and there is not debt involved. This was confirmed from interview with the PP, review of documents presented during the investment decision and purchase orders placed.	OK
Corporate tax rate	%	30.90	The tax rates have been sourced from Income tax act 1961 and subsequent finance bills of the host country.	LRQA confirmed the host country taxation laws applicable during the investment decision and confirmed that the tax rate is calculated as base rate of 30% with 2% surcharge and 1% cess. The PP had applied the corporate tax rate applicable for partnership firm appropriately.	OK

	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[17]. Bank of Baroda is a regular lender to the PP. 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[18]. Further to this, validation team also confirmed the BPLR published by other banks based on publicly available information[19]. The BPLR ranged from 13.25% to 13.75%. Thus the benchmark lending rate of 13.25% as selected by the PP is considered reasonable and acceptable.	OK

[17] http://www.rbi.org.in/scripts/AboutUsDisplay.aspx?pg=Nationalised.htm

[18] http://www.moneycontrol.com/stocks/stock_market/corp_notices.php?autono=391989

[19] BPLR of 13.25% published by Bank of Maharashtra as on 15/12/2010 (http://www.ndtv.com/article/cities/bank-of-maharashtra-hikes-interest-rates-72976)

BPLR of 13.75% published by Dena Bank as on 15/12/2010 (http://www.psuindia.in/psu-news/3566-dena-bank-raises-base-rate-by-05-bplr-by-025)

BPLR of 13.25% published by Union Bank of India as on 20/12/2010 (http://post.jagran.com/union-bank-raises-bplr-by-050-to1325-1292668098)

BPLR of 13.75% published by IDBI Bank as on 01/01/2012 (http://post.jagran.com/idbi-bank-ups-its-base-rate-by050-1292228514)

	Validated situation	Conclusion
5. 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.	Not Applicable	NA

Comparison to similar registered project in the region[20]:

CDM Ref	Capacity (MW)	Investment cost (INR Million)	Investment cost per MW capacity (INR Million/MW)	Plant Load factor (%)	Tariff rate (INR/kWh)	O&M cost (INR Million/MW)	Escalation in O&M cost /year (%)	O&M relative to investment (%)	O&M per output (INR million/MW)
3946	7.5	449.90	59.99	22.38	3.48	1.03	5.0	1.72	1.03
4709	3.2	184.00	57.50	19.59	4.28	0.63	5.0	1.09	0.63
4433	3.0	190.48	63.49	21.86	3.48	0.75	5.0	1.18	0.75
4679	24.0	1419.00	59.13	19.46	4.28	1.32	5.0	2.23	1.32

[20] Registered CDM wind projects located in Jaisalmer and nearby Jodhpur district that supply electricity to NEWNE regional grid are chosen for comparison

	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. PP has not applied barrier analysis.	NA

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

	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 (e.g. 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. The project is categorised as small scale project activity and hence, common practice analysis is not required.	NA
2. Determine to what extent similar and operational projects (e.g. using similar technology or practice), other than CDM project activities, have been undertaken in the defined region	NA	NA
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	NA	NA

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
$EG_{BL,y}$	**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	**Description:** Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y **Unit:** MWh/y **Source of data to be used:** Monthly Break up of net export units report **Value of data:** 14,374 MWh/year **Description of measurement methods and procedures to be applied:** Metering at 33 kV/220 kV level: The electricity generated by the project activity WTG/s is evacuated to the pooling station at 33 kV/220 kV level. The project activity WTG/s along with other WTGs, are connected to the feeder-wise metering point/s, where each metering point consists of both main & check meters. These tri vector energy meters are having accuracy class of 0.2s. The electricity (export and import) for the connected WTG/s is apportioned on monthly basis by the State Utility at 33 kV/220 kV level on the basis of	Validation team confirms the description of the parameter is in accordance with the methodology i.e. Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y The unit is correctly mentioned as MWh/year and the value of data is 14,374 MWh/year (at a PLF of 21.88%). The monthly break up report provided by the state utility shall be used as source for $EG_{BL,y}$. This was confirmed during site visit interviews with the PP and the O&M staff Measurement methods: The net electricity supplied from the project WTGs is evacuated at 33kV through common feeder lines to a substation (33 kV/220 kV) wherein the electricity is stepped up to 220 kV. There shall be feeder-wise monitoring arrangement to measure the electricity export and electricity import using tri vector energy meters of 0.2s accuracy class. The electricity (export and import) for the connected WTGs shall be apportioned on monthly basis by the State Utility at 33 kV/220 kV level on the basis of generation ratio at the applicable metering point (ratio of controller reading of connected WTG to the controller reading for all	OK ~~CAR 04 (Closed)~~

