Validation Report

Report for:

Kishangarh Hi-tech Textile Park Ltd.

Validation of CDM project for

Suzlon 8.40 MW Wind Power Project

LRQA Reference	:	CDM-MUM-0061762 Version 03
Date	:	15/10/2012
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LRQA Business Assurance

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1 Executive Summary

Lloyd's Register Quality Assurance Limited has been contracted by Kishangarh Hi-tech Textile Park Ltd., the project participant (PP), to undertake validation of the proposed project activity "Suzlon 8.40 MW Wind Power Project". The validation has been performed through a process of document review based on the project design document, Version 01 dated 21/07/2011 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 is promoted by Kishangarh Hi-tech Textile Park Ltd. The project activity involves the supply, erection, commissioning and operation of 4 Wind Turbine Generators (WTGs) of 2100 kW each at District Jaisalmer in Rajasthan. All WTGs are supplied and manufactured by Suzlon Energy Limited. The purpose of the project activity is to generate electrical energy through sustainable means using wind power. The net electricity supplied shall replace an equivalent amount of electricity from the connected NEWNE grid system thereby resulting in emission reductions.

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 4 CARs and 2 CLs. The PP has taken actions and submitted to LRQA the revised PDD, emission reduction calculation sheet and supporting evidence. The validation team is of the opinion that the proposed project activity as described in the project design document Version 04.1 dated 12/10/2012 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 "Suzlon 8.40 MW Wind Power Project" to the CDM Executive Board as a CDM project activity.

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Abbreviations

BE	Baseline emissions
BSE	Bombay Stock Exchange
CARs	Corrective action requests
CAGR	Compound Annual Growth Rate
CAPM	Capital Asset Pricing Model
CDM	Clean development mechanism
CDM-EB	Executive board of clean development mechanism
CDM M&P	Modalities and procedures for a clean development mechanism
CDM VVM	CDM Validation and Verification Manual
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CERs	Certified emission reductions
CLs	Clarification requests
COP/MOP	Conference of the Parties serving as meeting of the Parties to the Kyoto Protocol
DNA	Designated national authority
DOE	Designated operational entity
EF	Emission factor
EIA	Environmental impacts assessment
ERPA	Emissions reduction purchase agreement
FAR	Forward action requests
GAAP	Globally Accepted Accounting Practice
GHG	Greenhouse gas
GSP	Global stakeholders' consultation process
IPCC	Intergovernmental panel on climate change
IRR	Internal rate of return
JMR	Joint Meter Reading
KHTPL	Kishangarh Hi-tech Textile Park Ltd.
km	Kilometre
KP	Kyoto Protocol of the United Nations Framework Convention on Climate Change
kW / kWh	Kilowatt / Kilowatt hour
LE	Leakage emissions
LoA	Letter of approval
LoI	Letter of Intent
LR	Lloyd's Register
LRQA	Lloyd's Register Quality Assurance Limited
NEWNE	Northern, Eastern, Western, and North-Eastern grid
MW / MWh	Mega watt / Mega watt hour
NCV	Net calorific value
NGO	Non governmental organization
ODA	Official development aid
PLF	Plant Load Factor
PDD	Project design document
PE	Project emissions
PPA	Power Purchase Agreement
PP	Project participant
RERC	Rajasthan Electricity Regulatory Commission
RRVPNL	Rajasthan Rajya Vidyut Prasaran Nigam Limited
SLM	Straight Line Method
SSC	Small Scale
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
WTGs	Wind Turbine Generators

2 Introduction

The project participant (PP), Kishangarh Hi-tech Textile Park Ltd (KHTPL) has contracted with Lloyd's Register Quality Assurance Limited (LRQA) to undertake validation of the proposed project activity "Suzlon 8.40 MW Wind Power Project". This report summarises the findings of the validation process that has been conducted on the validation requirements of the CDM.

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

Imran Ustad	LRQA Ltd. India	Team Leader, CDM Lead Validator Sector Expert
Arnab Deb	LRQA Ltd. India	Team member CDM Validator
T Ramesh	LRQA Ltd. India	Team member CDM Lead Validator Sector Expert
Ajesh Kumar	LRQA Ltd. India	Technical Reviewer and Sector Expert
Andrew Ritchie	LRQA Ltd.	Decision Maker

Personnel being engaged in a CDM project validation are qualified based on the established procedures of LRQA to assure the resource requirements satisfy all the requirements of competence criteria for an AE/DOE under CDM (CDM-Accreditation Standard version 04). LRQA is designated as an operational entity and holds the full responsibility of decision-making regarding the validation, in line 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 is promoted by Kishangarh Hi-tech Textile Park Ltd. The project activity involves the supply, erection, commissioning and operation of four Wind Turbine Generators (WTGs) of 2100 kW capacity each at District Jaisalmer in Rajasthan. All the WTGs are supplied and manufactured by Suzlon Energy Limited. The purpose of the project activity is to generate electrical energy through sustainable means using wind power. The net electricity supplied shall replace an equivalent amount of electricity from the connected NEWNE grid system thereby resulting in emission reductions.

The annual electricity generation of the project is estimated at 13,789 MWh and the annual emission reduction has been estimated as 13,081 tCO_2e.

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 21/07/2011 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 04.1 dated 12/10/2012 to confirm that all changes agreed had been incorporated.

3.2 Site Visit and 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
27/09/2011	Project Site / Substation Jodhpur, 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	Imran Ustad

Date	Location/ Address	Party Interviewed	Subjects Covered	Team Members on Site
			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 – 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 while 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 authorised decision maker were conducted before the submission of the validation report to the PP and before 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 CDM 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 14/03/2012 with reference number 4/22/2011 - CCC has been received. This letter of approval confirms the contribution of the project activity 'Suzlon 8.40 MW Wind Power Project' 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

Kishangarh Hi-tech Textile Park Ltd. is a 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 authorised, as confirmed in the LoA issued by the DNA of the Party concerned. The team confirmed that no entity other than the authorised entity is 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.

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

4.4 Project description

The project activity is promoted by Kishangarh Hi-tech Textile Park Ltd. The project activity involves the installation and operation of four Wind Turbine Generators (WTGs) of 2100 kW capacity each at District Jaisalmer in Rajasthan. All WTGs are supplied and manufactured by Suzlon Energy Limited. The purpose of the project activity is to generate electrical energy through sustainable means using wind power resource. The net electricity shall replace an equivalent amount of electricity from the connected NEWNE grid system hence resulting in reduction of greenhouse gas emissions.

The details on the location of the project activity WTGs were confirmed as Habur village 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:

Project WTG Titled	WTG location no.	Latitude				Longitude			
Kishangarh Hi-tech Textile Park Ltd.	MK 5	N	27°	10'	46.9"	E	70°	38'	12.0"
	MK 6	N	27°	10'	40.3"	E	70°	38'	29.7"
	MK 7	N	27°	10'	33.7"	E	70°	38'	47.4"
	MK 8	N	27°	10'	18.2"	E	70°	39'	00.9"
Total Capacity	**8.4 MW**								

The validation team confirmed the geographic coordinates of the WTGs during site visit and by further checking the same in the "Google Earth", a web based application.

The WTGs are supplied by Suzlon Energy Limited (hereafter called Suzlon) and are connected to the Northern, Eastern, Western, and North-Eastern grid (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-88 of Suzlon has been listed by 'Centre for Wind Energy Technology', Govt. of India[1] confirming availability of type certificate.

The PP conducted a third party assessment[2] for determining the Plant Load Factor (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 18.74%. LRQA validated the PLF as appropriate in accordance with paragraph 3 (b) of "Guidelines for the reporting and validation of plant load factors" (Version 01). The 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 and purchase orders (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, interview, and field survey.

LRQA confirms that the project description included in the PDD is accurate and complete. This description provides the reader with a clear understanding of the

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

[2] PP contracted third party engineering firm True Wind International Certification

precise nature of the project activity and the technical aspects of its implementation.

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 the installation of four WTGs, each with an individual capacity of 2.1 MW aggregating to 8.4 MW, which is less than 15MW. The validation team confirmed the total capacity of the project through the investment decision, necessary approvals and supply agreements. 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.

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 17, which is the current version at the time of completion this report.

LRQA confirms 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, PPA, 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 undertaken, for example, 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 17. LRQA can confirm that the procedure included in this methodology to identify the most reasonable baseline scenario, has been correctly applied.

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

LRQA confirms that:

- All the assumptions and data used by the project participants are listed in the PDD, including their references and sources;
- All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD;
- Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable;
- Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD;
    - The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity.

Algorithms and/or formula used to determine emission reductions

LRQA has confirmed that the steps taken and the equations applied to calculate project emissions, leakage and baseline emissions and emission reductions comply with the requirements of the approved methodology AMS-I.D "Grid connected renewable electricity generation" Version 17.

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

LRQA confirms that:

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

4.6 Additionality of a project activity

The project additionality was demonstrated by the PP using the 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 Guidelines on the demonstration of additionality of small-scale project activities 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 15/03/2010, the earliest date on which the Letter of Intent (LoI) for the WTGs were placed by KHTPL to technology supplier Suzlon Energy Limited 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 06, through the review of LoI, purchase orders for WTG, commissioning certificate and power purchase agreement.

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 19/08/2010, which is within six months of the project activity start date. Through the process of validation, LRQA confirms that the proposed CDM 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.

Identification of alternatives

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

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

Investment analysis

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

The 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 and with other relevant guidance including the latest guidelines on plant load factors "Guidelines for the reporting and validation of plant load factors".

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

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

4.7 Monitoring Plan

The PDD includes a Monitoring Plan based on the approved monitoring methodology AMS-I.D "Grid connected renewable electricity generation" Version 17.

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 15/03/2011 before the publication of the PDD on the UNFCCC website. The local stakeholder consultation meeting was held in Habur village, Jaisalmer district, Rajasthan and the following persons and entities attended this meeting.

- Local community
- Local village administration
- Technology suppliers (Suzlon)
- Local vendors
- Project Proponent (KHTPL)

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

For details, 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 21/07/2011 was modified and several changes occurred as a result of the validation process. The PDD version 4 dated 13/08/2012includes all these changes.

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

1. Inclusion/exclusion of data/parameters used for calculating the benchmark and IRR (in response to CAR03)
2. Revision in monitoring plan wherein the apportioning logic is clearly described (in

response to CAR04)

3. Correction of the grid emission factor calculation in accordance with 'Tool to calculate the emission factor for an electricity system' (in response to CL01)
4. Corrections in investment analysis (in response to CL02)
5. Change in emission reduction estimate from 12,040 tCO_2e/year to 13,081 tCO_2e/year as the calculation of ER was earlier done after deducting transmission charges (in response to CAR02, CL01, CL02 point2)
6. Change in benchmark value from 19.00% to 18.15% (in response to CAR03)
7. Change in the starting date of the project activity

5 Comments by parties, stakeholders and NGOs

In line 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 line with the requirements of the procedure for the period of 04/08/2011 to 02/09/2011 as per https://cdm.unfccc.int/Projects/Validation/DB/G6A62EF7NMGVNAHTP8ZMZBRFG419WV/view.html

One comment was received during this period.