Parameter	Monitoring Meth description	PDD description	Validated situation	Conclusion
	Guidelines to SSC CDM Methodologies. If applicable, measurement results shall be cross checked with records for 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	generation ratio at the applicable metering point (ratio of controller reading of connected WTG to the controller reading for all WTGs connected to the applicable metering point) and the electricity (export, import etc) recorded by the energy meters at 33 kV/220 kV GSS on monthly basis. It will give export kWh & import kWh for connected WTG. The net export obtained at 33 kV/220 kV level for any given month for the connected WTG is then obtained by: Net Export = Export kWh – Import kWh All these metering points are further connected to the common delivery point at the 220 kV level. <u>Metering at 220 kV level:</u> The common metering point at 220 kV GSS *concurrently* records total electricity (total export and total import) receiving from all connected metering points. The common metering point consists of both main & check meters. These energy meters are having accuracy class of 0.2s. The monthly JMR is taken by the representative of PP & State Utility. Billing of the energy will be done based on the energy break up available at the metering at 220 kV level. <u>Transmission loss:</u> The total transmission loss occurred during export of the electricity between the 33/220 kV level pooling station & 220 kV level common delivery point is calculated as the difference between total aggregated reading of exports for all metering points	WTGs connected to the applicable metering point) and the electricity (export, import etc) recorded by the energy meters at the feeder at 33 kV/220 kV substation on monthly basis. Further, the stepped up electricity (at 220 kV) shall then be sent to a common delivery point at the 220 kV level. The common metering point at 220 kV GSS concurrently records total electricity (total export and total import) receiving from all connected metering points. The common metering point shall consist of both main & check meters of accuracy class of 0.2s. The meters shall record the total electricity exported by the wind farm and the total electricity imported by the wind farm. PP & State Utility shall record the export/import in monthly Joint Metering Reports (JMR) The billing of the net energy supplied will be done based on the energy break up available at the metering at 220 kV level after discounting for the transmission losses. The total transmission loss occurred during export of the electricity between the 33/220 kV level pooling station & 220 kV level common delivery point is calculated as the difference between total aggregated reading of exports for all metering points at 33/220 kV level and the total reading of exports for same metering points recorded at the 220 kV level. Similarly, transmission loss occurred during import of the electricity is also calculated. The net electricity supplied to the grid by the given WTG for the given month (net export kWh) is obtained by subtracting electricity import from electricity export.	

Parameter	Monitoring Meth description	PDD description	Validated situation	Conclusion
	plant measured at the grid interface/connection used for billing purposes.	at 33/220 kV level and the total reading of exports for same metering points recorded at the 220 kV level. Similarly, transmission loss occurred during import of the electricity is also calculated. The PP/WTG wise transmission loss during export & import is calculated by multiplying the values of arrived transmission loss for export & import for wind farm with the *Generation Ratio at common delivery point* (ratio of electricity generated by installed WTG to the total generation by all the connected WTGs/ or connected metering points under common delivery point). The values of transmission loss during export & import for the given WTG are subtracting from $EG_{Export, metering point}$ & $EG_{Import, metering point}$ respectively to get the values of export and import respectively for the given month. <u>Net electricity delivered to the Grid:</u> The net electricity delivered to the Grid by the given WTG for the given month (net export kWh) is then obtained by subtracting import from export. The values of the net electricity delivered to the Grid are aggregated annually to get $EG_{BL,y}$. The value of net electricity delivered to the Grid ($EG_{BL,y}$) by the project activity per annum is converted to MWh before the calculation of emission reductions (*ex ante* determined in tCO_2/MWh unit).	The monitoring arrangement for the $EG_{BL,y}$ was confirmed during site visit interviews with the PP and the O&M staff.	