6 Validation Opinion

LRQA has undertaken the validation of the proposed project activity "Suzlon 8.40 MW Wind Power Project" based on the requirements of CDM as set out in Article 12 of the Kyoto Protocol, the CDM M&P, the present annex, subsequent decisions made by the COP/MOP and CDM-EB, and the other rules applicable to the proposed project activity including the host country's legislation and its specific requirements for sustainable development.

The project activity is promoted by Kishangarh Hi-tech Textile Park Ltd. The project activity involves the supply, erection, commissioning and operation of 4 Wind Turbine Generators (WTGs) of 2100 kW each at District Jaisalmer in Rajasthan. All WTGs are supplied and manufactured by Suzlon Energy Limited. The purpose of the project activity is to generate electrical energy through sustainable means using wind power. The net electricity supplied shall replace an equivalent amount of electricity from the connected NEWNE grid system thereby resulting in emission reductions.

To arrive at the final validation conclusions and opinion, LRQA carried out a 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 4 CARs and 3 CLs. 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 13,081 tCO_2e and contribute to the sustainable development of the host country. Therefore LRQA requests the registration of "Suzlon 8.40 MW Wind Power Project" to the CDM Executive Board as a CDM project activity.

Decision Maker

Andrew Ritchie

Climate Change Services Manager

16th October 2012

7 Appendices

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

Letter of Approval from Ministry of Environment & Forests, Government of India Reference No. 4/22/2011-CCC dated 14/03/2012.

7.2 Appendix B: List of documents reviewed

Category A documents (documents prepared by the PP)

1. Project Design Document (PDD) version 01 dated 21/07/2011, version 02 dated 07/12/2011, version 03 dated 27/02/2012, version 4 dated 13/08/2012 and version 4.1 dated 12/10/2012
2. IRR sheet version 01 dated 21/07/2011, version 02 dated 07/12/2011, version 03 dated 27/02/2012 and version 04 dated 13/08/2012.
3. Emission Reduction sheet version 01 dated 21/07/2011 and version 02 dated 07/12/2011
4. Certificate of incorporation for Kishangarh Hi-Tech Textile Park Limited dated 17/05/2006
5. Contract agreement between KHTPL and EnKing International dated 22/02/2011 for providing CDM advisory services
6. Technical specifications of S-88 Suzlon wind turbine generator of 2.1 MW capacity
7. Offer letter for 8.4 MW wind project from Suzlon Energy Ltd dated 15/01/2010
8. Purchase order for supply of four 2.1 MW WTGs dated 16/03/2010
9. Purchase order for supply of rotor blades for four 2.1 MW WTGs dated 16/03/2010
10. Purchase order for supply of transformers for four 2.1 MW WTGs dated 16/03/2010
11. Work order for erection, installation and commissioning for four WTGs dated 16/03/2010
12. Work order for Civil works dated 16/03/2010
13. Work order for Electrical works dated 16/03/2010
14. Order for arranging land for 4 WTGs dated 16/03/2010
15. Work order for power evacuation facility dated 16/03/2010
16. Purchase order for four tubular towers dated 16/03/2010
17. Letter of intent for four 2.1 MW WTGs dated 15/03/2010
18. Land lease agreement dated 12/04/2010
19. Wheeling and Banking agreement dated 09/12/2010 between Kishangarh Hi-Tech Textile Park Ltd. and Suzlon Infrastructure Services Ltd. and Ajmer Vidyut Vitran Nigam Ltd.
20. Wheeling agreement dated 20/12/2010 between Rajasthan Rajya Vidyut Prasaran Nigam Ltd. and Kishangarh Hi-Tech Textile Park Ltd. and Suzlon Infrastructure Services Ltd.
21. Commissioning Certificates for four WTGs dated 07/01/2011
22. Certificate from Suzlon confirming the lifetime of WTGs as 25 years
23. Loan sanction letter from IDBI Bank Ltd. dated 22/03/2011
24. Prior consideration of CDM form dated 19/08/2010
25. Sample Invoice raised by KHTPL for electricity delivered in December 2010, January to March 2011

26. No objection certificate from Rajasthan Renewable Energy Corporation Limited for 4 x 2.1 MW WTGs by KHTPL dated 26/10/2010
27. Letter from Rajasthan Renewable Energy Corporation Limited for extension in commissioning schedule dated 01/12/2010
28. Extract of board meeting minutes dated 15/12/2010
29. Work order for conducting PLF estimation study dated 18/02/2010
30. Third party PLF study report dated 05/03/2010
31. Invitation letters dated 07/03/2011 to stakeholders for local stakeholder meeting to be conducted on 15/03/2011
32. Minutes of meeting for local stakeholder consultation meeting held on 15/03/2011
33. Provisionally adjustment of energy delivered by wind farm project for the KHTPL

Category B documents (other documents referenced)

1. AMS I-D Grid connected renewable electricity generation, Version 17.
2. "Tool to calculate the emission factor for an electricity system" Version 02.2.1
3. CO2 Baseline Database for the Indian Power Sector, User Guide Version 6.0
4. User guide version 6.0 CO2 baseline database for Indian power sector (http://cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm)
5. Clean Development Mechanism Small Scale Project design document form (CDM- SSC – PDD)
6. 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
7. Guidelines on the Demonstration and Assessment of prior consideration of the CDM (Version 04)
8. Guideline for the reporting and validation of plant load factors (Version 01)
9. Clean Development Mechanism Validation and Verification Manual version 1.2 (Annex 01, EB 55)
10. Eligibility Criteria for Host Country Approval, National CDM Authority, Ministry of Environment & Forests
11. Notification by Ministry of Environment & Forests dated 01/12/2009
12. Guidelines on the demonstration of additionality of small-scale project activities" (Version:09, EB: 68, Annex 27)
13. Tariff order for Rajasthan dated:, 29/09/2006, 16/07/2009, 31/03/2010 and 06/08/2010
14. Notification by Ministry of Environment & Forests dated 01/12/2009
15. Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006

7.3 Appendix C: List of persons interviewed

Kishangarh Hi Tech Textile Park Limited (Project Participant)

Mr. Vijay Kumar Agrawal	Director

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. Lokesh Kumar	Assistant Manager
Mr. Ansar Mohammad	Engineer

Substation

Mr. Rakesh R Bhuria	Site incharge

Enking International India (EKI) Energy Services Limited

Mr. Manish Dabkara	Director
Mr. Akshay Vyas	Deputy Manager
Mr. Abhishek Kumar	General Manager
Mr. Sumeet Singhvi	Assistant General Manager - (Finance CDM)
Mr. Naveen Sharma	Assistant General Manager - (Operations)

Local villagers

Mr. Gemar Singh	Driver, Local villager
Mr. Gopal Singh	Local villager
Mr. Ramesh Kumar	Security personal, Local villager
Mr. Babu Singh	Local villager
Mr. Sarwar Singh	Local villager

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

The PDD was made publicly available in accordance with the requirements of the Procedures for processing and reporting on validation of a CDM project activity for the period of 04/08/2011 to 02/09/2011 as per https://cdm.unfccc.int/Projects/Validation/DB/G6A62EF7NMGVNAHTP8ZMZBRFG419WV/view.html.

Comments were received during the period and the comments were made publicly available as per https://cdm.unfccc.int/Projects/Validation/DB/G6A62EF7NMGVNAHTP8ZMZBRFG419WV/view.html .

Comment received have been taken into consideration as follows:

GSC comments received	PP's response	DOE Validation
It is not clear whether the objective of PDD is to teach global stakeholders what is CAPM or give the data to enable Global stakeholder to check the assumptions, input parameters and calculations and comment on it. Global stakeholders have more knowledge and do not require the PP to teach. This PDD does not give any information on the input parameters and assumptions used. This is not conforming to CDM requirement where the reader should be in a position to construct the worksheet and arrive at the same results. Since no information is given, this requirement is not fulfilled. Hiding information only proves that the project is not additional and has been made additional. Otherwise there is no reason why the PP should hide information from global stakeholders. Therefore, this project should not be taken up for validation by DOE unless the PP re webhosts the PDD with all information. If the DOE goes ahead with validation without re webhosting, it will prove that it is also not aware of the rules. EB may kindly ensure that this project is not accepted for registration unless it is re web hosted with all information. Submitted by: Karthikeyan	The revised PDD presents all the inputs data and parameter under section B.5. The investment analysis is performed following the Guidance on assessment of investment analysis, Version 5	The validation team raised CAR03 as the input values for the investment analysis were not presented in the initial PDD. In response, the PP revised the PDD and provided all the input data / values transparently under section B.5. Further, CL02 was raised seeking clarification on the investment analysis. In response, the PP has provided a revised spreadsheet and supporting evidence.

7.5 Appendix E: Certificate of Appointment

Validation of "Suzlon 8.40 MW Wind Power Project"

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
Arnab Deb	Team Member
T Ramesh	Team Member, Sector Expert
Ajesh Kumar	Technical Reviewer
Andrew Ritchie	Decision Maker

Signed by

Decision Maker

Andrew Ritchie
Climate Change Services Manager
16th October 2012

7.6 Appendix F: Validation Protocol and findings log

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

	Validated situation	**Conclusion**
SECTION 1. Approval		
Host Country Approval		
1. Has the Host country DNA provided a written approval?	Yes ☒ No ☐ NA☐ [3] PP as submitted the LoA reference no. 4/22/2011-CCC dated 14/03/2012. CAR01 was initially raised as PP did not provide the LoA. Later the LoA was provided and the CAR was closed.	~~CAR01~~ OK
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 14/03/2012 with reference 4/22/2011-CCC was 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 was issued and valid for the proposed CDM 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 (for example, 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

[3] 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. The LoA indicates the precise title of the proposed CDM 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☒ The team confirms that the project is a unilateral project activity and the LoA from the Annex I country DNA is not applicable.	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 (for example, 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

		Validated situation		Conclusion
SECTION 2. Participation				
1	Confirm that the PPs are listed in a tabular form in section A.3 of PDD and that this information is consistent with the contact details provided in Annex 1 of the PDD and with the contact details in the MoC.	Host Party PP name in PDD/ A.3	Kishangarh Hi-tech Textile Park Ltd.	OK
		Host Party PP name in PDD/ Annex 1	Kishangarh Hi-tech Textile Park Ltd.	
		Host Party PP name in MoC	Kishangarh Hi-tech Textile Park Ltd.	
		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	
2	Confirm that each of the PPs has been approved by at least one Party involved.	Yes ☒ No ☐ NA☐ The project activity is currently developed as a unilateral project. Annex I participant is not specified at this stage.		OK
3	Confirm that no entities other than those approved as PPs are included in section A.3 of PDD.	Yes ☒ No ☐ NA☐ Kishangarh Hi-tech Textile Park Ltd is the only PP as indicated in the PDD.		OK
4	Ensure that the approval of participation has been issued from the relevant DNA. If in doubt verify this with the corresponding DNA.	The letter of approval (LoA) dated 14/03/2012 has been issued by host country DNA. The Designated National Authority (DNA) is the National Clean Development Mechanism Authority (NCDMA) established under 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, email contact should be entered per authorized signatory. In cases where additional contact details are included, only the first indicated information will be taken into account and only the official business address of the proposed entity should be provided on the F-CDM-MOC form. - The Statement of Agreement in Section 3 should be signed by one authorized signatory for each project participant; signatures made available in Section 3 should correspond to those indicated in the related Annex 1 document; focal point entities who are not designated as project participants should not sign Section 3.	Yes ☒ No ☐ NA☐ MoC dated 16/07/2012 was submitted by the PP. • Kishangarh Hi-tech Textile Park Ltd 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 the installation of wind power generation of total capacity of 8.4 MW consisting of four WTGs (4 x 2.1 MW) connected to the NEWNE grid system in the host country, India. The WTGs, 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 speed, nominal power, hub height and the expected annual generation were given special emphasis. The model S-88 of Suzlon has been listed by 'Centre for Wind Energy Technology', Govt. of India[4] confirming availability of type certificate. The expected net PLF from the project activity is 18.74% as presented by the study conducted by third party assessment[5] 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). LRQA deems this logic as appropriate and conservative.	~~CAR02~~ OK

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

[5] PP contracted third party engineering firm True Wind International Certification for conducting PLF assessment

	Validated situation	Conclusion
	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. Earlier, the PP did not provide the evidence for the PLF considered in investment analysis and emission reduction calculations. Hence, CAR02 was raised. In response, the PP provided third party PLF estimation report from which the net PLF considered for investment analysis / emission reduction estimate is 18.74%. The validation team confirmed the PLF is appropriate in accordance with 'Guideline for the reporting and validation of plant load factors' version 01.	

<table>
<tr><th></th><th>Validated situation</th><th>Conclusion</th></tr>
<tr><td>2. Confirm that the exact project location is provided in the PDD with Geographical coordinates, check the accuracy of them and the format of the notation (Grades, minutes, seconds or decimal indicating latitude N or S and Longitude E or W)
Please include here the Geographical coordinates:</td><td>The validation team conducted a site visit and confirmed the 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 have been provided by Suzlon Energy Ltd.

The details on the location of the project activity WTGs were confirmed at the Habur site in 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 during the site visit; in addition, the team also cross-checked the WTG coordinates in web based application ‘Google Earth’.

<table>
<tr><th>Sr. No.</th><th>WTG location no.</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>1</td><td>MK 5</td><td>N 27° 10’ 46.9”</td><td>E 70° 38’ 12.0”</td></tr>
<tr><td>2</td><td>MK 6</td><td>N 27° 10’ 40.3”</td><td>E 70° 38’ 29.7”</td></tr>
<tr><td>3</td><td>MK 7</td><td>N 27° 10’ 33.7”</td><td>E 70° 38’ 47.4”</td></tr>
<tr><td>4</td><td>MK 8</td><td>N 27° 10’ 18.2”</td><td>E 70° 39’ 00.9”</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.

CL 03 was raised on the unique coordinates of the project activity. Please refer Findings log section at the end of the report for details on closure.</td><td>~~CL 03~~
OK</td></tr>
</table>

<table>
<tr><th></th><th>Validated situation</th><th>Conclusion</th></tr>
<tr><td>3. Confirm that the physical site inspection reflects the description in the PDD of the proposed CDM project activity.</td><td>The team undertook the physical site inspection on 27/09/2011 and the details are as follows:
The validation team travelled to Jaisalmer and from there on to the location of the project activity on 27/09/2011 and the physical inspection of the WTG, interview with the local stakeholder and PP were conducted on 27/09/2011 as per the details below:

<table>
<tr><th>Date</th><th>Location/ address</th><th>Party interviewed</th><th>Subjects covered</th><th>Team member on site</th></tr>
<tr><td>27/09/2011</td><td>Project Site/ Substation

Jaisalmer, Rajasthan</td><td>Technology supplier

Local stakeholders

Project Participant</td><td>Project Site Visit

Interview with local stakeholders

Investment decision

Financial analysis

Benchmark selection</td><td>Imran Ustad</td></tr>
</table>

The details are provided in the validation report section 3.2.</td><td>OK</td></tr>
<tr><td>4. If the team did not undertake a physical site inspection, describe the justification as approved by the CDM Quality Manager. (VVM 01.2: 60-61)

Describe briefly the physical site inspection: Travel details and installations, facilities and buildings visited.</td><td>Site Visit was conducted on 27/09/2011 and details are as above.</td><td>OK</td></tr>
</table>

	Validated situation		Conclusion
5. 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	OK
	NA The project activity is a Greenfield project	NA	
6. 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 by debt and equity and there is no financing from 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 promoter's equity and debt financing from bank and did not involve any diversion of ODA.		OK
7. If the project activity is a small scale one, confirm that it is not a debundled component of a large scale project, in line with appendix C of the simplified M&P for SSC CDM project activities and the Guidelines for assessment of de-bundling for SSC project activities.	Site visit and interviews with the PP confirmed that there is no CDM registered project of the same category & technology as the project activity within 1km of the project boundary. 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

	Validated situation	Conclusion
SECTION 5. Baseline and monitoring methodology		
1. Have the baseline and monitoring methodologies selected by the project participants been previously approved by the CDM Executive Board, that is, 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 17. AMS-I.D is valid from 17/06/2011 onwards and is the current version at the time of completion of this report. 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 four WTGs, each with an individual capacity of 2.1 MW aggregating to 8.4 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 methodology is applied with the general guidelines to SSC CDM methodologies.	Approved methodology AMS-I.D "Grid connected renewable electricity generation" Version 17 has been applied to the proposed CDM 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 CDM 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 CDM 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 17	Information in the PDD	Steps taken to assess PDD information	Conclusion
1	This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass: (a) Supplying electricity to a national or a regional grid; or (b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.	The project activity is the Renewable Energy Project i.e. Wind Power Project that supply electrical power to the known consumer.	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 and wheeling agreement with RRVPNL.	OK
2	Illustration of respective situations under which each of the methodology (i.e. AMS-I.D, AMS-I. F and AMS-I.A) applies is included in Table 2.	The 1st & 3rd option of Table 2 of AMS ID Version 17, EB 61 is applicable (please refer footnote).	The project activity involves installation of new wind based power plant at the site (Greenfield project) and supplies generated electricity to the customer facility via national grid. i.e. NEWNE grid. LRQA has confirmed this through the site visit, review of wheeling agreement and commissioning certificates.	OK
3	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	The project activity is the Renewable Energy Project i.e. Wind Power Project that supply electrical power to the electricity grids i.e., NEWNE. It's an Greenfield project thus	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	OK

No.	Applicability conditions in the AMS.I.D Version 17	Information in the PDD	Steps taken to assess PDD information	Conclusion
	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).	Option A is applicable i.e. (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).	order placed by the project participant to the technology provider.	
4	Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology: • The project activity is implemented in an existing reservoir with no change in the volume of reservoir; • The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/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.	Not applicable, the project activity is the Renewable Energy Project i.e. Wind Power Project.	The project activity is not a hydro 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.	Not applicable, the project activity is the Renewable Energy Project i.e. Wind Power Project	The project involves the installation of new wind power plant/unit of 8.4 MW installed capacity. 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.	Not applicable, the project activity is the Renewable Energy Project i.e. Wind Power Project	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	Not applicable.	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	OK

No.	Applicability conditions in the AMS.I.D Version 17	Information in the PDD	Steps taken to assess PDD information	Conclusion
	by the project should be lower than 15 MW and should be physically distinct from the existing units.		order placed by the project participant to the technology provider.	
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, the project activity is the Renewable Energy Project i.e. Wind Power Project	The project activity involves installation of new power plant at the site (Greenfield project) and is not a case of retrofit or replacement. 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** Section B.6.1 of the PDD states: Central Electricity Authority, Ministry of Power, Government of India (Host Country) has given the delineations of the project electricity system and the connected electricity system in India. As per CEA, the Indian power system is divided into two regional grids, viz. NEWNE Grid & Southern Grid. As the project activity is located in the State of Rajasthan, NEWNE Grid is the relevant electricity system.	Central Electricity Authority, Ministry of Power, Government of India (Host Country) has given the delineations of the project electricity system and the connected electricity system in India that meet the requirements of the Tool.	OK
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** Section B.6.1 of the PDD states: Project Emissions (PE_y): As per paragraph 20 of approved methodology AMS- I.D. (Version- 17, EB- 61), *For most renewable energy project activities, PE_y = 0. However, for the following categories of project activities, project emissions have to be considered following the procedure*	The project activity was confirmed as not planning to involve fossil fuel combustion by reviewing the project documentation and the on-site visit. This is in accordance with the applied methodology AMS-I.D Version 17. No transfer of energy generating equipment from another facility is taking place. This is confirmed by the team	OK

No.	Applicability conditions in the AMS.I.D Version 17	Information in the PDD	Steps taken to assess PDD information	Conclusion
		described in the most recent version of ACM0002. • *Emissions related to the operation of geothermal power plants (e.g. non-condensable gases, electricity/fossil fuel consumption)* • *Emissions from water reservoirs of hydro power plants* As the project activity is a wind power generation, the project emissions are considered zero. Leakage Emissions (LE_y): As per paragraph 22 of the approved methodology AMS- I.D. (Version- 17, EB- 61), *If the energy generating equipment is transferred from another activity, leakage is to be considered*. The leakage emissions may be considered as zero tCO_2 as no such equipment shall be transferred from another project activity.	after the site visit and after verifying commissioning certificates and other clearances; therefore, leakage is zero.	