Parameter	Monitoring Meth description	PDD description	Validated situation	Conclusion
		QA/QC procedures to be applied: The meters are 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 by State Utility. The calibration of the meters will be carried out at least once in three years (as per paragraph 17 (c) of *General Guidelines to SSC CDM methodologies, Version 17*). 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 and emission reductions. **Any comment:** Data will be archived in electronic form for two years after the end of crediting period or of the last issuance of CERs for this project activity, whichever occurs later.		

	Validated situation	Conclusion
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 organizational structure, roles and responsibility, the monitoring instruments, data monitoring procedures, emergency preparedness and the management system. During the site visit, validation team has confirmed that the monitoring is planned in a reasonable manner and considered feasible to be implemented by the PP. Site visit interviews confirmed a two step monitoring process. However, section B.7 does not describe the monitoring process in a transparent manner. Hence CAR 04 was raised. Revised PDD was provided wherein the monitoring procedure includes the details on the apportioning mechanism adopted by the state utility to calculate the net electricity supplied by the project activity based on which the invoicing and billing is done. The monitoring mechanism in the revised PDD is appropriate as confirmed from the site visit. Hence	OK

	Validated situation	Conclusion
	CAR was 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.	OK

	Validated situation	Conclusion
SECTION 8. Local stakeholder consultation		
6. Determine whether comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity, have been invited	No negative comment was received through the local stakeholders' consultation processes. In the stakeholders' meeting, discussion was made on the project's potential impact to the local environment, potential adverse effects and the expected benefits to the local community. Justification by the PP was presented during the meeting and it is described in the PDD. CAR 05 was raised as Section E.1 of the PDD did not provide the process by which the stakeholders were invited. Revised PDD mentions the invitation process for inviting the local stakeholders. Validation team has confirmed the invitation process during the site visit.	OK ~~CAR 05 (Closed)~~
7. Confirm that the summary of the comments received as provided in the PDD is complete	The validation team confirmed that the summary of the comments received as provided in the PDD is complete.	OK
8. Confirm that the project participants have taken due account of any comments received and have described this process in the PDD	No comment was received that requires further action to the PP.	OK

	Validated situation	Conclusion
SECTION 9. Environmental Impacts		
2. Is an EIA required by the environmental legislation of the host country? Describe the legislation applicable.	The Ministry of Environment & Forests (MoEF), Government of India, under Environment Impact Assessment (EIA) notification vide S.O 1533(E) dated 14/09/2006 specified a list of projects/activities in Schedule I of the said notification, which for setting up new projects or modernization or expansion, would require prior environmental clearance and which may call for an EIA as a part of obtaining environmental clearance. As per the said notification, the proposed project activity does not require any EIA to be conducted.	OK
3. Confirm whether the project participants have undertaken an analysis of environmental impacts and, if required by the host Party, an environmental impact assessment	As above	OK
4. Confirm that environmental impacts considered significant by the PPs or the Host country are described in the PDD, including mitigation measures.	The rules of host country do not require EIA for the type of the project activity.	OK

Findings[21]

1. Grade / Ref:	CAR 01	2. Date:	01/08/2011	3. Status:	Closed
4. Requirement:		Para 44 of VVM Version 01.2			
5. Nature of the Issue Raised: Letter of Approval					
LoA by the DNA of the host country (India) has not been made available for validation.					
6. Nature of responses provided by the project participant:					
The LoA from DNA dated 20/09/2011 is now submitted to the DoE.					
7. Assessment of such responses:					
LoA dated 20/09/2011 ref no. 4/16/2011-CCC for the project activity was provided. NCDMA confirms that the project contributes to Sustainable Development.					
8. References to resulting changes in the PDD or supporting annexes:					
-					

1. Grade / Ref:	CAR 02	2. Date:	01/08/2011	3. Status:	Closed
4. Requirement:		Para 110 of CDM-VVM Version 1.2 Guideline for the reporting and validation of plant load factors			
5. Nature of the Issue Raised: Plant Load Factor					
PP to provide evidence for plant load factor in accordance with the "Guidelines for the reporting and validation of plant load factors", version 01 (EB48, Annex11).					
6. Nature of responses provided by the project participant:					
The evidence of the PLF (3rd party PLF report) in line with EB: 48, Annex: 11 is now submitted to the DoE. The PLF value arrived by the 3rd party is 23.04% & the PLF offered by Suzlon is. 21.88%. PP has now considered PLF value of 23.04% for IRR working & PLF of 21.88% for baseline calculations as a conservative					