	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 was checked as detailed above.	OK
6. If a determination regarding the applicability of the selected methodology to the proposed CDM project activity cannot be made, request clarification of the methodology in line with the guidance provided by the CDM Executive Board. Describe the clarification request and response.	NA	NA

	Validated situation	Conclusion
7. If the Validation Team determines that the proposed CDM project activity does not comply with the applicability conditions of the methodology, the Team may proceed by means of requesting revision to or deviation from the methodology in line with the guidance provided by the CDM Executive Board. Describe the request for revision or deviation and approval by the CDM Executive Board.	NA	NA
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 CDM 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 17. 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

	Validated situation	Conclusion
2. Confirm that all sources and GHGs required by the methodology have been included within the project boundary. Describe here if any emission source that will be affected by the project activity and is not addressed by the approved methodology, has been identified. In such case request clarification of, revision to or deviation from the methodology in accordance with EB guidance.	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 the absence of the proposed CDM project activity and is in line 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 17, 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

	Validated situation	Conclusion
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, that is, 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
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 17. 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 does it take 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 (for example, studies, web pages, certificates, etc)?	As the baseline scenario is as per the applied methodology this is not applicable.	OK

	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 these are 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;	~~CL 01~~ ~~CAR 02~~ OK

	Validated situation	Conclusion
	$PE_y = 0$ $LE_y = 0$ Thus, $ER_y = BE_y$ **Baseline emissions** According to the methodology AMS.I.D Version 17, for new grid connected renewable power plant, the baseline emissions are the product of electricity produced by renewable energy generating unit and 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 as a result of the implementation of the CDM project activity in year *y.(*MWh) $EF_{CO2,grid,y}$ = CO_2 emission factor of the NEWNE grid in year y (tCO_2/MWh) = Combined margin CO_2 emission factor in year y (tCO_2/MWh). Calculation of the emission factor 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, publicly available source. 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 has used 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 to LRQA. The step-wise estimation of CM EF is provided as below:	

	Validated situation	Conclusion
	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 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.	

	Validated situation	Conclusion

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:

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

	Validated situation	Conclusion

2009-10	88,593,337	109,063.91	0.8123

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:
$BE_y = EG_{BL,y} \times EF_{CO2,grid,y}$
$= 13,789\ MWh \times 0.9487\ tCO_2e/MWh$
$= 13,081\ tCO_2e$

Annual average baseline emission is estimated to be 13,081 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:
$ER_y = BE_y - PE_y - LE_y$

$ER_y = 13,081 - 0 - 0$
$= 13,081\ tCO_2e$

The average annual emission reduction is 13,081 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 earlier calculated ER reduction deducting transmission charges from the amount of electricity supplied to the grid; hence, a corrective action CAR 02 was raised. PP later removed the transmission charges from ER calculation as it was not losses but charges made to the transmitting agency. The revised calculation is found to be appropriate and realistic.

CL 01 was raised to the PP as the reference of southern grid in B.6 section was not clear. PP in response have corrected the emission factor for NEWNE grid and also removed the reference of southern grid from PDD.</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>

<table>
<tr><th>Data/Parameter title:</th><th>$EF_{grid,OM,y}$</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</td></tr>
</table>
</td><td></td></tr>
</table>

	Validated situation		Conclusion
		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 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.

	Validated situation		Conclusion
		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 13,789	
	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	
3. Confirm that all assumptions and data used by PPs are listed in the PDD including their references and sources, and that the documentation used as the basis for these assumptions and source of data is correctly quoted and interpreted in the PDD.	The validation team confirms that all assumptions and data used by the 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

	Validated situation	Conclusion
4. Confirm that all estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.	The 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	Guidelines on the demonstration of additionality of small-scale project activities, Version 09, EB 68 Annex 27	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 is it in line with the Glossary of CDM Terms?	Yes ☒ No ☐ The start date for the project activity is 15/03/2010, the earliest date on which the Letter of Intent (LoI) for the WTGs was placed by Kishangarh Hi-tech Textile Park Ltd to Suzlon Energy Limited (technology supplier) 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 06, through the review of LoI, 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 02 August 2008, confirm that the PPs have informed the host party DNA and the UNFCCC secretariat in writing of their intention to seek CDM Status. If such a notification has not been provided by the PPs within six months of the project activity start date, determine that the CDM was not seriously considered in the decision to implement the project activity.	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 19/08/2010, 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 UNFCCC dated 02/09/2010 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 02 August 2008, check the following requirements through document reviews to assess the PPs prior consideration of the CDM: (a) Evidence that must indicate that awareness of the CDM before the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project. (b) Reliable evidence from project participants that must indicate that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation. The time gap between the documented evidence of prior CDM consideration and continuing and real actions shall be within the period required by the Guidance on prior consideration of the CDM. If evidence to support the serious prior consideration of the CDM as indicated above that is authentic is not available, determine that the CDM was not considered in the decision to implement the project activity.	Not Applicable	NA

	Validated situation	Conclusion
SECTION 6b. Identification of alternatives		
1. Does the PDD identify credible alternatives to the project activity, to determine the most realistic baseline scenario? Assess this list of alternatives and ensure that: (a) The list of alternatives includes as one of the options that the project activity is undertaken without being registered as a proposed CDM project activity. (b) The list contains all plausible alternatives considered to be viable means of supplying the outputs or services that are to be supplied by the proposed CDM project activity. (c) The alternatives comply with all applicable and enforced legislation.	LIST OF ALTERNATIVES No | Description in the PDD | Describe why it is credible and complete | NA | | NA | The project is categorised as small scale project activity and applies guidelines on the demonstration of additionality of small-scale project activities, Version 09, EB 68 Annex 27 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.	OK

	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	The PP has demonstrated additionality by applying the investment barrier in accordance with the Guidelines on the demonstration of additionality of small-scale project activities. As per the Guidelines, a simplified baseline and monitoring methodology listed in Guidelines 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 Guidelines on the demonstration of additionality of small-scale project activities. These barriers are:	OK

	Validated situation	Conclusion
price indices. (c) Review feasibility reports, public announcements and annual financial reports related to the proposed CDM project activity and the project participants.	• Investment barrier • Technological barrier • Barrier due to prevailing practice • Other barriers The PP has chosen investment barrier to prove the additionality of the proposed CDM 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 15/03/2010 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 15/01/2010 and inputs from Rajasthan Electricity Regulatory Commission (RERC) Order were presented to the Board. During the site visit, the validation team confirmed the actual board minutes and the board note considered by the Board of Directors on the feasibility of the project activity. The actual investment in the project was taken from offer letter placed by the technology suppliers Suzlon on 15/01/2010 and Regulatory tariff orders - Central Electricity Regulatory Commission (CERC) & Rajasthan Electricity Regulatory Commission (RERC).	
2. Assess the correctness of computations carried out and documented by the project participants	The validation team has assessed the correctness of the calculations that were carried out by the PP. IRR was calculated 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) was added back as cash inflows in accordance with guidance 4 of 'Guidelines on the Assessment of Investment Analysis'.	~~CAR 03~~ ~~CL 02~~ OK

	Validated situation	Conclusion
	Further, LRQA confirms that the tax calculation considers benefit under section 80 IA[6] 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 has been added back to net profits for the purpose of calculating the IRR. The PP had presented the unprotected spreadsheet versions of all investment analyses, having readable formulae. 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 Equity 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 The Equity IRR calculated with the input parameters as provided below work out to 9.21% for the project activity without considering the benefits from the CDM revenue which is less than the benchmark of 18.15%. CAR03 was raised as the data/parameters used for investment analysis were not presented in the PDD. In response, the PP provided the data/parameters used for investment analysis in a transparent manner. Hence, the CAR was closed. For details on the finding and resolution, please refer Findings log at the end of the report. CL02 was raised seeking clarification on the investment analysis. In response, the PP	

[6] 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>provided a revised IRR sheet and supporting evidence. Hence, the CL was closed. For details on the finding and resolution, please refer Findings log at the end of the report.</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. The 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 / PLF</td><td>5.71%</td><td rowspan="4">9.21%</td><td>12.79%</td><td>24.29%</td></tr>
<tr><td>O&M cost</td><td>9.89%</td><td>8.49%</td><td>-133.4%</td></tr>
<tr><td>Project cost</td><td>11.97%</td><td>7.05%</td><td>-24.95%</td></tr>
<tr><td>Tariff rate</td><td>5.67%</td><td>12.84%</td><td>24.03%</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 24.29%. The PLF for the project i.e. 18.74% is based on the Third party wind assessment report dated 05/03/2010 in line with ‘Guidelines for the reporting and validation of plant load factors’ Version 01, Annex 11, CDM EB report of its 48th meeting. LRQA also reviewed the tariff order of the Rajasthan Electricity Commission dated 23/01/2009, which was applicable at the time of investment decision, which indicates a PLF of 21% for Jaisalmer site.

The difference between the Third party PLF and RERC tariff order based PLF is 12.05% which is above 10% sensitivity. However, the PLF indicated in the RERC tariff order is an average PLF for the Jaisalmer District, while the PLF of 18.74% considered in the project activity is specific to the project site based on the WTG location coordinates and hence appropriate and realistic in the context of the project activity. However, even if a PLF of 21% is considered, the IRR reaches 13.62% which is well below the benchmark calculated for the project of 18.15%, and the project remains additional in such circumstance.

Therefore, the PLF considered for the project can be deemed appropriate and a rise in</td><td></td></tr>
</table>

	Validated situation	Conclusion
	PLF in the range of 24.55% is an unlikely situation. Project cost The IRR is within the benchmark of 18.15% 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 within the sensitivity range considered. The project IRR reaches the benchmark at a variation by -24.95%, which is unlikely to happen since the project is already in operation and there has been only 1.66% of decrease in project cost as verified from the actual purchase orders issued by the PP. O&M cost: The IRR does not cross the benchmark even when the O&M cost is made zero. 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: The Tariff for HT-5 category has been the same for 10 years since 2001, i.e. INR 4.01 per kWh. It was increased only in September 2011 to INR 5.00 per kWh. That amounts to a Compound Annual Growth Rate (CAGR) of 2.23%. The probability of the tariff increasing by this amount every year is negligible. Even if the tariff were to increase by this amount, the IRR would only reach 14.75%, much below the benchmark. To reach the benchmark, the tariff needs to increase by 3.705% per year. 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 the correctness of calculation 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	Numbers	4	Offer document from supplier dated 15/01/2010	• Minutes of meeting of the KHTPL dated 15/03/2010 confirmed PP had decided to install four WTGs of 2.1 MW capacity each. • Supplier offer document from Suzlon dated 15/01/2010 confirmed 4 WTGs (S-88 type) • Purchase order issued by KHTPL dated 16/03/2010 for 4 WTGs. • Commissioning certificates dated 07/01/2011 confirmed the commissioning dates for 4 WTGs.	OK
Capacity of each WTG	MW	2.1	Offer document from supplier dated 15/01/2010	• Minutes of meeting of the KHTPL dated 15/03/2010 confirmed PP had decided to install four WTGs of 2.1 MW capacity each. • Supplier offer document from Suzlon dated 15/01/2010 confirmed 4 WTGs (S-88 type) • Purchase order issued by KHTPL dated 16/03/2010 for 4 WTGs. • Commissioning certificates dated 07/01/2011 confirmed the commissioning dates for 4 WTGs.	OK
Net Plant Load Factor Net Generation considered for captive consumption of electricity	% Million kWh	18.74 13.789	Third party PLF assessment conducted by True Wind International Certification (TWIC)	PLF for the project i.e. 18.74% is based on the third party wind assessment report dated 05/03/2010 in line with 'Guidelines for the reporting and validation of plant load factors' Version 01, Annex 11, CDM EB report of its 48th meeting. LRQA also reviewed the tariff order of the Rajasthan Electricity Commission dated 23/01/2009, which was applicable at the time of investment decision, which indicates a PLF of 21% for Jaisalmer site. The difference between the third party PLF and RERC tariff order based PLF is 12.05% which is above the 10% sensitivity. However, the PLF indicated in the RERC tariff order is an average PLF for the Jaisalmer	OK

Parameter/input	Symbol/Unit	Value	Source	Means of validation	Conclusion
				District, while the PLF of 18.74% considered in the project activity is specific to the project site based on the WTG location coordinates and hence appropriate and realistic in the context of the project activity. However, even if a PLF of 21% is considered, the IRR reaches 13.62% which is well below the benchmark calculated for the project of 18.15%, and the project remains additional in such circumstance.	
Transmission charges	%	8.0	RERC order No. 32/2010 dated 02/02/2010	The validation team confirmed the transmission charges from the applicable RERC order. Further, the adjustment letter issued by the Office of Superintending Engineer confirms the transmission charges as 8%.	OK
Fixed charges	INR/kW/month	57.58	RERC order No. 32/2010 dated 02/02/2010	The validation team confirmed the fixed charges from the applicable RERC order. Further, the adjustment letter issued by the Office of Superintending Engineer confirms the fixed charges as INR 76/KW/month. Hence, the fixed charges of INR 57.58/kW/month are deemed conservative.	OK
Total project cost	INR Million	460.00	Offer document from supplier dated 15/01/2010	Supplier offer document from Suzlon dated 15/01/2010 mentioned a total project cost of INR 460 million. The offer letter does not contain any break up of project cost. However, the scope of work includes supply of materials, labour and services, identification, selection and allocation of land, obtaining all government permissions etc. As the project was commissioned and operational during the validation, LRQA confirmed the actual project cost by reviewing the Purchase Orders (PO) dated 16/03/2010 placed by the PP to Suzlon for supply of WTG & other components, civil & electrical works, erection & commissioning and for acquiring the land. The purchase orders placed by the PP indicated a total project cost of INR 452.47 Million and the break-up was confirmed as below. The difference has been covered in	OK

<table>
<tr><th>Parameter/input</th><th>Symbol/Unit</th><th>Value</th><th>Source</th><th>Means of validation</th><th>Conclusion</th></tr>
<tr><td></td><td></td><td></td><td></td><td>the sensitivity analysis.

<table><tr><th>Cost of Project as per Purchase Order</th><th>Total Cost (INR Million)</th></tr><tr><td>Land</td><td>8.00</td></tr><tr><td>WTG Cost</td><td>224.81</td></tr><tr><td>Tubular Tower</td><td>70.72</td></tr><tr><td>Transformer</td><td>6.70</td></tr><tr><td>Civil Works</td><td>31.65</td></tr><tr><td>Rotor Blades</td><td>42.21</td></tr><tr><td>Electrical Works</td><td>27.86</td></tr><tr><td>Erection and Commissioning Charges</td><td>12.79</td></tr><tr><td>Power Evacuation Facility</td><td>27.72</td></tr><tr><td>Total</td><td>452.47</td></tr></table>
Considering the actual project of INR 452.47 Million as per the Purchase Order, the project IRR is still below the benchmark for the project.

Thus, validation team confirms that the total project cost considered by the PP is reasonable and appropriate.</td><td></td></tr>
<tr><td>Annual Operation and Maintenance (O&M) cost for project activity</td><td>INR Million</td><td>10.15</td><td>Offer document from supplier dated 15/01/2010</td><td>Supplier offer document from Suzlon dated 15/01/2010 mentioned an annual O&M cost of INR 10.15 million. Further it mentioned a 5% annual escalation from 2nd year.

Furthermore, the validation team confirmed that the purchase order dated 16/03/2010 for erection, installation and commissioning indicates the actual O&M cost as INR 8.82 million with 5% annual escalation from 3rd year. The IRR does not cross the benchmark even if the actual O&M cost (lower than that</td><td>OK</td></tr>
</table>

Parameter/input	Symbol/Unit	Value	Source	Means of validation	Conclusion
				considered at the decision making time) is considered.	
Escalation in O&M cost from second year onwards	%	5.0	Offer document from supplier dated 15/01/2010	Supplier offer document from Suzlon dated 15/01/2010 mentioned the escalation in O&M cost by 5% from second year onwards. Furthermore, the validation team confirmed the purchase order dated 16/03/2010 for erection, installation and commissioning indicates the actual escalation in O&M cost by 5% from third year onwards. The IRR does not cross the benchmark even if the escalation in O&M cost is considered from third year onwards.	
Applicable service tax on O&M costs, erection, commissioning & power evacuation	%	10.30	Service Tax Rule	The PP has considered the service tax[7] based on the host country regulation, hence the service tax considered for the project is deemed appropriate.	OK
Tariff rate	INR/kWh	5.00	Internal Assumption	Tariff rate was based on the assumption of the PP at the investment decision time. The validation team confirmed the detailed note considered by the PP at the time of investment decision making and confirmed that the PP had considered a tariff rate of INR 5.00/kWh at the time of decision making. Also, the validation team cross-checked the electricity purchase rate from the distribution company (Discom) by large industry (HT-5) which was INR 4.01/kWh at the time of investment decision making. Hence, the tariff rate of INR 5.00/kWh is deemed conservative. However, during the validation, the purchase tariff rate was revised to INR 5.00/kWh in September 2011 which	OK

[7] 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

[8] Refer page 17 at, http://www.powermin.nic.in/whats_new/pdf/Tariff_Policy.pdf

Parameter/input	Symbol/Unit	Value	Source	Means of validation	Conclusion
				is the same as considered in the investment analysis. The validation team confirmed the appropriateness of using a fixed purchase tariff rate considering the fact that the Tariff for HT-5 category has been the same for 10 years since 2001, i.e. INR 4.01 per kWh. It was increased only in September 2011 to INR 5.00 per kWh. (after decision making). Hence, the PP did not consider a possibility for a year to year increase in the tariff rate and deemed a fixed purchase tariff rate to be appropriate. The validation team confirmed the increase in tariff rate from INR 4.01/kWh to INR 5.00/kWh in 10 years amounts to a CAGR of 2.23%. Even if the tariff were to increase by this amount, the IRR would only reach 14.75%, much below the benchmark. To reach the benchmark, tariff needs to increase by 3.705% per year which is very unlikely. The validation team also confirms that this category is the highest cross subsidising category, and it is required to be brought down progressively, as per Ministry of Power Tariff-Design approach[8], which suggests there might be a case of de-escalation in tariff in future. Hence, the fixed tariff rate for purchase of electricity is deemed appropriate and reasonable.	
Wheeling charges	INR/kWh	0.055	RERC order	The validation team confirmed the wheeling charges from the applicable RERC order. Further, the adjustment letter issued by the Office of Superintending Engineer confirms the wheeling charges as INR 0.055/kWh	OK
Depreciation rate on plant & machinery	%	Net depreciable value	As per Globally Accepted Accounting Practice (GAAP) for calculating	The PP has considered depreciation rate or amount by spreading equally the net depreciable amount (Total Project cost – salvage value – land cost) for 20 years on	OK

Parameter/input	Symbol/Unit	Value	Source	Means of validation	Conclusion
		spead equally over 20 years	Book depreciation using Straight Line Method (SLM)	SLM basis. Furthermore, the 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'	
Residual value	INR Million	52.21	INR 45.31 million (salvage value) + INR 6.90 million (land cost)	The validation team cross-checked Companies CERC tariff order [9] which confirms that assets can be depreciated up to 90%, hence salvage value is calculated as 45.31 INR Million and is found to be appropriate. In addition, the validation team confirmed the land cost of 6.90 INR Million considered by the PP to be appropriate (1.5% of project cost). Hence, the residual value is confirmed as INR 52.21 Million. LRQA confirmed the salvage value of INR 52.21 Million is added back as revenue in the terminal year, which is in accordance to guidance 4 of 'Guidelines on the Assessment of Investment Analysis'.	OK
Debt	INR Million	322.0	As per CERC tariff order 2009	The PP has considered the debt component as 70% of the project cost, which is appropriate for wind projects in the host country.	OK
Equity	INR Million	138.0	As calculated	Equity portion is calculated by subtracting the debt amount from the total project cost. The equity amount derived is conservative and appropriate for IRR calculation.	OK
Interest Rate	%	14.29	CERC order dated 03.12.2009,	The interest rate considered by the PP is sourced from Central Electricity tariff order on Renewable energy sources dated 03/12/2009, three months before	

[9] http://www.cercind.gov.in/2010/November/Signed_Order_256-2010_RE_Tariff_FY_11-12.pdf

Parameter/input	Symbol/Unit	Value	Source	Means of validation	Conclusion
				project's decision making. The tariff order was available to the PP during the time of decision making and was recent. The validation team further confirmed the interest rate actually applicable to the project (i.e. 14.80%) from the Bank sanction letter dated 22/03/2011 and found the PP assumption is conservative and appropriate in the project context.	
Insurance Charges	INR Million	0.69	TAC order 2001[10]	The insurance charges are calculated as value equivalent to 0.15% of the total project cost. The value has been taken from the insurance information bureau, which gives a relatively conservative estimate of insurance charges, which has been confirmed based on validation team's sectoral expertise.	
Corporate tax rate	%	33.99	As per Indian Budget 2009-10[11]	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 10% surcharge and 3% cess. The PP had applied the corporate tax rate applicable for the project appropriately.	OK
Minimum Alternate Tax (MAT)	%	17.00	As per Indian Budget 2009-10	LRQA confirmed the host country taxation laws applicable during the investment decision and confirmed that the MAT rate is calculated as base rate of 15% with 10% surcharge and 3% cess. The PP had applied the MAT rate applicable for the project appropriately.	OK
Service Tax on O&M expenses	%	10.30	As per Indian Budget 2009-10	The rate was prevalent in the host country at the time of decision making.	OK

[10] https://iib.gov.in/IRDA/tac/circulars/ecir2001.htm#cir8

[11] http://indiabudget.nic.in/ub2009-10/bh/bh1.pdf

	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	**Appropriateness of the benchmark** The benchmark applied for the project activity is expected returns on equity which is calculated based on Capital Asset Pricing Model (CAPM) approach. CAPM is a model based on the proposition that any stock's required rate of return is equal to the risk-free rate of return plus a risk premium that reflects only the risk remaining after diversification. The benchmark based on the Capital Asset Pricing Model (CAPM) method is calculated with the help of the following formula: Required rate of return = $R_f + \beta \times (R_m - R_f)$ Where, R_f - Risk free rate of return R_m - Expected market returns ß - Beta $(R_m - R_f)$ - Market risk premium	OK

[12] http://www.rbi.org.in/scripts/BS_ViewBulletin.aspx?Id=10986

[13] Period since inception of BSE 500 index (February 1999) has been considered

[14] http://beta.bseindia.com/indices/indiceshighlights.aspx?expandable=0

[15] http://pages.stern.nyu.edu/~adamodar/pdfiles/papers/ERPfull.pdf ; Page 22

[16] http://beta.bseindia.com/indices/IndexArchiveData.aspx?expandable=3

[17] Total Risk = Systematic risk + Unsystematic risk

[18] BSE Sensex data (BSE 30) index is available since April 1979. The end date is considered as February 2010, prior to the investment decision.