[21] Explanation of the Findings Log structure:
1. Grading and Sequential Number of the finding 2. Date of Original Finding 3. New, Open, Closed 4. Requirement (VVM, PDD-CDM, etc) 5. Reference to Protocol
6. Details of PP's response 7. Evaluation from the Validation team 8. List of changes made as a result of the finding

approach. The PDD, ER & IRR worksheets are now revised accordingly.
7. Assessment of such responses:
A third party PLF assessment report was submitted by the PP which is in accordance with the "Guidelines for the reporting and validation of plant load factors", version 01. The PLF estimated by the third party is 23.04%, while the PLF estimate provided by the technology supplier at the time of investment decision making was 21.88%. PP has chosen to consider the higher PLF (23.04%) for evaluating financial analysis while the lower PLF (21.88%) is considered for estimating emission reductions. This is deemed conservative and hence the finding was closed.
8. References to resulting changes in the PDD or supporting annexes:
PDD section A.4.3, B.5 and B.6.3

1. Grade / Ref:	CAR 03	**2. Date:**	01/08/2011	**3. Status:**	Closed
4. Requirement:		Para 82 of CDM-VVM version 01.2			

5. Nature of the Issue Raised: Emission factor for grid system
PP to provide the grid emission calculation sheet to confirm the calculations for simple operating margin emission factor. Section A.4.3 and section B.6.3 determines the annual emission reductions from the project activity as 13,770 tCO2e. However, the financial sheet submitted calculates the ER as 13,771 tCO2e/year.
6. Nature of responses provided by the project participant:
The grid emission calculation sheet is now submitted to the DoE. PP has now considered PLF value of 23.04%, for IRR working based on the 3rd party PLF report & PLF of 21.88%, for baseline calculations based on the PLF offered by Suzlon as a conservative approach. The PDD, ER & IRR worksheets are now revised accordingly
7. Assessment of such responses:
PP provided the revised PDD and emission reduction sheet. The grid emission factor was calculated in accordance with the "Tool to calculate the emission factor for an electricity system" version 02.2.1. The grid emission factor was revised from 0.9580 tCO_{2e}/MWh (PDD version 1) to 0.9487 tCO_{2e}/MWh (PDD version 2.3) PP had access to the proposal submitted by the technology supplier which indicated an estimated PLF of 21.88%. Later, PP also conducted a PLF study by engaging a third party engineering firm i.e Madhav Consultant to estimate the PLF at the specific project site. The third party PLF study report estimated a PLF of 23.04%. For conservativeness, PP considered the higher PLF (23.04%) for evaluating financial analysis while the lower PLF (21.88%) is considered for estimating emission reductions. This resulted in decrease in emission reduction estimate from 13,770 tCO_{2e}/year (PDD version 1) to 13,636 tCO_{2e}/year (PDD version 2.3). This is deemed conservative and hence the finding was closed.

8. References to resulting changes in the PDD or supporting annexes:					
PDD section A.4.3, B.6.3, Annex 3					

1. Grade / Ref:	CAR 04	**2. Date:**	01/08/2011	**3. Status:**	Closed
4. Requirement:		Para 122 of CDM-VVM version 01.2 Guidelines for completing the CDM SSC PDD Version 05			
5. Nature of the Issue Raised: Monitoring Plan					
Site visit interviews confirmed a two step monitoring process - (1) at the common feeder lines and (2) at the bulk meter which measures the total electricity exported/imported by all the feeder lines in a substation. However, section B.7 does not describe the monitoring process in a transparent manner.					
6. Nature of responses provided by the project participant:					
The PDD is now revised inline with the actual monitoring at site. Please refer section B.7.1 & B.7.2 of the revised PDD. To demonstrate apportioning of the electricity for the project activity. 220 kV JMR excel working done by the state utility for the month of May 2011 is now submitted to the DoE.					
7. Assessment of such responses:					
Revised PDD was provided wherein the monitoring procedure includes the details on the apportioning mechanism adopted by the state utility to calculate the net electricity supplied by the project activity based on which the invoicing and billing is done. The monitoring mechanism in the revised PDD is appropriate as confirmed from the site visit.					
8. References to resulting changes in the PDD or supporting annexes:					
PDD section B.7.1 and B.7.2					

1. Grade / Ref:	CAR 05	**2. Date:**	01/08/2011	**3. Status:**	Closed
4. Requirement:		Para 128 of CDM-VVM version 01.2 Guidelines for completing the CDM SSC PDD Version 05			
5. Nature of the Issue Raised: Local Stakeholder Consultation					
Section E.1 of the PDD does not provide the process by which the stakeholders comments were invited.					
6. Nature of responses provided by the project participant:					
The Section E.1 of the PDD is now revised appropriately to include the process by which the stakeholders were invited.					

7. Assessment of such responses:
Revised PDD mentions the invitation process for inviting the local stakeholders. Validation team has confirmed the invitation process during the site visit interviews with the local stakeholders, review of invitation letters and public notice.
8. References to resulting changes in the PDD or supporting annexes:
PDD section E

1. Grade / Ref:	CL 01	2. Date:	01/08/2011	3. Status:	Closed
4. Requirement:		Para 110 of CDM-VVM version 01.2 Guidelines on the assessment of investment analysis			
5. Nature of the Issue Raised:					
PP to clarify the following related to investment analysis: 1. PDD applies version 03.1 of the "Guidelines on the assessment of investment analysis". However, version 05 of "Guidelines on the assessment of investment analysis" is available from EB62. 2. PP to clarify the choice of PLR for a particular bank 3. The input values used for investment analysis are not transparently stated under Section B.5 of the PDD. 4. PP to clarify why tariff rate is not subject to sensitivity analysis. 5. It is noted that the investment decision making for the project activity was taken on 31/12/2010 and the tariff order dated 31/03/2010 (http://www.rerctest.rajasthan.gov.in/TariffOrders/Order_WIND.pdf) and order dated 06/08/2010 (http://www.rerctest.rajasthan.gov.in/Orders/Order101.pdf) was available. PP to clarify the reference of Rajasthan Electricity Regulatory Commission order July 2009 for justifying the electricity tariff rate.					
6. Nature of responses provided by the project participant:					
1. Section B.5 is updated as per version 05 of the "Guidelines on the assessment of investment analysis", which is available from EB 62. 2. As a Malpani group, PP also considering a wind project of 15 MW under there group firm, Giriraj Enterprises. PP has approached to Bank of Baroda for funding of that project; accordingly PP used the BPLR of Bank of Baroda for this project also. PP also refereed BPLR of some of the other public / private sector banks. 3. The input values used for investment analysis are incorporated under Section B.5 of the PDD					

4. Tariff rate parameter is included in sensitivity analysis in investment analysis & PDD updated accordingly.

5. Tariff order dated 06-08-2010 is now considered for investment analysis and PDD has been updated.

7. Assessment of such responses:

1. PP has referred version 05 of "Guidelines on the assessment of investment analysis" in the revised PDD.

2. PP is availing debts for financing other group wind projects from Bank of Baroda. As per paragraph 12 of Guidelines on the assessment of investment analysis, *Local commercial lending rates or weighted average costs of capital (WACC) are appropriate benchmarks for a project IRR.* Therefore the reference of lending rate from Bank of Baroda is justified. Further, Validation team compared the lending rate used by PP with lending rates offered by other banks and confirmed the benchmark of 13.25% is conservative as compared to the lending rates offered by other banks. Validation team confirmed the benchmark referred by the PP is appropriate and conservative.

3. The revised PDD mentions the input values used for conducting financial analysis, those were validated by the team as detailed in the protocol section.6c above

4. PP has subjected tariff rate for sensitivity analysis in the revised PDD.

5. The applicable tariff order dated 06/08/2010 is referred for justifying the electricity tariff rate and was the recent tariff order available at the time of investment decision making on 31/12/2010.

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

PDD section B.5 and IRR sheet