[19] http://tfsfrd.tamu.edu/tdss/Basic/rateCalc.asp

[20] http://rbi.org.in/scripts/PublicationsView.aspx?id=12291 (5.5% for five year period considered. The value for 10 year period is 6.0%. Hence, conservative)

	Validated situation	Conclusion
benchmark has been applied or if there are verifiable circumstances that have led to a change in the benchmark.	As per the guidance 13 of the 'Guidelines on the assessment of investment analysis' Version 05, for cases where projects could be developed by an entity other than the project participant, the benchmark should be based on parameters that are standard in the market and the DOE shall also include its opinion on whether a benchmark based on parameters that are standard in the market is suitable in the context of the underlying project activity. Accordingly, LRQA validated the below components of CAPM: i) Risk Free Rate of Return (R_f), ii) Beta (Average) arrived from the similar power generating companies (β) iii) Expected Market Returns (R_m). The PP has calculated the equity benchmark (required/expected return on equity) by adding a risk premium over government bond rates based on the publicly available stock market data. The benchmark based on CAPM has been compared with equity IRR (chosen financial indicator) which is in accordance with the guidance 12 of the "Guidelines on the assessment of investment analysis" Version 05. **Risk free rate of return (R_f):** The risk free rate is the return that is assured on capital investment. Essentially, these are the financial instruments for investment without any default risk. In the case of India, the Government of India bonds or securities are considered as the most suitable representative for calculation of risk free rate in the market. LRQA confirmed the returns on Central Government securities as verified from the official website of the Reserve Bank of India[12], which was 8.2628% per annum, available at the time of investment decision. The value considered for the risk free rate of return is for 20 years maturity. Therefore, this is considered appropriate. **Expected market returns (R_m):** The expected rate of return of market portfolio has been calculated by the PP based on the compounded annual growth rate (CAGR) of publicly available BSE-500 Index data for a period of 11.08 years from February 1999 – 28/02/2010[13]. The Bombay Stock Exchange Limited constructed an index, christened BSE-500, consisting of 500 scripts. The changing pattern of the economy and that of the market were kept in mind while constructing this index. BSE-500 Index is a broad-based Index consisting of 500 companies across 20 sectors listed at the Exchange, representing more than 80% of the total market capitalisation on BSE and covers all 20 major industries of the economy[14]. This is the most diversified index of the entire stock indices portfolio	

	Validated situation	Conclusion
	at the BSE. BSE-500 Index is scientifically calculated and the 500 companies are selected based on market capitalisation, liquidity and balanced industry representation. The BSE-500 index is the largest quantum of data (500 companies) available among all the other indices and provides the most comprehensive view of the Indian capital market. As the BSE-500 index represents a widely diversified portfolio in terms of quantum of companies, the selection of the same for the calculation of R_m used in CAPM was deemed to be appropriate. The BSE-500 index started in February 1999. This index has vintage data available since February 1999 (inception date). The PP has considered the BSE-500 index data from February 1999 (period of inception) to 28/02/2010 (prior to investment decision date), which amounts to 11.08 years. As per "Equity Risk Premiums (ERP): Determinants, Estimation and Implications", by Aswath Damodaran[15], the use of vintage data for 10 years and above is considered an acceptable practice. Hence, it was concluded that the calculation of expected market returns using data for a period of 11.08 years is appropriate. The average market return has been calculated with the help of the Compound Annual Growth Rate (CAGR). The CAGR is a metric that measures the average returns from the stock market investments over a period of time. It is a more accurate measure than simple average of returns and calculated as: CAGR = (index value at end/ index value at beginning) ^ (1 / no. of years) – 1 LRQA verified the values considered for calculating the CAGR from publicly available information[16] and confirms the calculation for market rate of return from the data available during the investment decision as 18.15% **Beta *(β)*** The CAPM assumes that investors hold fully diversified portfolios. This means that investors are assumed by the CAPM to want a return on an investment based on its systematic risk alone, rather than on its total risk[17]. The measure of risk used in the CAPM, which is called 'Beta', is therefore a measure of systematic risk. Hence, Beta is the measure of the risk of a specific sector/company. In order to quantify the risk related to this project, the PP had taken the Beta value based on	

	Validated situation	Conclusion
	power index listed on the BSE website. BSE power index is a sector specific index and contains 14 power sector companies and is a good representative for similar sector/company. The validation team confirmed a 2.4 year period for beta calculation is appropriate as it is since the inception of the power index. Furthermore, the article "Estimating Risk Parameters, Aswath Damodaran Stern School of Business". by Aswath Damodaran states the following: *"Risk and return models are silent on how long a time period one needs to use to estimate betas. Services use periods ranging from two years to five years for beta estimates, with varying results".* Hence, the validation team is of the opinion that consideration of 2.4 years data (since the date of inception i.e. November 2007 –February 2010) for beta estimation by the PP is well within the host country accounting practices and hence appropriate. Further, LRQA confirms the Beta calculation is in line with the Guidelines on the Assessment of Investment Analysis version 05 which stipulates that risk premiums applied in the determination of required returns on equity shall reflect the risk profile of the project activity being assessed. The Beta value of the power index has been calculated based on the standard method β = Covariance of return of sector specific index against Market Index/ Variance on the market Index The Beta value calculated based on the above method is 0.97. Thus, the benchmark value of **18.15%** calculated for the project activity as considered by the PP at the time of investment decision making is reasonable and acceptable. In addition, the PP had provided additional benchmark scenario considering BSE-Sensex index wherein the data vintage for calculating the market returns is larger as compared to the project activities operational lifetime of 20 years. The market returns for BSE-Sensex are available for a period of 30.9 years. The validation team confirmed the benchmark calculation using BSE-Sensex index as below: BSE Sensex: The market returns were calculated based on a period of 30.9 years[18], beta was calculated based on a 2.4 year period which is considered appropriate as detailed above. The benchmark value referring BSE Sensex is calculated as 18.3% as below.	

	Validated situation	Conclusion
	Risk Free Rate of Return (Rf) 8.2628% Beta (Average) 1.033 Market Returns (Rm) 17.95% Hence, Benchmark (CAPM) = 18.3% (calculated as per formula for CAPM in above section) Further to this, the validation team cross-checked the additionality of the project by comparing the equity IRR against benchmark using default values following 'Guidelines on the assessment of the investment analysis' as below: As per paragraph 15 of Guidelines on the assessment of the investment analysis (Version 05, EB 62), the value for cost of equity can be selected from Appendix. The value of Return on Equity for Group-1 projects (category applicable to the project activity) in India is 11.75%. As per paragraph 7 of Appendix of the above mentioned document, in situations where an investment analysis is carried out in nominal terms, project participants can convert the real term values provided in the table below to nominal values by adding the inflation rate. The inflation rate shall be obtained from the inflation forecast of the central bank of the host country for the duration of the crediting period. If this information is not available, the target inflation rate of the central bank shall be used. If this information is also not available, then the average forecasted inflation rate for the host country published by the IMF (International Monetary Fund World Economic Outlook) or the World Bank for the next five years after the start of the project activity shall be used. The PP has taken the option of considering "The inflation rate shall be obtained from the inflation forecast of the central bank of the host country for the duration of the crediting period". Since the data available is for 5 and 10 Year period, the minimum data among 5 year period and 10 year period has been considered, which results in a conservative benchmark. The relationship between real rate and nominal rate is (Fisher formula)[19]: Rn = (1 + Rr)(1 + Ri) - 1 = Rr + Ri + RrRi Where, Rn is nominal rate, Rr is real rate and Ri is inflation rate. Rn = (1 + 11.75%)(1 + 5.5%[20]) – 1 = 17.9%	

	Validated situation	Conclusion
	The validation team confirmed that the IRR does not cross the benchmark calculated based on default value i.e. **17.34%,** even after conducting sensitivity analysis. In the above context, the benchmark calculated by the PP is deemed reasonable in the context of the latest Guidelines on the assessment of the investment analysis (Version 05, EB 62) and hence is acceptable.	
5. If 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, that is, 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

	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	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 (for example, the defined region) of the common practice analysis is appropriate for the assessment of common practice related to the project activity's technology or industry type.	Not applicable. The project is categorised as a small scale project activity and hence, common practice analysis is not required.	NA
2. Determine to what extent similar and operational projects (for example, using similar technology or practice), other than CDM project activities, have been undertaken in the defined region.	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

	Validated situation	Conclusion

SECTION 7. Monitoring plan				
1. *Compliance of the monitoring plan with the approved methodology.* Confirm that the MP contains all the necessary parameters and that they are monitored in accordance to the approve Methodology using the following table:				
Parameter	**Monitoring Methodology 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 Guidelines to SSC CDM Methodologies. If applicable, measurement results shall be cross checked with records for sold/purchased electricity (e.g. invoices /receipts).The	**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:** Breakup of Net Export as per Monthly Generation Report and Joint Meter Reading authorized by R.R.V.P.N.L. The quantity of net electricity supplied to the grid (i.e. Net Export in kWh) by the project activity will be taken from the break-up sheet prepared by Suzlon India Limited on the basis of monthly Joint Meter Reading (JMR) certificate certified by Rajasthan Rajya Vidyut Prasaran Nigam Limited (RRVPNL). The value for net electricity supplied to the grid will be cross verified from the monthly invoice raised by the project participant. **Value of data:** 13,789 MWh/year **Description of measurement methods and procedures to be applied:** **Net electricity delivered to the Grid:**	The 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 13,789 MWh/year. 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 (33kV/220kV) wherein the electricity is stepped up to 220kV. There shall be feeder-wise monitoring arrangement to measure the electricity export and electricity import using tri vector energy meters. The electricity (export and import) for the connected WTGs shall be apportioned on	OK ~~CAR 04~~

	net electricity export/supplied to a grid is the difference between the measured quantities of the grid electricity export and the import. If applicable, cross check net electricity supplied to a grid as gross energy generation in the project activity power plant minus the auxiliary/station electricity consumption, technical losses and electricity import from the grid to the project power plant measured at the grid interface/connection used for billing purposes.	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. **QA/QC procedures to be applied:** . The energy meter reading are taken on monthly basis Annual Testing of all the meters will be undertaken and faulty meters will be duly replaced immediately. However the meters will be calibrated at-least once in 3 years. The Net Units generated will be cross checked against the invoice raised by the PP towards the Discom **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.	monthly basis by the State Utility at 33kV/220kV 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 WTGs connected to the applicable metering point) and the electricity (export, import etc) recorded by the energy meters at the feeder at 33kV/220kV substation on monthly basis. Further, the stepped up electricity (at 220kV) shall then be sent to a common delivery point at the 220kV level. The common metering point at 220kV Substation concurrently records total electricity (total export and total import) received from all connected metering points. The common metering point shall consist of both main & check meters. 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 transmission losses are calculated as per the guideline in the Power Purchase Agreement. 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. The monitoring arrangement for the $EG_{BL,y}$ was	

			confirmed during site visit interviews with the PP and the O&M staff.	
$EG_{Export,Project,y}$	**Description:** Quantity of electricity exported to the grid in year y **Unit:** MWh/y **Monitoring/recording Frequency:** Continuous monitoring, hourly measurement and at least monthly recording **Measurement methods and procedures:** Measurements are undertaken using energy meters. Calibration should be undertaken as prescribed in the relevant paragraph of .General Guidelines to SSC CDM Methodologies. If applicable, measurement results shall be cross checked with records for 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	**Description:** Quantity of electricity exported 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 Generation Report and Joint Meter Reading authorized by R.R.V.P.N.L. The value for electricity exported to the grid will be cross verified from the monthly invoice raised by the project participant. **Value of data:** 13,789 MWh/year **Description of measurement methods and procedures to be applied:** Detailed under section B.7.2 of PDD. **QA/QC procedures to be applied:** The energy meter reading are taken on monthly basis Annual Testing of all the meters will be undertaken and faulty meters will be duly replaced immediately. However the meters will be calibrated at-least once in 3 years. The electricity exported will be cross checked against the invoice raised by the PP towards the Discom **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,	The validation team confirms the description of the parameter is in accordance with the methodology i.e. Quantity of electricity exported 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 13,789 MWh/year. The monthly break up report provided by the state utility shall be used as source. This was confirmed during site visit interviews with the PP and the O&M staff **Measurement methods:** There shall be feeder-wise monitoring arrangement to measure the electricity export and electricity import using tri vector energy meters. Further, the stepped up electricity (at 220kV) shall then be sent to a common delivery point at the 220kV level. The common metering point at 220kV GSS concurrently records total electricity (total export and total import) received from all connected metering points. The common metering point shall consist of both main & check meters. 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)	OK

	energy generation in the project activity power plant minus the auxiliary/station electricity consumption, technical losses and electricity import from the grid to the project power plant measured at the grid interface/connection used for billing purposes.	whichever occurs later.	The transmission losses are calculated as per the guideline in the Power Purchase Agreement. The electricity exported by project activity to the grid by the given WTG for the given month (net export kWh) is obtained after accounting transmission losses. The monitoring details / apportioning mechanism are appropriately mentioned under section B.7.2 of the PDD and were confirmed during the site visit.	
$EG_{Import,Project,y}$	**Description:** Quantity of electricity imported from the grid in year y **Unit:** MWh/y **Monitoring/recording Frequency:** Continuous monitoring, hourly measurement and at least monthly recording **Measurement methods and procedures:** Measurements are undertaken using energy meters. Calibration should be undertaken as prescribed in the relevant paragraph of .General Guidelines to SSC CDM Methodologies. If applicable, measurement results shall be cross checked with records for	**Description:** Quantity of electricity imported from 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 Generation Report and Joint Meter Reading authorized by R.R.V.P.N.L. The value for electricity exported to the grid will be cross verified from the monthly invoice raised by the project participant. **Value of data:** 0 MWh/year (ex-ante estimation) **Description of measurement methods and procedures to be applied:** Detailed under section B.7.2 of PDD. **QA/QC procedures to be applied:** The energy meter reading are taken on monthly basis Annual Testing of all the meters will be undertaken and faulty meters will be duly	The validation team confirms the description of the parameter is in accordance with the methodology i.e. Quantity of electricity imported from 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 0 MWh/year for ex-ante purpose. The monthly break up report provided by the state utility shall be used as source. This was confirmed during site visit interviews with the PP and the O&M staff **Measurement methods:** Please refer to validation opinion provided under 'Measurement methods' for parameter '$EG_{Export,Project,y}$' as above.	OK

	sold/purchased electricity (e.g. invoices /receipts).The net electricity export/supplied to a grid is the difference between the measured quantities of the grid electricity export and the import. If applicable, cross check net electricity supplied to a grid as gross energy generation in the project activity power plant minus the auxiliary/station electricity consumption, technical losses and electricity import from the grid to the project power plant measured at the grid interface/connection used for billing purposes.	replaced immediately. However the meters will be calibrated at-least once in 3 years. The electricity exported will be cross checked against the invoice raised by the PP towards the Discom **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.		
$EG_{Controller,y}$	This is not a requirement as per methodology. However, this shall be used for apportioning of electricity and calculation of $EG_{,Export,Project,y}$ and $EG_{,Import,Project,y}$	**Description:** Electricity generated by installed WTG of PP connected to particular feeder **Unit:** MWh/y **Source of data to be used:** Record of metering available at Central Monitoring Station for the project activity **Value of data:** 13,789.0 MWh/year (ex-ante estimation) **Description of measurement methods and procedures to be applied:** Each WTG in Wind Farm is equipped with controller meter located inside the WTG. The	The validation team confirms the description of the parameter is appropriate. The unit is correctly mentioned as MWh/year and the value of data is 13,789 MWh/year. However, this shall be a higher value as recorded at the WTG end. However for ex-ante presentation this is deemed appropriate. The records at the Central Monitoring Station shall be used as the source. This was confirmed during site visit interviews with the PP and the O&M staff **Measurement methods:** The controller meter provides daily generation report from each WTGs.	OK

		controller meter provides daily generation report from each WTGs. The controller meter located in each WTG is a microprocessor based intelligent controller which controls entire turbine operation and record energy generation with basic signal of CT and PT .The controller meter does not require calibration as it is self calibration type. Further, controller will stop the turbine if it detects any error in measurement therefore avoids the uncertainty in the generation data. **QA/QC procedures to be applied:** The monitoring of all these wind turbines is performed from a common monitoring station as a part of central monitoring system. The system consists of a state- of- the- art monitoring station connected via optic cables to individual WTG. CMS managed by well trained staff personnel. The personal are always present on site to monitor various parameters of power generation and deal with any problems related to generation, transmission or maintenance. **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.	The monitoring details are appropriately mentioned under section B.7.1 and B.7.2 in the PDD and were confirmed during the site visit.	

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 organisational structure, roles and responsibility, the monitoring instruments, data monitoring procedures, emergency preparedness and the management system. During the site visit, the validation team has confirmed that the monitoring is planned in a reasonable manner and considered feasible to be implemented by the PP. CAR 04 was raised as the apportioning logic for calculation of net electricity supplied was not presented in the PDD. In response, the PP updated section B.7 of the PDD to provide the details on the apportioning logic. Hence, the CAR was closed.	~~CAR04~~ OK
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		
1. Determine whether comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity, have been invited.	The PP had conducted the local stakeholders meeting on 15/03/2011. The PP issued personal invitations on 07/03/2011 to the identified stakeholders. In the stakeholders' meeting, discussion was made on the project's potential impact on the local environment, potential adverse effects and the expected benefits to the local community. Justification, given by the PP, was presented during the meeting and it is described in the PDD. Review of the Stakeholder meeting minutes shows that people were supportive of the project activity and expressed no negative comment on the project activity. No negative comment was received through the local stakeholders' consultation processes. During the site visit, the validation team confirmed with a section of the stakeholders on the meeting conducted by the PP and the mode of invitation extended for the meeting. It was also confirmed that they had no concerns with respect to the project activity. The stakeholders confirmed their presence in the stakeholder meeting held by the PP. Stakeholders appreciated the opportunity offered to the local villagers as security guards and commented that due to the installation of such wind projects, road conditions in the area have improved. LRQA confirms that the local stakeholder consultations were adequate with respect to identification of local stakeholders, seeking their views and taking due account of any comments and conducted in a transparent manner. The stakeholder consultation process, targeted stakeholders and due actions for concerned issues have been clarified in the PDD.	OK
2. 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

	Validated situation	Conclusion
3. 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		
1. 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 modernisation 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 CDM project activity does not require any EIA to be conducted.	OK
2. 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
3. Confirm that environmental impacts considered significant by the PPs or the Host country are described in the PDD, including mitigation measures.	The rules of the host country do not require EIA for the type of the project activity.	OK

Findings[21]

1. Grade / Ref:	CAR 01	2. Date:	04/11/2011	3. Status:	Closed
4. Requirement:		CDM VVM Para 44 & 51			
5. Nature of the Issue Raised:					
The Letter Of Approval (LOA) for this project activity from the host country has not been submitted by PP for validation.					
6. Nature of responses provided by the project participants:					
The letter of approval dated 14/03/2012 (ref no. 4/22/2011-CCC) issued by host country DNA has been provided.					
7. Assessment of such responses:					
The letter of approval dated 14/03/2012 (ref no. 4/22/2011-CCC) issued by host country DNA has been provided.					
8. References to resulting changes in the PDD or supporting annexes:					
NA					

1. Grade / Ref:	CAR 02	2. Date:	04/11/2011	3. Status:	Closed
4. Requirement:		Guideline for the reporting and validation of plant load factors, version 01 CDM VVM Para 110			
5. Nature of the Issue Raised:					
PP to provide the evidence for the Plant Load Factor considered for emission reductions and financial analysis. Also provide the emission reduction calculation sheet.					
6. Nature of responses provided by the project participants:					
The PLF is referred based on the third party report and is correctly referred in the investment analysis and ER estimation sheet.					

[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

7. Assessment of such responses:
PP provided third party PLF estimation report as per which the net PLF considered for investment analysis / emission reduction estimate is 18.74%. The validation team confirmed the PLF estimate from the third party report prepared by True Wind International Certification and hence the PLF is appropriate in accordance with 'Guideline for the reporting and validation of plant load factors' version 01.
8. References to resulting changes in the PDD or supporting annexes:
Section B.5, B.6 of PDD version 4.1, IRR calculation sheet version 4, ER calculation sheet version 2.

1. Grade / Ref:	CAR 03	**2. Date:**	04/11/2011	**3. Status:**	Closed
4. Requirement:		Guidance on assessment of investment analysis, Version 5			
5. Nature of the Issue Raised:					
Related to financial analysis: 1. The input data used for benchmark determination is not presented under section B.5. 2. The input data/parameters used for financial analysis are not presented under the section B.5 of the PDD. 3. PP to justify the use of one year data for calculating beta. 4. PP has referred the commissioning date as 15/07/2010 in the financials as per the commissioning certificate. However, the guidelines on the assessment of investment analysis require the Input values used in all investment analysis should be valid and applicable at the time of the investment decision taken by the project participant. 5. PP has used BSE 500 index from February 1999 to February 2010. PP to justify the selection of BSE-500 over other indices such as BSE Sensex considering the data vintage available in comparison with the project operational lifetime of 20 years.					
6. Nature of responses provided by the project participants:					
1. The input data used for benchmark determination has now been incorporated. Please refer the section B.5 of the revised version of the PDD. 2. The input data/parameters used for financial analysis has now been incorporated. Please refer the section B.5 of the revised version of the PDD. 3. Please refer the revised version of financial spreadsheet. The period selected to calculate the expected market return and beta, is from the month of beginning of Power Index to the month before the decision making date. 4. Please refer the revised version of financial spreadsheet. The calculations have been done as per the expected date of commissioning, which is known at the time of investment decision taken by the PP and in line with Guidance 6 of Annex 5, EB62. 5. The BSE-500 Index is a Broad-Based Index and constitutes a large pool of companies across 20 sectors listed at the Exchange, representing approximately 93% of the total Market Capitalization. It is an index which covers all the major Power companies and is thus used for arriving at the market returns. However, the PP has also evaluated the benchmark using the BSE-Sensex, the results of which are almost equal.					
7. Assessment of such responses:					
1. Revised PDD details the input parameters used for calculating the benchmark. The validation team confirmed the input data based on publicly available sources.					

2. The input data considered for investment analysis are now detailed in the revised PDD. The validation team confirmed the input data parameters considered for investment analysis are appropriate and available at the time of investment decision making.
3. PP has calculated beta considering the power index since inception.
4. The commissioning date is considered as 30 October 2010 in the revised financials. The validation team confirmed the date to be appropriate as it was as per the expected commissioning date mentioned in the quotations available at the time of investment decision making.
5. The PP has made the choice of using BSE 500 index for the IRR calculation at the time of decision making. The benchmark of 18.15% is obtained using BSE-500 index considering a data vintage of 11.08 years for calculating the market returns. In addition, the PP provided additional benchmark calculation sheets considering the BSE-Sexsex index for which the data vintage for market returns available for 30.9 years. The validation team confirmed the benchmark calculations based on the BSE-Sensex as 18.3%. Hence, the benchmark calculated by the PP (18.15%) is deemed conservative. Further to this, the validation team cross-checked the financial additionality of the project activity by comparing the Equity IRR against default value based return on equity from " Appendix of Default values for the expected return on equity" of EB62,Annex 5,Page 7- the value calculated is 17.90%. The IRR does not even cross default value based return on equity (17.90%) even after applying sensitivity variations.

8. References to resulting changes in the PDD or supporting annexes:
Section B.5 of PDD version 4.1, IRR calculation sheet version 4, ER calculation sheet version 2.

1. Grade / Ref:	CAR 04	**2. Date:**	04/11/2011	**3. Status:**	Closed
4. Requirement:		Guidelines for completing the CDM SSC PDD and CDM VVM Para 122			
5. Nature of the Issue Raised:					
PDD mentions the monitoring of net electricity supplied to the grid shall involve apportioning of electricity based on the generation at WTG and the values of main and check meter. However, section B.7 does not describe the apportioning process in a transparent manner.					
6. Nature of responses provided by the project participants:					
Monitoring Plan has now been revised in section B.7.2 of the PDD for transparency.					
7. Assessment of such responses:					
The monitoring plan of the revised PDD details the apportioning procedure for calculating the net electricity supplied to the grid. The validation team confirmed the monitoring procedure based on interview with the O&M contractor and Electricity Board personnel during the site visit.					
8. References to resulting changes in the PDD or supporting annexes:					
Section B.7 of PDD version 4.1					

1. Grade / Ref:	CL 01	**2. Date:**	04/11/2011	**3. Status:**	Closed
4. Requirement:		Guidelines for completing the CDM SSC PDD Version 05			
5. Nature of the Issue Raised:					
Whilst the project activity is connected to NEWNE grid system, PP to clarify the reference of Southern regional grid in the section B.6.					
6. Nature of responses provided by the project participants:					
The reference of Southern regional grid has been taken in B.6 in order to elaborate each step under "Tool to calculate the emission factor for an electricity system" (Version 02.2.0, Annex 12, EB 61). However the irrelevant references have now been omitted in the revised version of PDD.					

7. Assessment of such responses:
Revised PDD presents the calculation of emission factor for the NEWNE grid which connected to the project activity. The calculation of grid emission factor is corrected to be in line with the requirements of the 'Tool to calculate the emission factor for an electricity system'.
8. References to resulting changes in the PDD or supporting annexes:
Section B.6 of PDD version 4.1

1. Grade / Ref:	CL 02	2. Date:	16/02/2012	3. Status:	Closed
4. Requirement:		Guidance on assessment of investment analysis, Version 5			

5. Nature of the Issue Raised:

1. PP to provide the basis for referring the particular tariff rate considering the electricity wheeled shall replace electricity from the grid (at electricity purchase price). Also, justify why there is no escalation in the tariff rate.

2. PP to justify the basis for considering the de-rating of electricity generation from 11th year. How the TERI report is considered to be applicable for the project activity and the WTG type. Also, duration is applied for the whole 10th year (2021) whereas the 1st year is for a part period beginning 30th Oct 2010.

3. PP to clarify the calculation of Net Depreciable Value – Cost of land seems to be deducted twice.

4. PP to clarify the calculation of cumulative profits – see calculation for year 2 and year 3.

5. PP to clarify the calculation of taxable profits i.e. deducting benefits from book PBT instead of IT profit (after adjusting depreciation)

6. PP to clarify the MAT calculations. PP has considered MAT payment in 4 years (Mar-2022 to Mar-2025), But in subsequent years when Corporate Tax is paid, MAT credit is not considered.

6. Nature of responses provided by the project participants:

1. Tariff rate is being considered as INR 5.00/kWh as per PPs assumptions at the time of investment decision making and hence considered for investment analysis.

2. PP has now removed de-rating in electricity generation.

3. The same error has been rectified in the revised version of financials, and the same has been submitted for Validation.

4. The same has been addressed in the revised version of financial-sheet.

5. The same has been addressed in the revised version of financial-sheet.

6. MAT-calculations have been updated, and the credit has been considered in the revised version of Financials.

7. Assessment of such responses:

1. The validation team confirmed during site visit interviews that the PP had considered a tariff of INR 5.00/kWh at the time of investment decision making which was based on internal workings. The tariff rate was also referred to in the internal note considered by the Board of Directors during the investment decision making and hence considered appropriate for use in the investment analysis.

   Further, the validation team cross-checked the HT Industrial Tariff Rate assigned by RERC order[22] for the financial year 2011-12 and confirmed a tariff rate of INR 5.00/kWh for large industrial category (HT-5) which is appropriate.

   Moreover, it is evident that the savings in tariff rate cannot be considered more than the decided tariff purchase rate by RERC.

   Furthermore, the PP is in a long-term contractual agreement with RRVPNL & Ajmer Discom for 20 years along with the end-user without any escalation consideration.

   Moreover this category is the highest cross subsidising category, and it is required to be brought down progressively, as per Ministry of Power Tariff-Design approach[23], which suggest there might be a case of de-escalation in tariff.

   Again tariff for this category has not been revised since 2001, that was INR 4.01/KWh, which is applicable at the time of decision making (page 87 of document "T.O.-8.9.11- Sec 3 and 4")[24]. And since October 2011, it has been revised to INR 5.00/KWh; however, the PP has conservatively considered INR 5.00/kWh since project operation.

2. PP could not justify the applicability of de-rating from 11th year onwards and hence removed it from the revised investment analysis spreadsheet. The validation team confirmed the non application of de-rating by reviewing similar registered wind projects.

3. The residual value is correctly calculated in the revised financials which include the salvage value of the plant & machinery and the land cost.

4. The calculation of cumulative profits is now corrected in the revised investment analysis spreadsheet.

5. The taxable profits are correctly calculated in the revised investment analysis spreadsheet.

6. MAT is correctly accounted in the revised investment analysis spreadsheet.

[22] Please refer page 87 at, http://www.jaipurdiscom.in/tariff/sec3_4.pdf .

[23] Refer page 17 at, http://www.powermin.nic.in/whats_new/pdf/Tariff_Policy.pdf

8. References to resulting changes in the PDD or supporting annexes:
Section B.5 of PDD version 4.1

1. Grade / Ref:	CL 03	2. Date:	11/10/2012	3. Status:	Closed
4. Requirement:		Guidelines for completing the CDM SSC PDD Version 05			

5. Nature of the Issue Raised:
PP to provide evidence for the unique coordinates for the WTGs.
6. Nature of responses provided by the project participants:
The Google Earth snapshots are provided as evidence for the unique coordinates for the project WTGs. Also, the longitude details for the WTG is now corrected to 70° 39' 00.9" N.
7. Assessment of such responses:
The validation team confirmed the latitude – longitudes for the individual WTGs from standard Google Earth website as below:

WTG location no.	Latitude				Longitude			
MK 5	N	27°	10'	46.9"	E	70°	38'	12.0"
MK 6	N	27°	10'	40.3"	E	70°	38'	29.7"
MK 7	N	27°	10'	33.7"	E	70°	38'	47.4"
MK 8	N	27°	10'	18.2"	E	70°	39'	00.9"

Validation team confirms that the revised PDD correctly mentions the unique coordinates for the project WTGs.
8. References to resulting changes in the PDD or supporting annexes:
Section A.4.1.4 of PDD version 4.1

[24] http://www.rerc.rajasthan.gov.in/Order111.zip